ECU.TRANSIT

Payroll System

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# Conceptual Walkthrough Package

Executive Summary

This is a conceptual walkthrough for the ECU Transit System, which shows a high level overview of the business benefits and potential scope of the project. This document includes the business areas that the system will touch, including the current environment, the proposed system objectives, constraints, and the expected business benefits from the system. A preliminary stakeholder analysis also identifies all the people who may be affected by the implementation of the proposed system. Supporting documents include current environment, proposed system objectives and constraints, expected benefits, stakeholders, and context diagram.

Current Environment

For our proposed system one of the main goals was for the system to make things easier not add more work on to the drivers. The current sign in process will remain the basically the same. At the beginning of a drivers shift the driver enters their driver ID into the talking bus system. The system then tracks the bus and its routes until the driver then signs out at the end of the shift. Since this data is not currently necessary for the pay details drivers may, on occasion, forget to sign into the system, and as, such their data is not recorded. Currently the data for shift information is gathered by the student and is turned into transit. The data is also collected by the talking bus system but the data is only used to compare to the timesheets to confirm that they are accurate. As of now, the drivers turn in their timesheets of the routes that they drove. The Payroll Manager then takes those sheets and manually uploads that data into the computer. A report is also printed off that the student drivers will have to sign and approve. This report is broken up into the different shift types and their hourly rates. The pay data is then transferred into banner so that ECU may pay the driver.
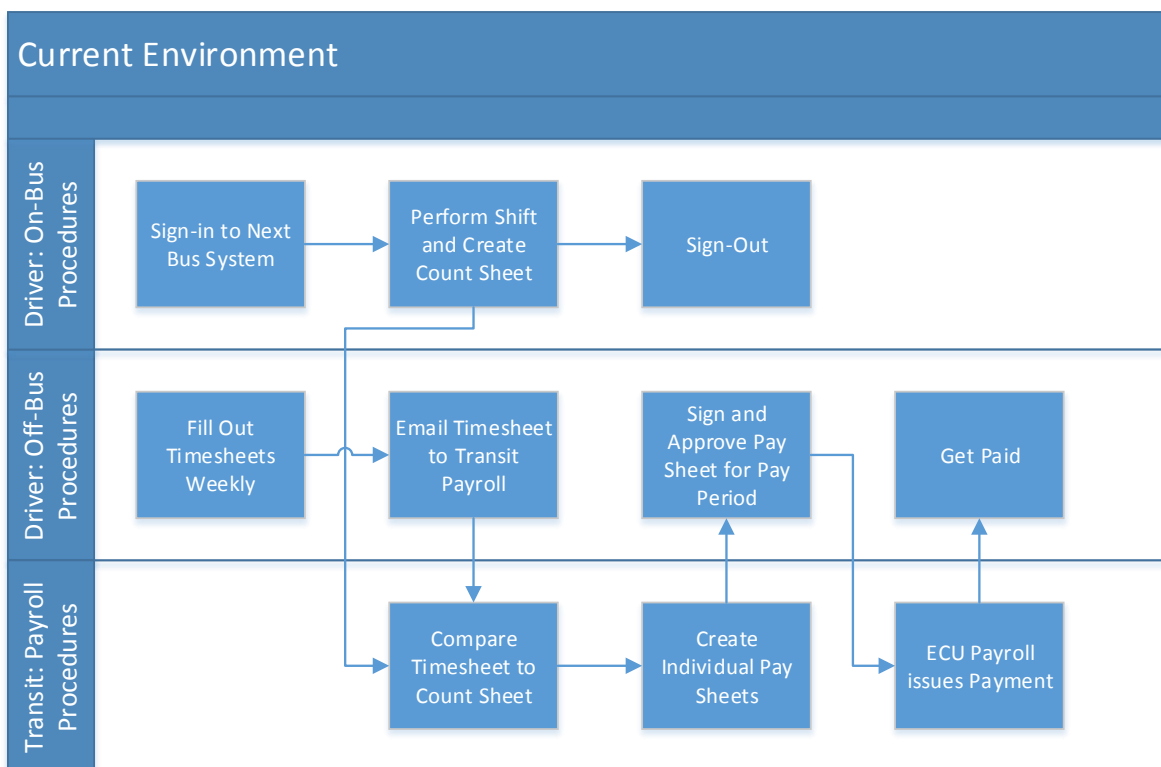
Proposed System Objectives

The proposed system will incorporate the Talking Bus system that is already in place. The Talking Bus system tracks the bus and includes the route driven and the driver. From there the driver will simply drive the bus and at the end of their shift will sign-out of the system. As this system is already in place we will not need to change the way that drivers sign in and out. The proposed system will eliminate the need for timesheet reconciliation and manual timesheets written by the students. Also the payroll system is streamlined and drivers can approve their timesheets online.
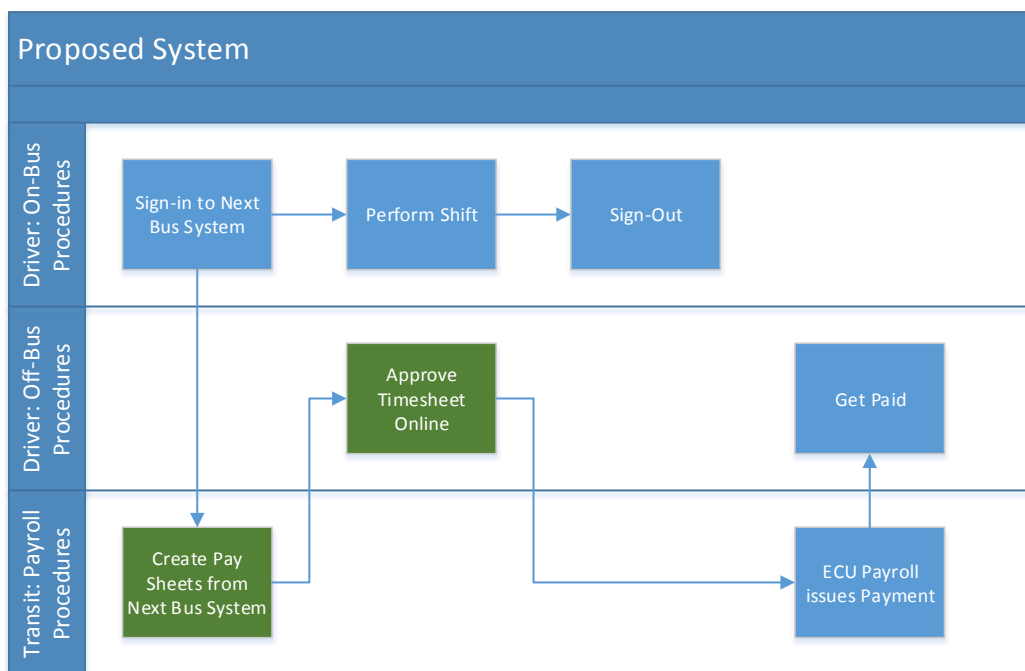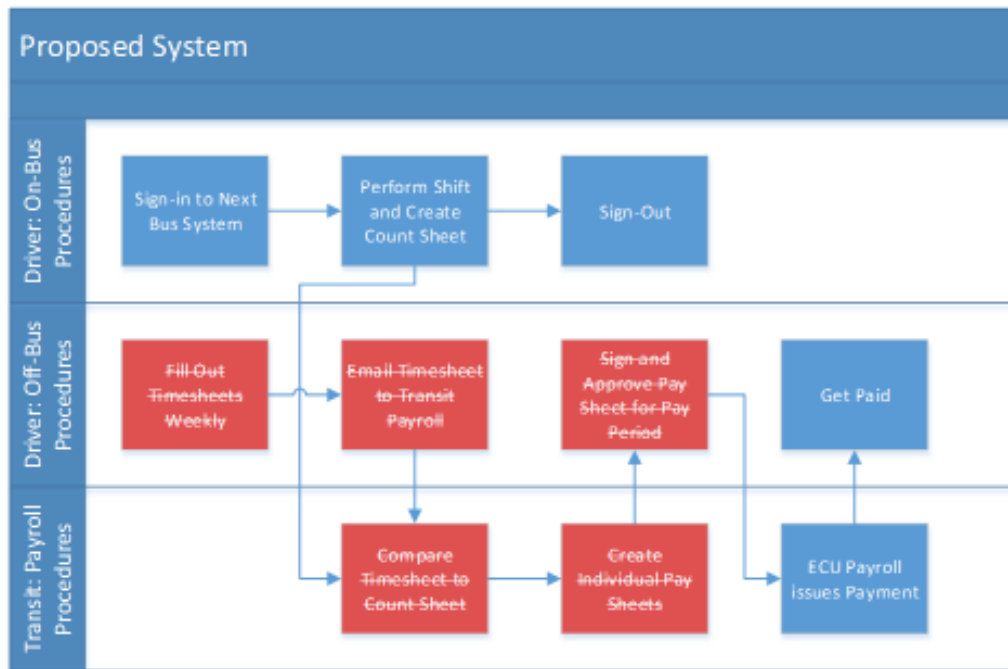
Constraints

The system must work with the Talking Bus system as that is the system that is already in place. We cannot add to the data that the Talking Bus system collects, meaning that we cannot change the way it collects data. The information that is inputted into the banner system for the purpose of ECU payroll must remain the same. We do not have the ability to change the banner system as it is a university wide system.

Expected Benefits

This system will bring ease to the ECU transit system. One of the benefits of this system is that it allows an accurate processing of time sheets. There is a less of a chance that there will be mistakes on the time sheets since they are coming from the Talking Bus System. There is also a less of a chance that payments will be late. Most drivers can expect their payment to be on time. ECU transit will not have to be concerned with budgeting liabilities since the chance that a driver comes back for a missing payment is slim. Prompt creation of timesheets will also be an expected benefit from the system. Drivers will be able to have their timesheets created by signing into the Talking Bus System.

Stakeholders

Bus Drivers – As the primary users of this system, they will come in contact with this system the most. They are a functional stakeholder group. Bus drivers will interact with the proposed system by approving timesheets online. The proposed system will make it easier on bus drivers by not having to fill out a timesheet, email it to the payroll manager, and wait to approve the pay sheet.

Payroll Manager, Jo Herring – As the most effected stakeholder in this system, Jo Herring will have to change the way he does payroll with this new proposed system. The proposed system will allow the payroll manager to only be concerned with creating pay sheets from the NextBus System. The payroll manager will not have to worry about comparing timesheet to count sheet and create individual pay sheets.

IT Manager, Joel Barefoot – As a secondary stakeholder, Joel Barefoot may not come into direct contact with the system as the primary stakeholders but as the IT manager he must approve the proposed changes to the system.

Context Diagram
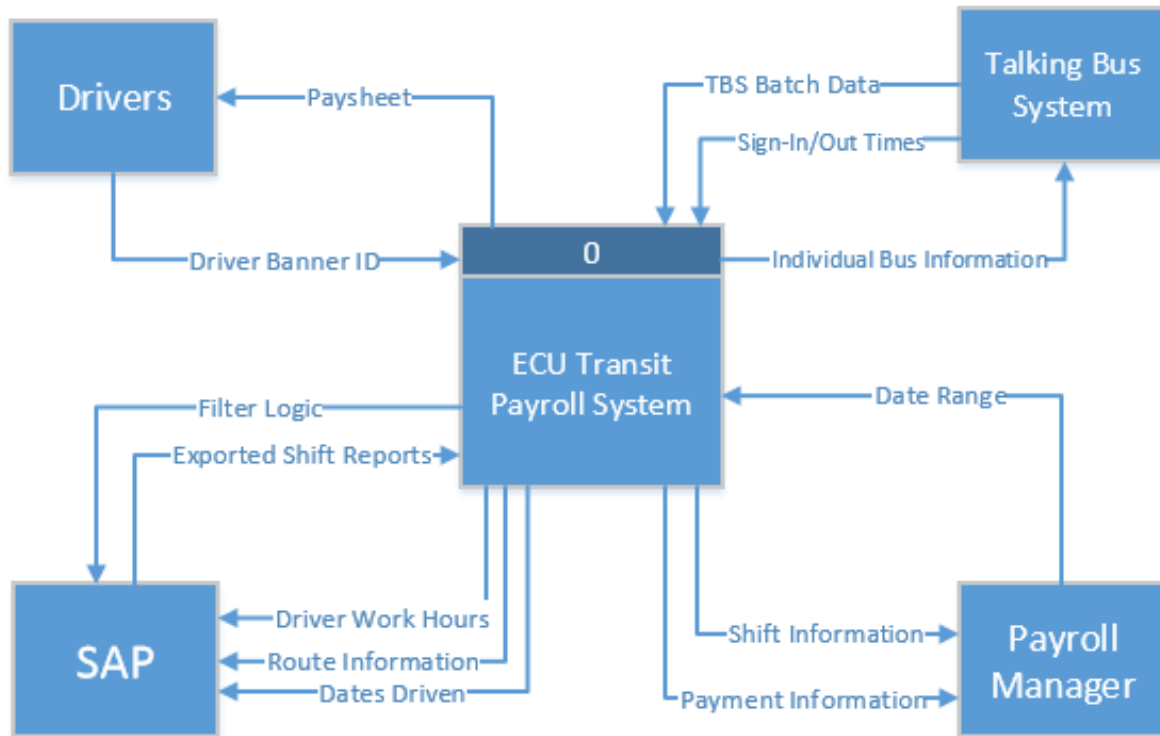
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Analysis Package

Executive Summary

The following documentation is the Analysis Package for the ECU Transit Payroll System. It includes a high-level Use Case Diagram along with three individual use cases documenting the major functions of the system. It identifies the Primary Actors that will come in contact with the system, as well as the secondary systems which will be involved in the process. It also contains a short analysis of additional requirements that were elicited during this process.

One of the important things that we discovered in this stage, was the other systems that would be involved. Our system will rely heavily on SAP Business Objects to source large amounts of data from other data collection systems that acquire Bus data. Because of this, we have arranged to meet with the individual who manages the ECU Transit ERP systems to ensure that our data coming from upstream systems will be sufficient for our needs.

Use Case Diagram
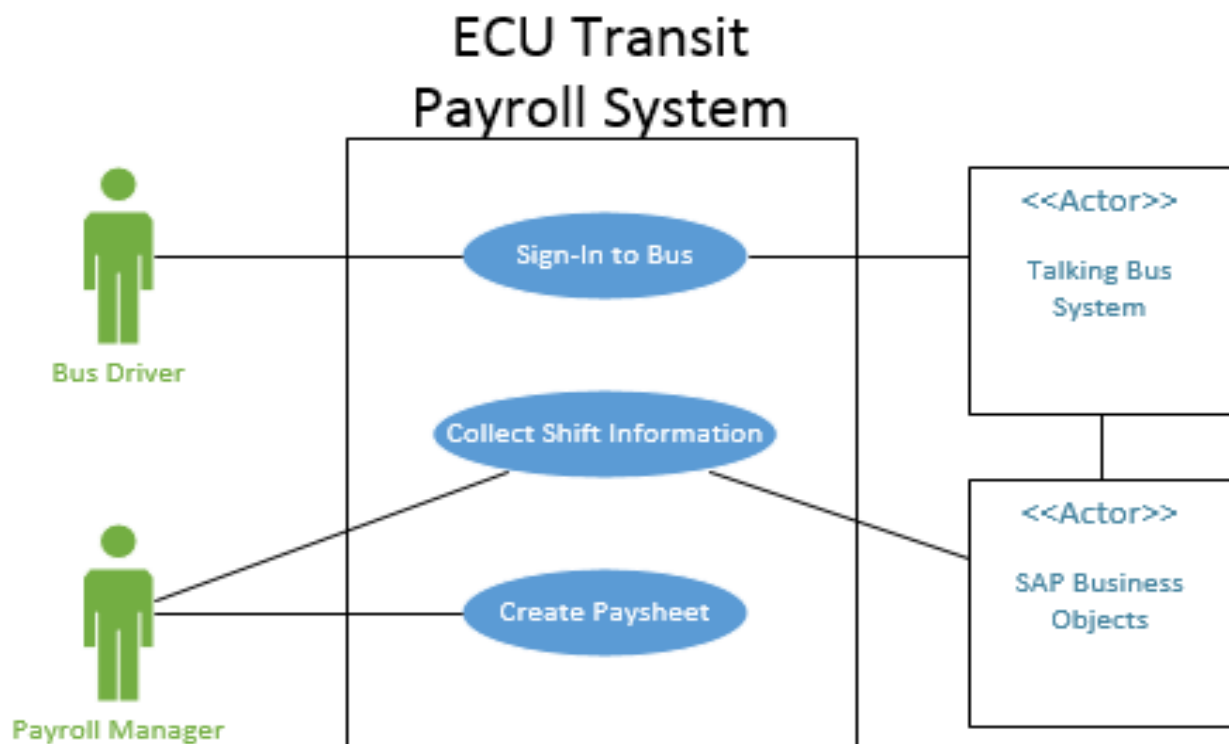
Fully Detailed Use Case Specifications

Sign-In to Bus		ID: 1	Importance Level: High
Primary Actor: Bus Driver			
Short Description: Bus Driver logs into the bus prior to driving.			
Trigger Type: External			

Major Inputs:

Description   Source

Driver BannerID_____   Bus Driver____

_____ _____

_____ _____

_____ _____

Major Outputs:

Description   Destination

Time (Sign-In and Sign-Out)   Talking Bus System

Date_____   Talking Bus System

WorkpieceID_____   Talking Bus System

Complete Timesheets_____   ECU Transit_____

Major Steps Performed

1) Driver signs into the bus to start their shift.

2) The Talking Bus System logs the time and date the driver logged into the bus.

3) Driver finishes shift and signs out.

4) The Talking Bus System sends a timesheet to ECU Transit.

Information for Steps

- Driver BannerID

- Time Sign-In and Time Sign-Out, Date, WorkpieceID, and Driver BannerID.

- The Talking Bus System stores information when driver signs out of the bus.

- Completed Timesheet

Collect Shift Information		ID: 2	Importance Level: High
Primary Actor: Payroll Manager			
Short Description: The Payroll Manager collects shift information from SAP and moves it to the reports.			
Trigger Type: External			

Major Inputs:

Description   Source

Date Range_____   Payroll Manager_

_____   _____

Major Outputs:

Description   Destination

Shift Information_____   Paysheets____

Timesheet Information_____   SAP Export_____

Major Steps Performed

1) Payroll Manager wishes to collect Shift Information.

2) Payroll Manager runs a report in SAP for the date range of a billing cycle.

3) SAP returns the Shift Information for the user provided date range.

4) Payroll Manager will have SAP export the unformatted data.

Assumption: This use case has no direct inputs since SAP already performs a batch job daily to import all data from the Talking Bus System.

Information for Steps

- Date Range

- Shift Information (WorkpieceID, Driver BannerID, Date, Sign-In Time, Sign-Out Time)

- Timesheet Information

Create Paysheet		**ID: 3**	**Importance Level: High**
Primary Actor: Payroll Manager			
Short Description: The Payroll Manager will create a pay sheet using the talking bus data.			
Trigger Type: External			

Major Inputs:

Description	Source
Pay Rates	Transit Management
Special Rates	Transit Management
Driver/Time Data	SAP Export

Major Outputs:

Description	Destination
Pay Sheets	Drivers
_____	_____
_____	_____

Major Steps Performed	Information for Steps
1) Payroll Manager wants to create the pay sheet report.	
2) Payroll manager will enter info from SAP (timesheet report data).	• WorkpieceID, Driver BannerID, Date, Time Sign-In and Time Sign-out
3) Payroll Manager will update pay rates for new drivers or drivers who recently received a raise.	• Driver Pay Rates
4) Payroll Manager will verify that the special pay rates are correct.	• Special Pay Rates
5) Payroll Manager runs report that will include the following data.	• Pay Sheets
5.1) Information sorted by Driver Name, Route, WorkpieceID and Date	
5.2) Totaled by WorkpieceID and Driver Name	

Standard Naming Conventions

Because our project deals primarily with on-the-fly calculations that deal with predetermined data, we did not have to worry about creating standard naming conventions. All of the variables in our code are private variable that only apply to each sub-procedure.
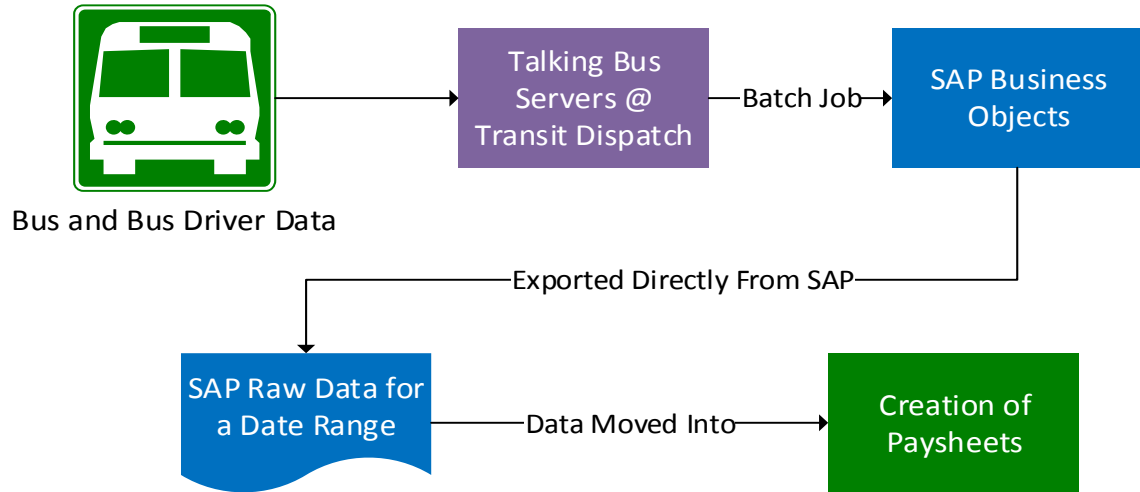
Supplement Specifications

While our project seems somewhat simple in nature, we are anticipating a few difficulties when it comes to data moving to and from the other outside systems. Our biggest problem was with SAP Business objects. Our first intention was to build the reporting needs for payment directly into SAP, but we quickly discovered the following requirements from the Payroll Manager:

1) The billing periods are wildly irregular. Sometimes a billing period goes two literal calendar weeks, while other times it follows the end of the month. The system should be flexible enough to handle any payment term.

2) Not all routes are compensated equally. For example, late night routes pay extra money to a driver over their base pay per hour. This can also even fluctuate to additional payment during holidays for the same routes. The system should allow the Payroll Manager to modify these amounts as needed.

3) Not all drivers are compensated equally. Drivers who have been working for ECU Transit for multiple years will be making more than Bus Drivers who have just started. This system will need to be able to differentiate between base pay amounts for the different employees.

Because of the requirements, we realized that SAP might be just a little too rigid in its reporting capabilities to allow for the flexibility and hands-on needs of the user. However, SAP can export the raw data from a premade query, which can then be entered into a more pliable tool.

We also dealt with the issue of ensuring that the data entered into the consoles on the buses would make it to the SAP Export. However, after analyzing the relationship between SAP and the Talking Bus System, it appears as if SAP retrieves all of the information from the Talking Bus in an overnight batch job. While we are still confirming the frequency of this batch job, we are expecting that the system will not be able to run on live data. The data will most likely be available a day after it occurs (T+1). However, we do not anticipate this as being a problem, as payroll is calculated on a Monday for previous weeks.

Since the flow of information through this system can be potentially confusing, we have provided a flowchart below to explain the flow of information visually. The purple rectangle represents when the information is housed by the Talking Bus System, and the blue shapes indicate items that are directly a part of SAP

Bus and Bus Driver Data

Talking Bus Servers @ Transit Dispatch

Batch Job

SAP Business Objects

Exported Directly From SAP

SAP Raw Data for a Date Range

Data Moved Into

Creation of Paysheets

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Design Package

Executive Summary

This is the design package for the ECU Transit System, which will focus on the defined system requirements and will show how the system will achieve what it needs to do. This document will include design diagrams such as a process model (DFD), a data model (ERD), the proposed architecture, the hardware and software specifications, and the user interface elements. An updated vision document with an updated context diagram will also be included. The use case package that was presented previously will be updated with an updated system use case diagram, use case specifications, and other supplementary provisions.

Context Diagram
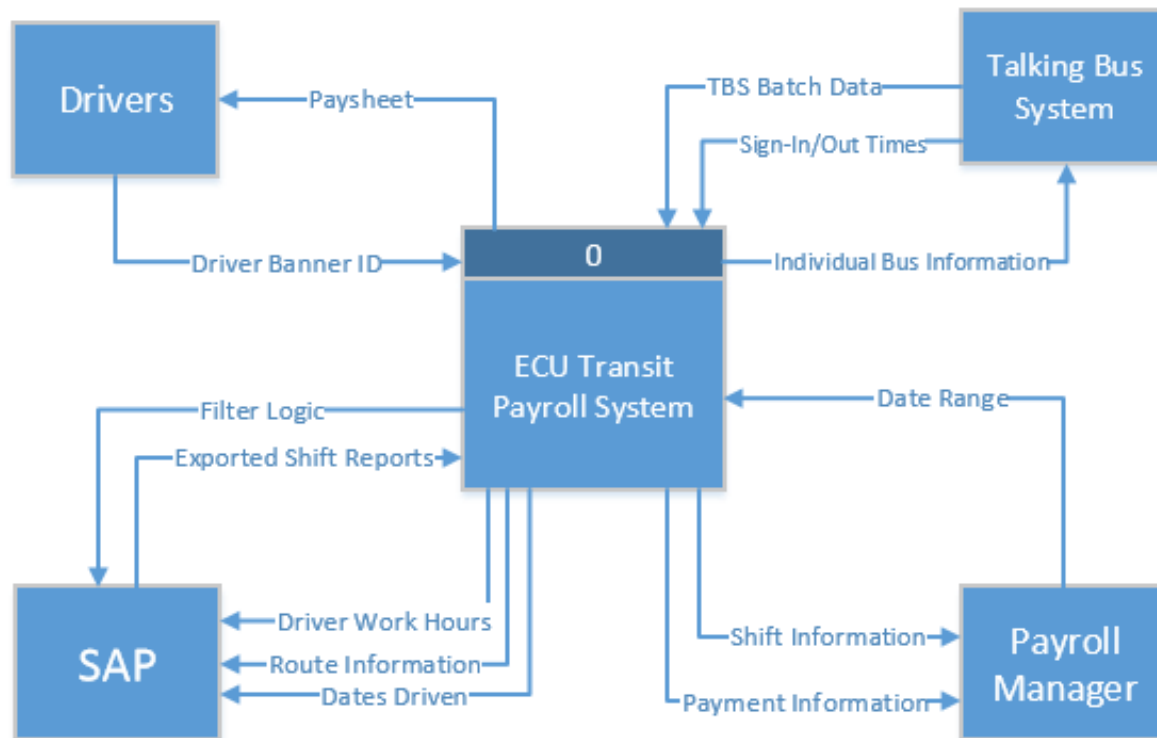
Data Flow Diagram

Level 0 Data Flow Diagram

Our first data flow diagram is the Level 0 DFD. This is similar to the Context Diagram, in that it maps out the general flow of the system, but this provides much more detail on where this information is going. Take notice: "Process 2 – Batch Job" is out of scope for this project. This is because the batch job is an inherent function which SAP performs on its own. We only put it on this diagram to model the flow of information from the Talking Bus System to SAP.
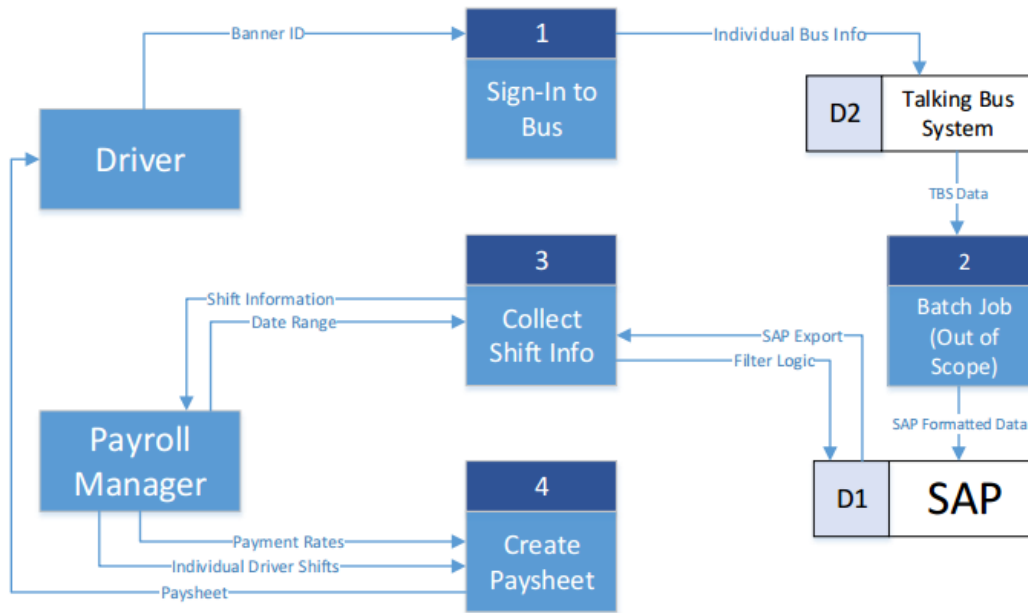
Process 1 Level 1 Data Flow Diagram

In Process 1, we cover how the user will sign-in to the bus. This is important, as this initial information drives the rest of the system. The Driver will perform two tasks: sign-in and sign-out. The system then packages all of this information and sends it to the Talking Bus System
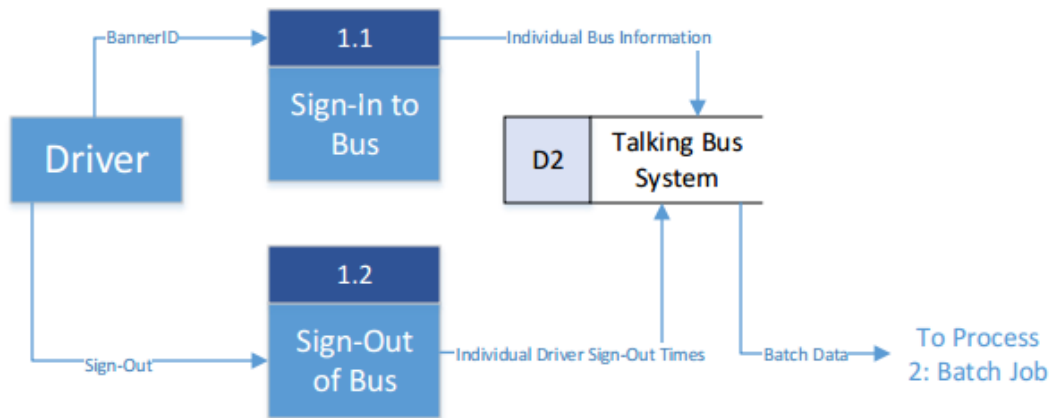
Process 2 Data Flow Diagram

Once again, this is out of scope because the batch job is an already established procedure. This does not need to be covered since SAP handles this procedure. This is shown on the Level 0 Data Flow Diagram to show the connection between Talking Bus System and SAP.

Process 3 Level 1 Data Flow Diagram

Process 3 shows how the flow of information works between the user and the SAP Report. The important thing to note is that SAP will provide a report to the user, but the user must manually export the data and continue on to Process 4.
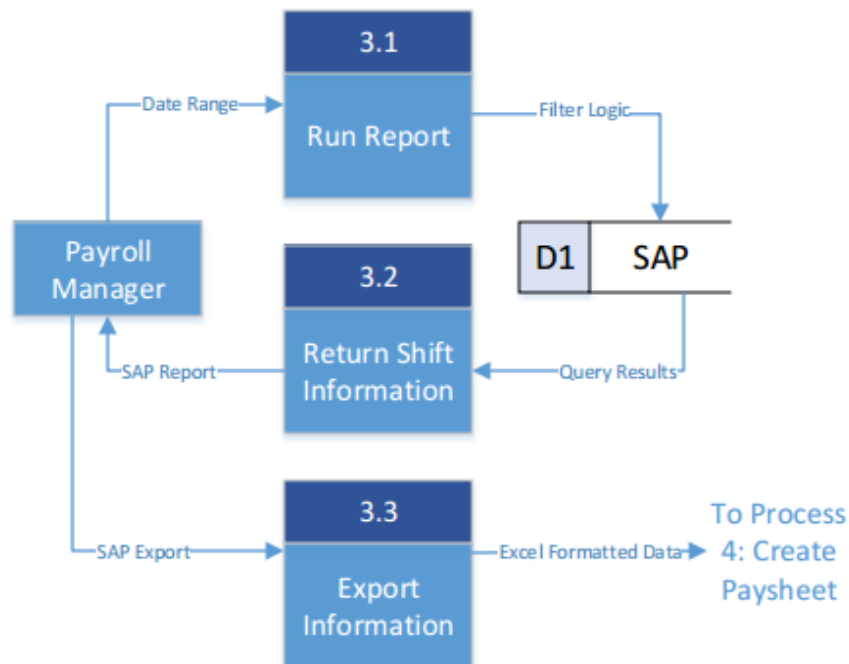
Process 4 Level 1 Data Flow Diagram

Process 4 takes the Raw Export from SAP and combines it with user provided information to create a Paysheet that will be returned to the Driver. Process 4.2 is broken down further below to specify exactly what information is entered by the user. The user is also responsible for moving the information retrieved from SAP into the system.
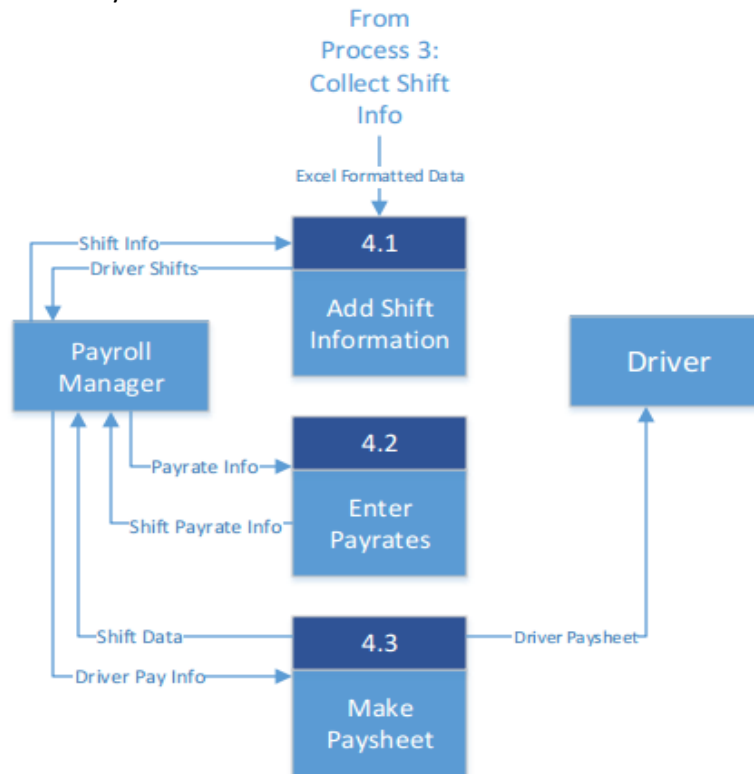
Process 4 Level 2 Data Flow Diagram

This level two diagram shows the breakdown of information that is entered by the Payroll Manager. All the data can be classified into one of two categories: Base Pay for individual drivers and Special Rates. These rates could be changed from time-to-time, so allowing the user to make these changes regularly provides the most business value.
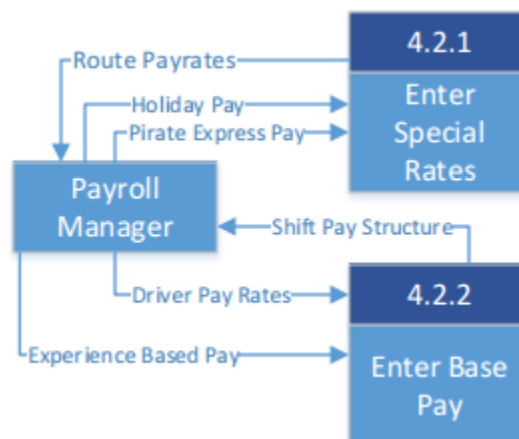
Entity Relationship Diagram

For the purpose of this project, an ERD does not explain the hierarchy of data very well. It was a requirement for this deliverable, so we attempted to create this diagram as accurately as possible. However, since there is no database being created, it is hard to map the data into exact tables. Think of this diagram as more of a relationship of data for calculation purposes instead of querying purposes.
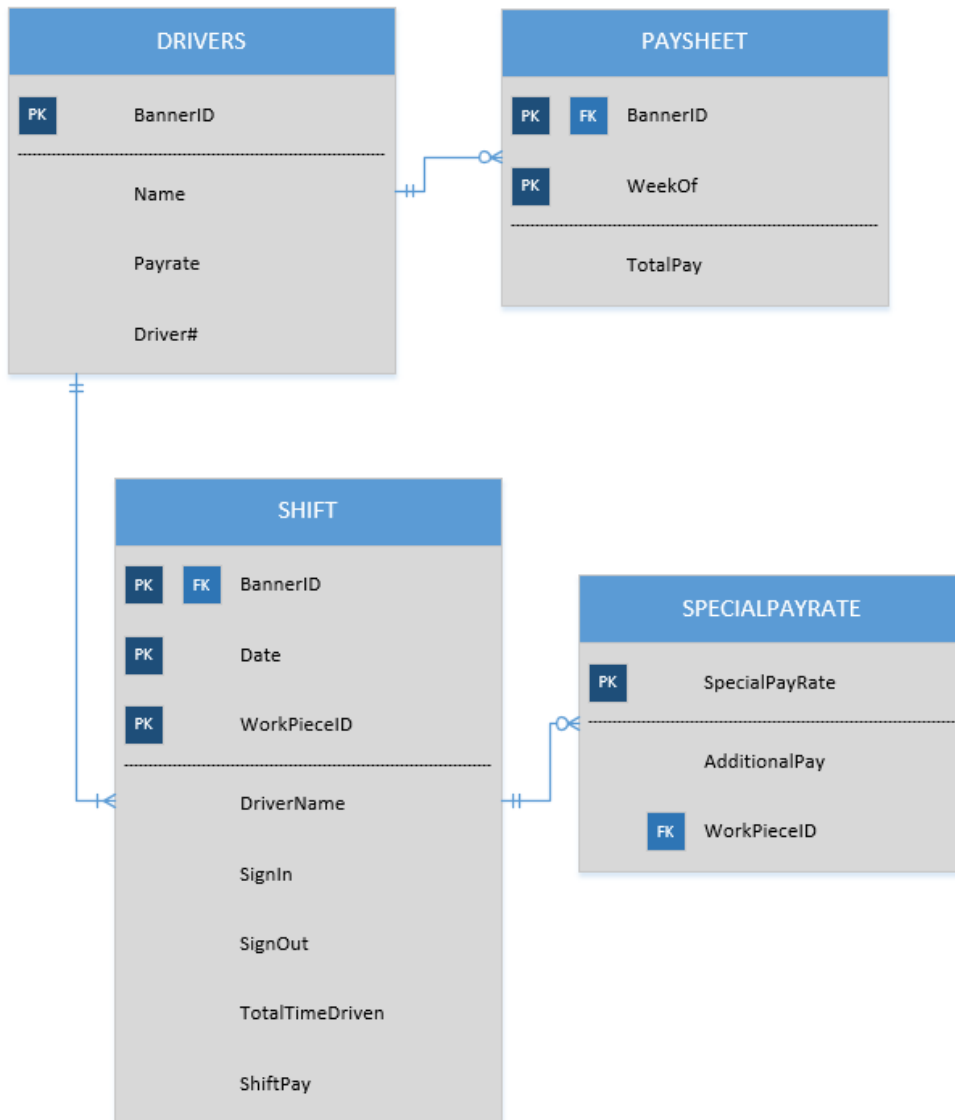
Mockup Forms and Reports

We created mockup reports based on three ends of our system. First, we made a mockup model for what data should come out of SAP. This can serve as a model for our contact that manages the SAP system for ECU Transit. Second, we created a few mockup tables/forms that can model what information the Payroll Manager will have to maintain within the system. Lastly, we created a mockup report to model what the final Time Sheet or will look like. We called this the Semi-Monthly Time Sheet, which is what Transit currently calls it. This is the final document that will be returned to the Driver.

Mockup Report from SAP

In addressing our difficulty with meeting with our contact at Transit that manages the SAP System, we have identified the fields that would need to be provided for our system to be successful. We have confirmed that all of the fields in this Mockup Report currently exist in the Talking Bus System, and in SAP. There are a few other requirements for this report that would need to be addressed:

- Historical Data Availability: Data in this report would need to be populated for two weeks prior to a launch of the system. This would ensure that a full Payroll Cycle could occur when the system went live.
- Data Retention: This report would only need to retain data for about two months. Other processes could be used to determine Payroll disputes that go back further than this time. If long-term data retention would not impact the performance of SAP, then the Transit Management would need to be consulted for a better data retention timeline.
- Time Driven Total: This is a calculated field that determines the amount of hours that were driven in a shift.
- Report Permissions: The Payroll Manager would need access to this report in SAP.
- Export Capabilities: This report would need to be exportable in a .CSV format or other MS Excel friendly format.

BannerID	Driver Name	Workpiece ID	Date	Sign in	Sign Out	Time Driven Total
B00522482	Caroline Rankin	50512	3/8/2014	6:30	12:30	6:00
B00522482	Caroline Rankin	40215	3/1/2014	17:00	22:00	5:00
B00522482	Caroline Rankin	40111	3/7/2014	15:00	18:00	3:00
B00522482	Caroline Rankin	50522	3/8/2014	16:00	19:30	3:30
B00519003	Madison Gardner	50512	3/9/2014	9:00	13:00	4:00
B00522482	Caroline Rankin	90112	3/1/2014	23:00	3:00	4:00

Mockup Tables/Forms for User Maintained Information

The following mockup tables/forms model the pieces of information that the Payroll Manager will have to manually maintain. This flexibility allows the Payroll Manager to make changes to Pay Rates that are not necessarily stored in SAP. It also allows the Payroll Manager to easily add or remove Drivers from the Payroll system.

First, we have the Drivers Table. This contains the following pieces of information:

- Driver#: An identifier that can be reused for different Drivers between semesters.
- Name: The Driver's name associated with the Driver#
- Payrate: The Pay Rate of the Individual Driver. This number differs between Drivers based on experience.
- BannerID: The Driver's BannerID, which links the Driver to the TBS/SAP data.

Driver #	Name	Payrate	BannerID
155	Caroline Rankin	$9.25	B00522482
165	Madison Gardner	$10.00	B00519003
175	Walker Stanley	$8.50	B00123456
185	Rudolfo Castillo	$9.00	B00987654

Second, we created a place where the Payroll Manager could modify the rates that are paid in addition to base pay for special routes. The best (and only) example of this is the Pirate Express routes which take students downtown on weekends. These routes pay an extra $6.00 an hour.

Special Route	Additional Pay Rate
Pirate Express Additional	$6.00

Lastly, we made a spot to modify the times of day that are considered "Late Night Driving Hour." Drivers who drive routes at these hours are paid an additional amount over regular routes. However, there is not a specific route that this applies to; rather it depends on the time of day being driven. Currently, these hours are from 11:30 PM to 5:30 AM, but these hours could change in the future.

Late Night Hours	Time
Begins	23:00
Ends	5:30

Mockup Report for the Paysheets/Semi-Monthly Time Sheet

This is the aforementioned Semi-Monthly Time Sheet (referred to on DFD's as Paysheet). This document is the final stop for all of the data that is processed and collected in this system. The filled out sheet is then returned to Drivers for Approval. The first image is a scanned copy of the original document and the second is a mockup that we corrected to model the flow of data. Notice that the data in the Mockup Report from SAP matches the model report for Caroline Rankin provided below.

Original Document (Currently in Use)

SEMI-MONTHLY TIME SHEET

Driver #: 99
Name: Master, Sheet
Banner ID: B99999999

Department: ECU TRANSIT

Student College Work Study:
Student Self Help: X
Other (Specify):

Routes / Miscellaneous

Week	Type	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
12/04/09	Regular								0.00
	Late								0.00
	PX								0.00
12/11/09	Regular								0.00
	Late								0.00
	PX								0.00
12/18/09	Regular								0.00
	Late								0.00
	PX								0.00
12/25/09	Regular								0.00
	Late								0.00
	PX								0.00
01/01/10	Regular								0.00
	Late								0.00
	PX								0.00

							Routes & Misc:
Regular:	0.00	hr(s) @	$ 10.50	per hr =	$ -		
Late (23:00 - 05:30):	0.00	hr(s) @	$ 13.50	per hr =	$ -	$	-
Pirate Express:	0.00	hr(s) @	$ 16.50	per hr =	$ -		

Proposed Mockup based on Original

SEMI-MONTHLY TIME SHEET

Department: ECU TRANSIT
Driver Number: 155
Driver Name: Caroline Rankin
Banner ID: B00522482

Routes/Miscellaneous

Week	Type	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
2/16/2014	Regular								0.00
	Late								0.00
	PX								0.00
2/23/2014	Regular							5	5.00
	Late								0.00
	PX							4	4.00
3/2/2014	Regular						3	9.5	12.50
	Late								0.00
	PX								0.00
3/9/2014	Regular								0.00
	Late								0.00
	PX								0.00

						Routes/Miscellaneous:	
Regular:	17.50	hr(s) @	$ 9.00	per hr =	$ 157.50		
Late Night: (23:00 - 5:30)	0.00	hr(s) @	$ -	per hr =	$ -	$	217.50
Pirate Express:	4.00	hr(s) @	$15.00	per hr =	$ 60.00		

Input Process Output Chart

Prior to creating our IPO Chart, we did document analysis to discover what pieces of information were needed in the final product. We did this by analyzing the Semi-Monthly Time Sheet (pictured above). Below are the pieces of information that we identified as essential in order to create this report.

SEMI-MONTHLY TIME SHEET

After analyzing this document, we reverse engineered the data needed through a traceability matrix in order to ensure that we could locate every piece of data from our sources.

Data	Source	Reason/Details
DriverNumber	Payroll Manager	DriverNumber can be resused for multiple drivers over time. This needs to be maintained by the user
DriverName	SAP	
BannerID	SAP	
WeekOf	Calculated	Using the system date determine the week of by using the last Sunday. Display the 4 previous week of's not including the current week of
RouteType	Calculated	Lookup Table with routenumbers from Workpiece ID
RouteTimes	Calculated	
RouteTypeTotalHours	Calculated	Determine the routetypetotalhours by taking the sum of hours for each route type
LateNightHours	Payroll Manager	LateNightHours could change in the future, and we need to allow the user to modify that
PayRate	Payroll Manager	
RouteTypePay	Calculated	using the payrate field multiply each routetype total hours field by its corresponding routetype payrate
TotalPay	Calculated	take the sum of the routetype pay fields

We knew that a few fields were available in SAP, and that a few were needed from the Payroll Manager. For all the other fields, we created an IPO Chart in order to identify how we could calculate the desired information. Below is the IPO Chart along with pseudo code that we determined would be necessary to calculate the desired fields.

Input	Process	Output
DriverName	SAP Export	DriverName
DriverBannerID	SAP Export	BannerID
WeekOf	Pseudocode 1	WeekOf
WorkpieceID	Pseudocode 2	RouteType
Sign-In/Sign-Out	Pseudocode 2	RouteType
WorkpieceID	Pseudocode 3	RouteTimes
RouteTimes	Pseudocode 4	RouteTypeTotalHours
RouteTypeTotalHour	Pseudocode 5	RouteTypePay
RouteTypePay	Pseudocode 6	TotalPay

Pseudocode ID	Pseudocode
1	Using the System Date determine [WeekOf] by using the most recent Sunday. Display the 4 previous Sundays as the start of the four weeks. Do not include the current week in [WeekOf]
2	Using the first three Numbers of the WorkpieceID, we can determine the route type as to whether it is a regular route, or a Pirate Express route. All 900 routes are Pirate Express Routes and are paid higher. If a route is not 900 series, it can be categorized as Regular or Late Night. If a route is driven within a certain time frame, then it is considered late night.
3	Using the last number of the WorkpieceID, we can discern what day of the week the bus is being driven at. This allows us to split up hours by day. We also can categorize the routes by their [RouteType], Regular, Late, Express. This is determined by the WorkpieceID in the same process mentioned in Pseudocode 2.
4	SUM the [RouteTimes]
5	MULTIPLY the [RouteTypeTotalHours] by its respective [PayRate]
6	SUM the [RouteTypePay] for Regular Routes, Late Routes, and Pirate Express Routes

Hardware and Software Specifications

<u>Hardware Specifications</u>

You need a computer and the hardware in the bus for the system to work properly. You need ongoing access to the Talking Bus System.

<u>Software Specifications</u>

Microsoft Excel because that is what ECU Transit knows how to use. This is the program they are comfortable with and it is free for them since they are tied with East Carolina University.

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Structured Walkthrough Package

Program Documentation

List of Programs Created

Even though we did not really create any "programs" in our project, we did create back end code for our excel sheet. This exists in a few major sub-procedures, which sort out the data and place it in the respective pay sheets. All this backend code, is done in Microsoft's Visual Basic for Applications. All of the programming on the backend of SAP is out of scope, but the creation of the report is not out of scope. Therefore, there is a small amount of programming involved in the project for SAP.

Input Process Output Chart

Prior to creating our IPO Chart, we did document analysis to discover what pieces of information were needed in the final product. We did this by analyzing the Semi-Monthly Time Sheet (pictured above). Below are the pieces of information that we identified as essential in order to create this report.

After analyzing this document, we reverse engineered the data needed through a traceability matrix in order to ensure that we could locate every piece of data from our sources.

Data	Source	Reason/Details
DriverNumber	Payroll Manager	DriverNumber can be resued for multiple drivers over time. This needs to be maintained by the user
DriverName	SAP	
BannerID	SAP	
WeekOf	Calculated	Using the system date determine the week of by using the last Sunday. Display the 4 previous week of's not including the current week of
RouteType	Calculated	Lookup Table with routenumbers from Workpiece ID
RouteTimes	Calculated	
RouteTypeTotalHours	Calculated	Determine the routetypetotalhours by taking the sum of hours for each route type
LateNightHours	Payroll Manager	LateNightHours could change in the future, and we need to allow the user to modify that
PayRate	Payroll Manager	
RouteTypePay	Calculated	using the payrate field multiply each routetype total hours field by its corresponding routetype payrate
TotalPay	Calculated	take the sum of the routetype pay fields

We knew that a few fields were available in SAP, and that a few were needed from the Payroll Manager. For all the other fields, we created an IPO Chart in order to identify how we could calculate the desired information. Below is the IPO Chart along with pseudo code that we determined would be necessary to calculate the desired fields.

Input	Process	Output
DriverName	SAP Export	DriverName
DriverBannerID	SAP Export	BannerID
WeekOf	Pseudocode 1	WeekOf
WorkpieceID	Pseudocode 2	RouteType
Sign-In/Sign-Out	Pseudocode 2	RouteType
WorkpieceID	Pseudocode 3	RouteTimes
RouteTimes	Pseudocode 4	RouteTypeTotalHours
RouteTypeTotalHour	Pseudocode 5	RouteTypePay
RouteTypePay	Pseudocode 6	TotalPay

Pseudocode ID	Pseudocode
1	Using the System Date determine [WeekOf] by using the most recent Sunday. Display the 4 previous Sundays as the start of the four weeks. Do not include the current week in [WeekOf]
2	Using the first three Numbers of the WorkpieceID, we can determine the route type as to whether it is a regular route, or a Pirate Express route. All 900 routes are Pirate Express Routes and are paid higher. If a route is not 900 series, it can be categorized as Regular or Late Night. If a route is driven within a certain time frame, then it is considered late night.
3	Using the last number of the WorkpieceID, we can discern what day of the week the bus is being driven at. This allows us to split up hours by day. We also can categorize the routes by their [RouteType], Regular, Late, Express. This is determined by the WorkpieceID in the same process mentioned in Pseudocode 2.
4	SUM the [RouteTimes]
5	MULTIPLY the [RouteTypeTotalHours] by its respective [PayRate]
6	SUM the [RouteTypePay] for Regular Routes, Late Routes, and Pirate Express Routes

Program Code

```vba
Sub BannerIsolater()

'This macro isolates the individual Banner IDs in the SAP Export.
'It will then transform them into an array of driver numbers.
'Lastly the macro will run the Time Sheet Creator for each driver number in the array
    Dim BannerBool As Boolean
    BannerBool = True
    i = 3
    Dim BannerTempArray() As Variant
    ReDim Preserve BannerTempArray(1)
    Dim CellValue As Variant
    Dim DriverNumberTempArray() As Variant
    ReDim Preserve DriverNumberTempArray(1)
    Dim DNTACounter As Integer
    Dim BTACounter As Integer
    DNTACounter = 0
    BTACounter = 0
    Do While BannerBool = True
        Worksheets("SAP Export").Activate
        CellValue = Range("B" & i).Value
        If CellValue = vbNullString Then
            BannerBool = False
        ElseIf IsError(Application.Match(CellValue, BannerTempArray, 0)) Then
            ReDim Preserve BannerTempArray(BTACounter)
            BannerTempArray(BTACounter) = CellValue
            BTACounter = BTACounter + 1
            i = i + 1
        Else
            i = i + 1
        End If
    Loop

'Pull Driver Numbers from the Drivers Sheet
    Worksheets("Drivers").Activate
    For Each BannerID In BannerTempArray
        For Counter = 1 To 700
            x = Range("D" & (Counter + 5)).Value
            If x = BannerID Then
                ReDim Preserve DriverNumberTempArray(DNTACounter)
                DriverNumberTempArray(DNTACounter) = Range("A" & (Counter + 5)).Value
                DNTACounter = DNTACounter + 1
                Exit For
            End If
            If Counter = 700 Then
                Msg = MsgBox("The driver with the BannerID " & x & " is not listed in the Driver Records. Please
```
check the Driver table and make sure the information is accurate.", , "Missing Driver Number")

```vba
            Exit For
            End If
        Next Counter
    Next

    'Create the Timesheets!
    Dim TSIndex As Integer
    TSIndex = 0

    For Each Timesheet In BannerTempArray
        Sheets("Timesheet").Activate
        ActiveWorkbook.ActiveSheet.Copy _
         After:=ActiveWorkbook.Sheets(Sheets.Count)
        ActiveSheet.Name = DriverNumberTempArray(TSIndex)
        Range("C3").Select
        ActiveCell.FormulaR1C1 = DriverNumberTempArray(TSIndex)
        Call DriverHoursCompiled(BannerTempArray(TSIndex), DriverNumberTempArray(TSIndex))
        TSIndex = TSIndex + 1
    Next

End Sub
```

```vba
Sub DriverHoursCompiled(DriverBannerID, DriverNumber)
    Dim i As Integer
    i = 3
    WkSpci = 1
    Dim LoopTest As Boolean
    LoopTest = True
    Dim WS As Worksheet
    Dim PirExWS As Worksheet

    'Populate a New Sheet for Formatting
    Set WS = Sheets.Add
    Do While LoopTest = True
        Worksheets("SAP Export").Activate
        Range("B" & i).Select
        If ActiveCell.Value = vbNullString Then
            LoopTest = False
            Exit Do
        ElseIf ActiveCell.Value = DriverBannerID Then
            Range(Cells(i, 2), Cells(i, 9)).Copy
            WS.Activate
            Range("B" & WkSpci).Select
            ActiveSheet.Paste
            i = i + 1
            WkSpci = WkSpci + 1
        ElseIf ActiveCell.Value <> DriverBannerID Then
            i = i + 1
```

```vba
        End If
    Loop

    'Reinstate the Boolean Looper
    LoopTest = True

    'At this point WkSpci will equal the number of rows in the new worksheet
    'This Block of Code Separates out the Pirate Express hours from the Non-Pirate Express Hours
    Dim index As Integer
    Dim PirateExpressIndex As Integer
    Set PirExWS = Sheets.Add
    PirateExpressIndex = 1
    For index = 1 To WkSpci
        WS.Activate
        Range("D" & index).Select
        RouteFirstNumber = Left(Range("D" & index).Value, 1)
        If RouteFirstNumber = "9" Then
            Range(Cells(index, 2), Cells(index, 9)).Cut
            PirExWS.Activate
            Range("B" & PirateExpressIndex).Select
            ActiveSheet.Paste
            WS.Activate
            Range(Cells(index, 2), Cells(index, 9)).Delete
            PirateExpressIndex = PirateExpressIndex + 1
        End If
    Next index
    'Correct the indices
    i = i - 2

    Application.CutCopyMode = False
    'Test Strings
    Range("E17").Select
    ActiveCell.FormulaR1C1 = index
    Range("E18").Select
    ActiveCell.FormulaR1C1 = PirateExpressIndex

    'Call the WeekdaySeparator Sub
    Call WeekSeparator(WS, i, False, DriverNumber)
    Call WeekSeparator(PirExWS, PirateExpressIndex, True, DriverNumber)

End Sub

Sub WeekSeparator(WS As Worksheet, index, PirateExpress As Boolean, TimeSheetNo)
    Dim NewWS As Worksheet
    Dim DateArray(1 To 5) As Date
    Dim WeekIndiciesArray(1 To 5) As Integer

    'Sets the Values for the Week Indicies
```

```vba
WeekIndiciesArray(1) = 2
WeekIndiciesArray(2) = 2
WeekIndiciesArray(3) = 2
WeekIndiciesArray(4) = 2
WeekIndiciesArray(5) = 2

'Initiating the ColumnArray that will be called several times
Dim ColumnArray(1 To 7) As String
ColumnArray(1) = "A"
ColumnArray(2) = "J"
ColumnArray(3) = "S"
ColumnArray(4) = "AB"
ColumnArray(5) = "AK"
ColumnArray(6) = "AT"
ColumnArray(7) = "BC"

'Collect the Dates from the Date Sheet
Sheets("Dates").Select
DateArray(1) = Range("B3").Value
DateArray(2) = Range("B4").Value
DateArray(3) = Range("B5").Value
DateArray(4) = Range("B6").Value
DateArray(5) = Range("B7").Value

'Create the New Placeholder Sheet for the Data
Set NewWS = Sheets.Add
NewWS.Activate
Range("A1").Select
ActiveCell.FormulaR1C1 = "Week 1"
Range("J1").Select
ActiveCell.FormulaR1C1 = "Week 2"
Range("S1").Select
ActiveCell.FormulaR1C1 = "Week 3"
Range("AB1").Select
ActiveCell.FormulaR1C1 = "Week 4"
Range("AK1").Select
ActiveCell.FormulaR1C1 = "Week 5"

'Take Data from Passed WS and separate by week
Dim MsgBoxChecker As Boolean
Dim i As Integer
MsgBoxChecker = True
For i = 1 To index
    WS.Activate
    Range("E" & i).Select
    Select Case ActiveCell.Value
        Case vbNullString
```

```vba
            Exit For
        Case Is < DateArray(1)
            If MsgBoxChecker = True Then
                MBox = MsgBox("Your Results have dates that are not currently on the Time Sheet. Modify
the dates to ensure that results will show on the time sheet. (Results will not show on this time sheet.)",
vbOKOnly, "Out of Range")
                MsgBoxChecker = False
            End If
        Case DateArray(1) To (DateArray(1) + 7)
            Range(Cells(i, 2), Cells(i, 9)).Copy
            NewWS.Activate
            Range("A" & WeekIndiciesArray(1)).Select
            ActiveSheet.Paste
            WeekIndiciesArray(1) = WeekIndiciesArray(1) + 1
        Case DateArray(2) To (DateArray(2) + 7)
            Range(Cells(i, 2), Cells(i, 9)).Copy
            NewWS.Activate
            Range("J" & WeekIndiciesArray(2)).Select
            ActiveSheet.Paste
            WeekIndiciesArray(2) = WeekIndiciesArray(2) + 1
        Case DateArray(3) To (DateArray(3) + 7)
            Range(Cells(i, 2), Cells(i, 9)).Copy
            NewWS.Activate
            Range("S" & WeekIndiciesArray(3)).Select
            ActiveSheet.Paste
            WeekIndiciesArray(3) = WeekIndiciesArray(3) + 1
        Case DateArray(4) To (DateArray(4) + 7)
            Range(Cells(i, 2), Cells(i, 9)).Copy
            NewWS.Activate
            Range("AB" & WeekIndiciesArray(4)).Select
            ActiveSheet.Paste
            WeekIndiciesArray(4) = WeekIndiciesArray(4) + 1
        Case DateArray(5) To (DateArray(5) + 7)
            Range(Cells(i, 2), Cells(i, 9)).Copy
            NewWS.Activate
            Range("AK" & WeekIndiciesArray(5)).Select
            ActiveSheet.Paste
            WeekIndiciesArray(5) = WeekIndiciesArray(5) + 1
        End Select
    Next i
    Application.CutCopyMode = False
    'For Loop to Correct the indicies to fit the next script
    Dim VariantArray As Variant
    For x = 1 To 5
        WeekIndiciesArray(x) = WeekIndiciesArray(x) - 2

    Next x
```

```vba
'After the Shifts are separated into weeks, they can then be separated into days

'Arrays for Locating spot on a TimeSheet
'TSRI stands for TimeSheetRowIndex
Dim TSRI(1 To 5) As Integer
TSRI(1) = "11"
TSRI(2) = "14"
TSRI(3) = "17"
TSRI(4) = "20"
TSRI(5) = "23"

'Change the location if PirateExpress Routes
If PirateExpress = True Then
    For PER = 1 To 5
        TSRI(PER) = TSRI(PER) + 2
    Next PER
End If

'TSCI stands for TimeSheetColumnIndex
Dim TSCI(1 To 7) As String
TSCI(1) = "D"
TSCI(2) = "E"
TSCI(3) = "F"
TSCI(4) = "G"
TSCI(5) = "H"
TSCI(6) = "I"
TSCI(7) = "C"

For Weeks = 1 To 5

'Create the Worksheet to hold this data
    Dim WS3 As Worksheet
    Set WS3 = Sheets.Add
    WS3.Activate
    Range("A1").Select
    ActiveCell.FormulaR1C1 = "Monday"
    Range("J1").Select
    ActiveCell.FormulaR1C1 = "Tuesday"
    Range("S1").Select
    ActiveCell.FormulaR1C1 = "Wednesday"
    Range("AB1").Select
    ActiveCell.FormulaR1C1 = "Thursday"
    Range("AK1").Select
    ActiveCell.FormulaR1C1 = "Friday"
    Range("AT1").Select
    ActiveCell.FormulaR1C1 = "Saturday"
```

```vba
    Range("BC1").Select
    ActiveCell.FormulaR1C1 = "Sunday"


  'For Loop that crawls data in each week
    Dim Days As Integer
    For Days = 1 To 7
       Dim ShiftCounter As Integer
       ShiftCounter = 2
       TimeSheetValue = 0
       For Shift = 1 To WeekIndiciesArray(Weeks)
          NewWS.Activate
          Range(ColumnArray(Weeks) & (Shift + 1)).Offset(0, 2).Select
          'WDN stands for week day number (from workpieceID)
          Dim WDN As Integer
          WDN = Right(ActiveCell.Value, 1)
          If WDN = Days Then
             Range(ColumnArray(Weeks) & (Shift + 1)).Select
             Range(ActiveCell, ActiveCell.Offset(0, 7)).Copy
             WS3.Activate
             Range(ColumnArray(Days) & ShiftCounter).Select
             ActiveSheet.Paste
             Shifthours = Range(ColumnArray(Days) & (ShiftCounter)).Offset(0, 7)
             ShiftCounter = ShiftCounter + 1
             TimeSheetValue = TimeSheetValue + Shifthours
          End If
       Next Shift

       Sheets(CStr(TimeSheetNo)).Activate
       Range(TSCI(Days) & TSRI(Weeks)).Value = TimeSheetValue


    Next Days


  WS3.Activate
  WS3.Select
  Application.DisplayAlerts = False
  ActiveSheet.Delete
  Application.DisplayAlerts = True
  Next Weeks
  Application.DisplayAlerts = False
  WS.Delete
  NewWS.Delete
  Application.DisplayAlerts = True
  Sheets(CStr(TimeSheetNo)).Select
End Sub
Sub SingleTimeSheet()

Dim ws1 As Worksheet
```

```vba
' Setting variable for Banner ID
    x = InputBox("Enter Banner ID")
' Validation for Banner ID for maximum of 9 characters
    If Len(x) > 9 Then
        MsgBox "Please Enter Valid Banner ID"
        Exit Sub
    End If
' Setting variable for Driver Number
    x2 = InputBox("Enter Driver #")
' Validation for Driver Name to determine if numeric
    If IsNumeric(x2) = False Then
        MsgBox "Please Enter Valid Driver #"
        Exit Sub
    End If
' Copying and pasting worksheet
Set ws1 = ThisWorkbook.Worksheets("Timesheet")
ws1.Copy ThisWorkbook.Sheets(Sheets.Count)
ActiveSheet.Name = x2
' Setting driver ID value to entered data
ActiveSheet.Range("b3") = x2

Call DriverHoursCompiled(x, x2)

End Sub
```

```vba
Sub LastSunday()
' LastSunday Macro
' This Macro Sets the Dates to The Last Sunday based on the Computer's System Date
    Range("B7").Select
    ActiveCell.FormulaR1C1 = "=TODAY()-WEEKDAY(TODAY())+1"
    Range("B8").Select
End Sub
```

Challenges, Problems and Discoveries

We faced one very large problem from the start concerning our design of this system: we didn't really know VBA coding syntax. Sure we had previously learned VB, but VBA for excel is very different even to the point of having different fundamental syntax. This made things difficult for us to code even after we worked out our logic. However, it was easy enough to pick up and learn as we went along.

Another challenge that we faced was the advanced logical structures that had to be created in order to create a working algorithm that would sort out the data. We had nested for loops, while loops and if statements all compiled together.

One of the interesting things that we discovered was the benefit of modeling an algorithm prior to creating it. First, we sat down in front of a huge white board and made a massive graphical model of our algorithm. Then we took pictures of it, and wrote code based on the models in the pictures. The process seemed to work very well.

Test Plans
Data Used for Testing

Driver Banner ID	Driver Name	Workpiece ID	Date	Sign in	Sign Out	Time Driven Total	Decimal Hours	Late Night Hours
B00522482	Caroline Rankin	40111	3/17/2014	15:00	18:30	3:30	3.5	
B00519003	Madison Gardner	30611	3/17/2014	15:00	18:30	3:30	3.5	
B00522482	Caroline Rankin	30311	3/17/2014	15:00	18:00	3:00	3	
B00463928	Rodolfo Castillo	55511	3/17/2014	15:00	18:30	3:30	3.5	
B00575172	Walker Stanley	55411	3/17/2014	15:00	19:30	4:30	4.5	
B00522482	Caroline Rankin	30212	3/18/2014	6:30	12:30	6:00	6	
B00522482	Caroline Rankin	55222	3/18/2014	16:00	19:30	3:30	3.5	
B00463928	Rodolfo Castillo	50512	3/18/2014	6:30	12:30	6:00	6	
B00575172	Walker Stanley	50422	3/18/2014	16:00	19:30	3:30	3.5	
B00575172	Walker Stanley	50612	3/18/2014	6:30	12:30	6:00	6	
B00522482	Caroline Rankin	55112	3/18/2014	16:00	19:30	3:30	3.5	
B00463928	Rodolfo Castillo	50722	3/18/2014	6:30	12:30	6:00	6	
B00519003	Madison Gardner	55322	3/18/2014	16:00	19:30	3:30	3.5	
B00575172	Walker Stanley	80512	3/18/2014	18:30	23:00	4:30	4.5	
B00519003	Madison Gardner	50213	3/19/2014	9:00	13:00	4:00	4	
B00575172	Walker Stanley	50313	3/19/2014	9:00	13:00	4:00	4	
B00522482	Caroline Rankin	30413	3/19/2014	9:00	13:00	4:00	4	
B00575172	Walker Stanley	30513	3/19/2014	9:00	13:00	4:00	4	
B00522482	Caroline Rankin	80214	3/20/2014	18:30	23:00	4:30	4.5	
B00463928	Rodolfo Castillo	90114	3/20/2014	22:00	3:30	5:30	5.5	
B00575172	Walker Stanley	90524	3/20/2014	22:15	3:15	5:00	5	
B00519003	Madison Gardner	90314	3/20/2014	22:00	3:30	5:30	5.5	
B00575172	Walker Stanley	90414	3/20/2014	23:00	3:30	4:30	4.5	
B00463928	Rodolfo Castillo	40215	3/21/2014	17:00	23:00	6:00	6	
B00522482	Caroline Rankin	50115	3/21/2014	17:00	18:30	1:30	1.5	
B00463928	Rodolfo Castillo	80615	3/21/2014	18:30	23:00	4:30	4.5	
B00522482	Caroline Rankin	85013	3/19/2014	21:00	0:00	3:00	3	
B00519003	Madison Gardner	50115	3/14/2014	17:00	18:30	1:30	1.5	

Create One Timesheet

Create All Timesheets

In order to create an effective regression testing strategy through iterative development, we needed to have a baseline of data and a sample output to compare our results to. We used a sample of data that would come out of the SAP report to then design our solution around (that sample of data is listed in the table below). This way, we can easily identify our inputs and outputs for a test case, and then compare the results of the code against our baseline data.

Challenges, Problems and Discoveries

We had very little problems with our testing strategy. I think we took the most effective method of testing by establishing the baseline for our test cases long before we even needed to test our code. One of the things that we learned was that bugs can sometimes take a while to make it to the surface. For example, we tested our code against the initial dataset, and there was no issue. However, when we duplicated the data set several times (a dataset of 500 record), the system found an error.

The major challenge that we faced with testing was the actual debugging. In VBA for excel, the debugging tools are a nightmare, and in no way can effectively debug your code. However, this did teach me the effectiveness of debugging strategies in situation or coding languages that do not contain an easy debugger.

ECU.TRANSIT
Training Package

Executive Summary

This document is meant to provide ECU Transit with a training instructions and user manual for their new system we have created. This document contains the following:

- Training Instructions with step-by-step instructions with pictures on how to use the system.
- User Manual this includes a handbook and guidelines with practical instructions. This manual provides technical details on how to use the system.

The training instructions was included to give specific step-by-step instructions on how to use the ECU Transit system. In the training manual we have included screenshots of the ECU Transit Payroll System so the payroll manager can follow the system step-by-step. This system has changed since ECU Transit originally sent us the Excel file therefore it might be difficult for the payroll manager to follow along. This is why it was important we included screenshots or graphs of the actual system in the documents. Also included is the user manual this gives more of an overview of the ECU Transit Payroll System. The user manual will be used more as a handbook or guidelines for the payroll manager. This will give the payroll manager practical instructions on how to use certain parts of the system to generate timesheets. Including training instructions and a user manual gives the payroll manager easier access to understand the ECU Transit Payroll System.

Training Instructions

Step One:

ECU Student Transit Authority
Driver Payroll Data
Base Payroll Data - Modify As Necessary
Driver	**Last**	**First**	**Banner ID**	**Base**	**Flat Rate**	**Probation**	**Trainer**
99	Transit	Transit	B00000000	$ -	$ -		
103							
105							
106							
108							
109							
110	Rankin	Caroline	B00522482	$ 9.25			
111	Gardner	Madison	B00519003	$ 10.50			
112	Stanley	Walker	B00575172	$ 8.50			
113	Castillo	Rodolfo	B00463928	$ 9.00			
114							
115							
116							
117							
118							
119							
120							

First the payroll manager will enter the driver Last Name, First Name, BannerID and Base pay into the correct driver number in the Driver Payroll Data tab of the excel ECU Transit Payroll System.

Step Two:

Payroll Dates		
Period	**Begins**	
Week 1	03/16/14	
Week 2	03/23/14	
Week 3	03/30/14	
Week 4	04/06/14	
Week 5	**04/13/14** <<<	

Most Recent Sunday

Note: enter only the LAST week's beginning date;
this will adjust the dates for ALL time sheets.
You may also click most recent Sunday to get the most recent dates

The payroll manager will click the button labeled "Most Recent Sunday" the blue cell highlighted above will be changed with the newest Sunday of the week.

Step Three:

Driver Banner ID	Driver Name	Workpiece ID	Date	Sign in	Sign Out	Time Driven Total	Decimal Hours	Late Night Hours
B00522482	Caroline Rankin	40111	3/17/2014	15:00	18:30	3:30	3.5	
B00519003	Madison Gardner	30611	3/17/2014	15:00	18:30	3:30	3.5	
B00522482	Caroline Rankin	30311	3/17/2014	15:00	18:00	3:00	3	
B00463928	Rodolfo Castillo	55511	3/17/2014	15:00	18:30	3:30	3.5	
B00575172	Walker Stanley	55411	3/17/2014	15:00	19:30	4:30	4.5	
B00522482	Caroline Rankin	30212	3/18/2014	6:30	12:30	6:00	6	
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B00463928	Rodolfo Castillo	50122	3/18/2014	6:30	12:30	6:00	6	
B00575172	Walker Stanley	50422	3/18/2014	16:00	19:30	3:30	3.5	
B00575172	Walker Stanley	50612	3/18/2014	6:30	12:30	6:00	6	
B00522482	Caroline Rankin	55112	3/18/2014	16:00	19:30	3:30	3.5	
B00463928	Rodolfo Castillo	50722	3/18/2014	6:30	12:30	6:00	6	
B00519003	Madison Gardner	55322	3/18/2014	16:00	19:30	3:30	3.5	
B00575172	Walker Stanley	80512	3/18/2014	18:30	23:00	4:30	4.5	
B00519003	Madison Gardner	50213	3/19/2014	9:00	13:00	4:00	4	
B00575172	Walker Stanley	50313	3/19/2014	9:00	13:00	4:00	4	
B00522482	Caroline Rankin	30413	3/19/2014	9:00	13:00	4:00	4	
B00575172	Walker Stanley	30513	3/19/2014	9:00	13:00	4:00	4	
B00522482	Caroline Rankin	80214	3/20/2014	18:30	23:00	4:30	4.5	
B00463928	Rodolfo Castillo	90114	3/20/2014	22:00	3:30	5:30	5.5	
B00575172	Walker Stanley	90524	3/20/2014	22:15	3:15	5:00	5	
B00519003	Madison Gardner	90314	3/20/2014	22:00	3:30	5:30	5.5	
B00575172	Walker Stanley	90414	3/20/2014	23:00	3:30	4:30	4.5	
B00463928	Rodolfo Castillo	40215	3/21/2014	17:00	23:00	6:00	6	
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B00463928	Rodolfo Castillo	80615	3/21/2014	18:30	23:00	4:30	4.5	
B00522482	Caroline Rankin	85013	3/19/2014	21:00	0:00	3:00	3	
B00519003	Madison Gardner	50115	3/14/2014	17:00	18:30	1:30	1.5	

Create One Timesheet

Create All Timesheets

This will be the passed SAP Export data of the talking bus system. The payroll manager can "Create One Timesheet" using the driver's BannerID and driver number. Mainly the payroll manager will be "Creating All Timesheets" for all drivers, which will create a separate tab for each driver and the information will be filled in automatically.

Step Four:

SEMI-MONTHLY TIME SHEET

| Driver #: | 110 | | | | Department: | ECU TRANSIT | |

Name:	Rankin, Caroline				Student College Work Study:	
					Student Self Help:	X
anner ID:	B00522482				Other (Specify):	

Routes / Miscellaneous

Week	Type	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
03/16/14	Regular	0.00	6.50	13.00	7.00	4.50	1.50	0.00	32.50
	Late								0.00
	PX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03/23/14	Regular	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Late								0.00
	PX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03/30/14	Regular	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Late								0.00
	PX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04/06/14	Regular	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Late								0.00
	PX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04/13/14	Regular	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Late								0.00
	PX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Regular:	32.50	hr(s) @	$ 9.25	per hr =	$ 300.63	**Routes & Misc:**	
Late (23:00 – 05:30):	0.00	hr(s) @	$ 12.25	per hr =	$ –	$	300.63
Pirate Express:	0.00	hr(s) @	$ 15.25	per hr =	$ –		

Charters

Week	Type	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
03/16/14	Regular								0.00
	Late								0.00
03/23/14	Regular								0.00
	Late								0.00
03/30/14	Regular								0.00
	Late								0.00
03/30/14	Regular								0.00
	Late								0.00
04/06/14	Regular								0.00
	Late								0.00
04/13/14	Regular								0.00
	Late								0.00

Regular:	0.00	hr(s) @	$ 10.75	per hr =	$ –	**Charters:**	
Late (00:00 – 05:30):	0.00	hr(s) @	$ 12.25	per hr =	$ –	$	–
Charter Layover:	0.00	night(s) @	$ 75.00	per night =	$ –		

I have examined this semi-monthly time sheet and certify the hours are true & correct.

| EMPLOYEE SIGNATURE | DATE |

I hereby certify this time sheet is a true statement of the hours worked by this
student and the work assigned has been performed in a satisfactory manner.

4/15/2014

| SUPERVISOR SIGNATURE | DATE |

SEMI-MONTHLY TIME SHEET

This will be the document that SAP generates when the "Create One Timesheet" or "Create All Timesheets" is clicked. This will be printed off for each driver to sign and approve so they are paid.

Step Five:

		Routes & Miscellaneous						Charters						Telecommunicators & Assistant Managers						Training						
		Regular		ate (23:00 – 05:3		Pirate Express		Regular		ate (00:00 – 05:3		Overnight		Regular		23:00 – 05:30) /		Pirate Express		tatus Dependen		Flat	Hours	Weeks	Total
#	Name	Hours	Wages	Hours	Wages	Hours	Wages	Hours	Wages	Hours	Wages	Nights	Wages	Hours	Wages	Hours	Wages	Hours	Wages	Hours	Wages	Rate	Paid	Paid	Wages
99	Transit , Transit	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
103	,	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
105	,	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
106	,	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
108	,	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
109	,	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
110	Rankin, Caroline	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
111	Gardner, Madison	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
112	Stanley, Walker	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
113	Castillo, Rodolfo	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
114	,	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
115	,	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!

After the SAP Report is ran and the payroll manager creates the timesheets for all drivers all of the information will be filled in above. It will show hours and wages for regular routes, late night, pirate express, and charters.

Step Six:

ECU Student Transit Authority
Driver Payroll Summary

Bus Division		Regular		Late		Pirate Express		Overnight	
		Hours	Wages	Hours	Wages	Hours	Wages	Nights	Wages
	Routes & Miscellaneous	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!		
	Charters	#REF!	#REF!	#REF!	#REF!			#REF!	#REF!
	Telecomm / Asst Mgr	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!		
	Training	#REF!	#REF!						
	Driver Flat Rate		#REF!						
	Trainee Wages	#REF!	#REF!						
	Trainee Flat Rate		#REF!						
Stipended Wages			#REF!						
	TOTAL:	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!

Hours: #REF! Wages: #REF!

Wage/Hour: #REF!

When the payroll system runs and all driver information is filled into each separate tab, this tab will show a payroll summary of all hours and wages of all drivers as a whole.

User Manual Documentation

Major Functions:

- Create Driver Timesheets
- Create Report Driver Payroll Summary
- Create Report of Summary of Drivers

Architecture:

The ECU Transit Payroll System is a thick client based system. This means we do all the computing on the users computing, we do not send it to a server or any other machine.

Graphical User Interface:

Microsoft Excel

System Name:

East Carolina University Transit Payroll System

General Description:

The ECU Transit Payroll System will be used to generate drivers' timesheets for a certain data set. After the timesheets are generated they can be printed and signed by drivers'.

System Environment:

The ECU Transit Payroll System will reside on two PCs located in ECU Transit Dispatch.

Security

The excel file created for The ECU Transit Payroll System will have a security passcode. This will save any users from deleting formulas and macros. The information technology manager will be provided the password in case any changes need to be made to the document.

System Overview and Summary:

The purpose of The ECU Transit Payroll is to provide the payroll manager with a system that can be used to look up driver's timesheets without manually looking up all driver shifts worked. To complete this system the payroll manager will use the SAP Export provided by The Talking Bus System, currently used. The payroll manager can create one timesheet or multiple timesheets using the SAP Export. This will save the payroll manager time and ECU Transit money by implementing this system.

Using ECU Transit Payroll System

Update Driver Information
1) The payroll manager must update the driver information in the **Drivers** tab.
2) The payroll manager can update the driver:
   a. Driver Number
   b. Driver First Name
   c. Driver Last Name
   d. Driver BannerID
   e. Driver Base Salary
   f. Driver Flat Rate
   g. If driver is on probation enter "P"
   h. If driver is a trainer enter "T"

Update Week Date
1) The payroll manager will click on the tab **Dates**.
2) When the payroll manager clicks the button **Most Recent Sunday** the system will generate a most recent Sunday in the last week shown in the system.
3) Updating these dates will update the dates shown on the individual timesheets.

SAP Export
1) The payroll manager will export the SAP information from The Talking Bus System.
2) The payroll manager will insert SAP information into the SAP Export tab in the system.

Creating One Timesheet
1) The payroll manager will go to the SAP Export tab in the system.
2) The payroll manager will click **Create One Timesheet.**
3) The payroll manager will be forced to enter the "Driver BannerID" and "Driver Number" into the system.
4) The system will then return the individual driver tab created in a separate tab of their individual timesheet.
5) The document will be printable and the driver must sign to verify their pay.

Create All Timesheets
1) The payroll manger will go to the SAP Export tab in the system.
2) The payroll manager will click **Create All Timesheets**.
3) The system will then generate all timesheets for banners found in the "Driver BannerID."
4) This will take some time to find all information used as "Driver BannerID."
5) The final result will be a new tab created labeled with the driver number.
6) This document will be printable and the driver must sign to verify their pay.

Printing Driver Summary Reports
1) After all timesheets are generated
2) The tab **Summary – Drivers** will be updated with:
    a. All driver numbers and corresponding names
    b. Regular hours and wages
    c. Late night hours and wages
    d. Pirate Express hours and wages
    e. Charters hours and wages
    f. Telecommunicators & Assistant Managers Hours and wages
    g. Training hours and wages

Printing Driver Payroll Summary Reports
1) After all timesheets are generated
2) The tab **Payroll Summary** will update with:
    a. Regular hours and wages
    b. Late night hours and wages
    c. Pirate Express hours and wages
    d. Overnight hours and wages
3) Listed will be a complete total and overview of how many hours worked by ECU Transit for a week.
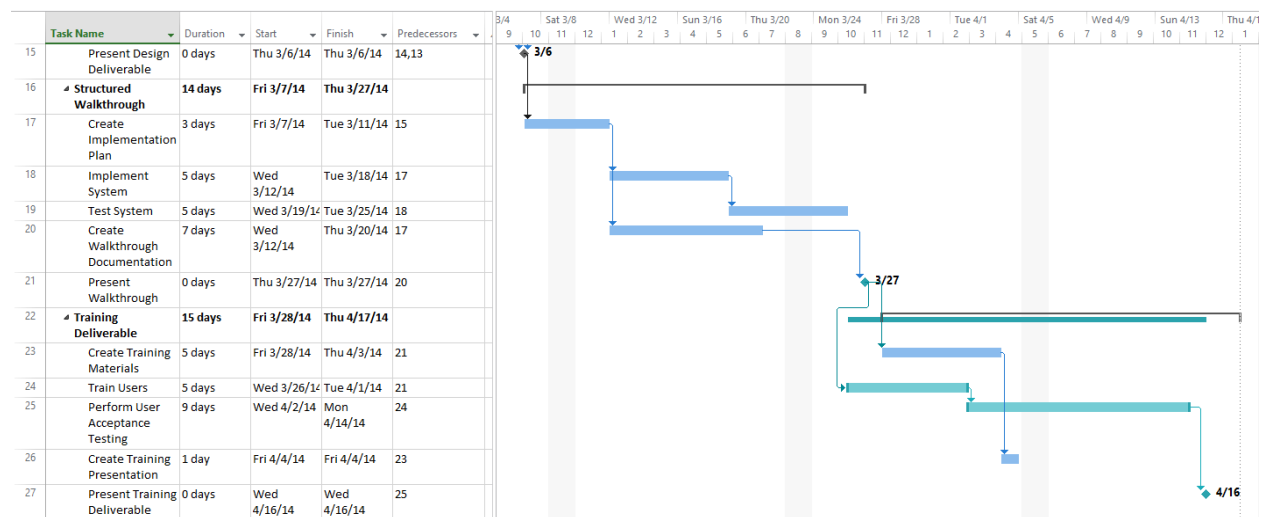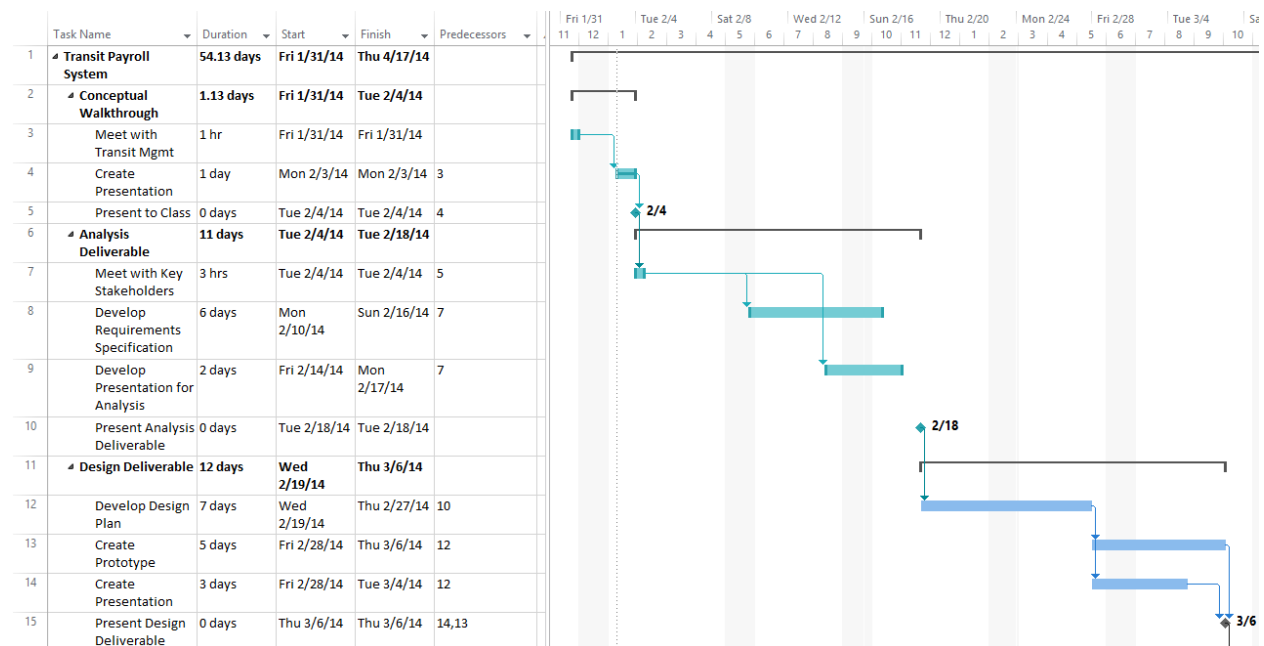
ECU.TRANSIT
Project Assessment

Executive Summary

For this final part of the project includes several main sections. The first is the updated project plan with all the past milestones but no future dates as there is nothing left to be done besides the final presentation. Also included are the project assessments. These are individual assessments about how each group member found the project and their experience with it. At the end is a lessons learned section that was written as a group. These includes the lessons that we learned from this project and the overall group experience from it.

Project Plan

Due to Snow Days and an overloaded work week prior to Spring Break, we are turning in this milestone much later than we had planned to. This is significant, as the next milestone will be occurring that much sooner. We have about a week until the next part of the project is due.

#	Task Name	Duration	Start	Finish	Predecessors
1	Transit Payroll System	54.13 days	Fri 1/31/14	Thu 4/17/14	
2	Conceptual Walkthrough	1.13 days	Fri 1/31/14	Tue 2/4/14	
3	Meet with Transit Mgmt	1 hr	Fri 1/31/14	Fri 1/31/14	
4	Create Presentation	1 day	Mon 2/3/14	Mon 2/3/14	3
5	Present to Class	0 days	Tue 2/4/14	Tue 2/4/14	4
6	Analysis Deliverable	11 days	Tue 2/4/14	Tue 2/18/14	
7	Meet with Key Stakeholders	3 hrs	Tue 2/4/14	Tue 2/4/14	5
8	Develop Requirements Specification	6 days	Mon 2/10/14	Sun 2/16/14	7
9	Develop Presentation for Analysis	2 days	Fri 2/14/14	Mon 2/17/14	7
10	Present Analysis Deliverable	0 days	Tue 2/18/14	Tue 2/18/14	
11	Design Deliverable	12 days	Wed 2/19/14	Thu 3/6/14	
12	Develop Design Plan	7 days	Wed 2/19/14	Thu 2/27/14	10
13	Create Prototype	5 days	Fri 2/28/14	Thu 3/6/14	12
14	Create Presentation	3 days	Fri 2/28/14	Tue 3/4/14	12
15	Present Design Deliverable	0 days	Thu 3/6/14	Thu 3/6/14	14,13

#	Task Name	Duration	Start	Finish	Predecessors
15	Present Design Deliverable	0 days	Thu 3/6/14	Thu 3/6/14	14,13
16	Structured Walkthrough	14 days	Fri 3/7/14	Thu 3/27/14	
17	Create Implementation Plan	3 days	Fri 3/7/14	Tue 3/11/14	15
18	Implement System	5 days	Wed 3/12/14	Tue 3/18/14	17
19	Test System	5 days	Wed 3/19/14	Tue 3/25/14	18
20	Create Walkthrough Documentation	7 days	Wed 3/12/14	Thu 3/20/14	17
21	Present Walkthrough	0 days	Thu 3/27/14	Thu 3/27/14	20
22	Training Deliverable	15 days	Fri 3/28/14	Thu 4/17/14	
23	Create Training Materials	5 days	Fri 3/28/14	Thu 4/3/14	21
24	Train Users	5 days	Wed 3/26/14	Tue 4/1/14	21
25	Perform User Acceptance Testing	9 days	Wed 4/2/14	Mon 4/14/14	24
26	Create Training Presentation	1 day	Fri 4/4/14	Fri 4/4/14	23
27	Present Training Deliverable	0 days	Wed 4/16/14	Wed 4/16/14	25

Project Assessment

Caroline Rankin

Going into this class I was worried what project we should choose since I knew we could not do the Financial Management Association. At the beginning of every semester ECU Transit has to have a mandatory driver meeting. At the driver meeting we were told Transit was going to require we turn our timesheets on time or there will be disciplinary action. Then at the beginning of this semester when we had to choose a project the ECU Transit Payroll came into my mind. Since I already knew the system and how it worked I figured it would not be too difficult to see what all we would need to be done to create ECU Transit's own payroll system.

Overall I believe this project went well. The ECU Transit Payroll System was easier than the Financial Management Association System, I believe it would not have been that easy if I did not already work for ECU Transit and I knew who to contact about what and where to get information. I believe this project showed me how a real world project would really work. In the end we are going to present the system to ECU Transit but it will not work without them contacting SAP for that information from The Talking Bus System. Having SAP create a backend system is the hardest part of this project because that is nothing we can do as a group.

My main part in this project was being the project manager. I was the one that coordinated meetings and contacting ECU Transit with questions. Also, I am the one who has kept the project as a whole organized and in one total document. I believe I have done well with maintaining organization in this team and this will help me down the road.

Madison Gardner

At the beginning of the semester, Caroline suggested that we work on ECU Transit's Payroll processes. I must admit, at first I thought the project seemed simple. There was not a need for any advanced technologies or difficult implementations. It just seemed like a very weak project for a senior project.

After I begrudgingly agreed to the project and we can began studying the business environment, I quickly realized something: this project was truly being driven by a business need. Most of the small group projects that we have done in the past involved our groups going to organizations and recommending that they automate some sort of process. However, this project had real business value.

The stakeholder indicated early on that they needed to speed up their payroll processes in order to comply with ECU standards. They also explained how the payroll process takes approximately two weeks to complete. After hearing all of these problems with the current process, we realized that a tech solution would not also be beneficial, but also needed desperately.

We also got the opportunity to work with some fascinating data systems. The Talking Bus system tracked real bus data in real-time, and SAP packaged these large amounts of data into reports. We especially enjoyed interfacing our system with SAP, as it gave us some valuable experience in the world of heavy client ERP systems.

We did run into some problems when we tried to write our VBA scripts in Excel. We had learned VB in a class, but VBA contains an entirely different syntax and we had a hard time learning that. Even despite this, we built a powerful analytics tool that can hopefully remove two weeks of time from the process!

Rodolfo Castillo

The ECU Transit Payroll System has been very interesting. From the moment the group took the challenge to work on the payroll system, we knew it would be a dandy. Knowing that one of our members, Caroline Rankin, works with the ECU Transit made the project less difficult since she knew the ins and outs of the job. This is one of the reasons we decided to take on the project was because she had first-hand knowledge of the problems ECU Transit had with its payroll system.

Through analysis of the environment we found problems such as payments being behind in the payroll system, inaccurate timesheets, and delayed timesheets delivered by drivers. Our group knew what we wanted to achieve to make the proposed system work. When it came to time sheets, our group wanted to make it possible for there to be an accurate processing of them. We also wanted the system to have fewer late payments for the purpose of budgeting liabilities. Also, we wanted the creation of timesheets to be prompt to avoid late payments.

Digging deep into the project, we learned more in the analysis deliverable. The use cases really helped our group understand better who the actors are and what functions they do. Use cases such as signing in to the bus, collecting shift information, and creating pay sheet made it clear how the system should work. The context diagram also showed a helpful visual that made the proposed system better to explain.

Over the process of the last four months, our group has learned to adapt to adversity when it comes to the meeting with key stakeholders for needed information. Especially at the last couple of weeks, our key stakeholders were not able to meet with us with certain information that we needed for our milestones. The design phase in particular a moment in which we had a stakeholder issue. We needed information from SAP but had a hard time getting that information from our stakeholders because the ECU Transit Management had little knowledge on the issue at hand. We had to come up with an alternative solution to this problem which was to create specs for our system as well as to document the data. This solution really helped us considering there were no way to get the information in time by the milestone due date.

The training milestone was something new that I personally found interesting. In past projects I did not go through this phase. Our group decided to make the training in the point of view of payroll manager. It was tricky at the beginning due to it being on Excel with various formulas that must be exactly correct to get the desired result.

At the end of it all, we made it through and have created a system that is able to do all the functions and goals that were set in the conceptual walkthrough. If the system is used, the ECU Transit System will benefit from the system by saving not only time but also money. Building this system with my fellow team members was a very pleasant experience because over the course of the semester I learned plenty from them.

Walker Stanley

When I first started the project I was really wondering what the difference between Dr. Paul's class and this class. Due to this reason I was very hesitant to start the project because I really felt like that we had covered it previously. The first step for the project was choosing the project that we needed to do. Caroline had the idea that we should choose what she was most familiar with and something that we really needed. The idea that Caroline had was with ECU Transit. This was a very good project to choose from as she has real experience on what was really needed to be done.

At the time the project was chosen ECU Transit was writing the time sheets by hand and that was causing a slow delivery of the paysheets to the drivers. The project that was proposed would fix all those problems and was the definition of what we needed to do. So that was when we decided that do that project. We choose the same group as Dr. Paul's class as that was what most people were doing. We also thought that it would save us some of the getting to know each other period that getting a new group required.

The project went well overall and there were no serious problems. As usual the group worked well together. As for each team member performance there was a discrepancy between the members. Caroline had the main responsibility of putting the parts of the project together and getting everything to mesh together well. As such her role was very important as it was her who made the final outputs as great as they were. Madison was the key player in the actual programming of the program. We decided to make the program in excel and use VBA to accomplish what we needed. Madison was the person who programmed the majority of the project and put it all together. He is one of the smartest people I have ever met. The part of the project that I completed was whatever was let that was needed to be done. A lot of the time it was the milestone evaluation or something of that caliber. I have to be honest and admit that it was an honor to work with these team members. I have learned more from working on this project than I have from doing to entirety of other classes.

Lessons Learned

When we first started this project we were not sure of what the end goal was going to be. It felt like Dr. Paul's class all over again. We quickly learned that it was quite different and we would actually have to build the system that we designed. When choosing a project we wanted something that was simple but that really made a difference on how a business operates. Caroline had the great idea of using ECU transit as she had personal experience with what really needed to be done.

We quickly learned the most important lesson of the project. When you think something is going to take a certain amount of time it will likely take a lot longer than you think. This caused several long nights before the end of semester. Some of these nights no one in the group slept because we needed to get everything done. Time and time again things took longer than expected. This was especially true of the actual coding that we did. This was the most time consuming part of the project.

Another lesson that we learned was the ability to split up the work. Originally we tried to split up everything evenly amongst all the members. This was started to effect the outcome of the work however. If everyone was trying to do the documentation then it would lack a certain consistency between the different sections. Perhaps the greatest example of this would be the actual coding of the project. Due to the nature of the exercise it would be very hard to split up that work. Due to this on certain milestones the work was split up unevenly. While this may seem unfair we determined that it was the only way that it was going to get done.

As a group consensus it seems that the documentation and design portion was more enjoyable than the actual building of the program. We believe that this is due to the fact that we did not have much experience with VBA. This meant that we had to learn everything as we went along. Overall this experience was enjoyable and we all believe that it will be beneficial to our work experience. Also we can now see the difference between this class and Dr. Paul's.

Appendix

Milestone Evaluations

Conceptual Walkthrough Package Milestone Evaluation

Progress and Accomplishments

The first goal for this part was to decide what the project we wanted to do was. Caroline had the great idea of working with the ECU transit authority and making their timesheets automatic. We accomplished the first steps of working towards that goal was describing what the goals for the project was. There was no physical documentation that was due but this was a very important part of the project.

Problems Encountered

There was no real problems that were encountered with this part of the project. The only main concern was the actual choosing of the project as mentioned above.

Staying on Schedule

There was no time crunch with this part of the project as the only deliverable was the presentation portion. For this part we made sure that we had plenty of time and do what we needed.

Looking Ahead

The next couple of months will be full of deliverables and things that need to be done. If Dr. Paul's class is any example of what needed to be done then there will be a considerable amount of work to be done. It will be challenging but we are sure it can be completed.

Analysis Package Milestone Evaluation

Progress and Accomplishments

After finishing the conceptual walkthrough stage we decided to directly move into the next phase. We accomplished this by taking the next week and correcting our previous paper and taking the next steps for the analysis phase. The previous milestone had no deliverables to turn in so the first step was to write out those conceptual walkthrough specifications. We managed to finish all the requirements for the analysis phase. The first step was to create all the use cases. We ended up only needing to have three use cases. The next step was to create the context diagram for out project.

Problems Encountered

Overall we did not encounter any major problems as we stayed on schedule and managed to have everything done. We weren't sure why we needed to turn in the conceptual walkthrough with the analysis phase so we just needed to clear that up. For the use cases we started with five but soon through system analysis ended up with three which we felt was enough to cover everything.

Staying on Schedule

We had what felt like a very short period of time between milestones. We probably waited a little too long to start this milestone so we ended up doing a lot of work on the weekend before it was due. Overall though we thought that we did a very good job of finishing everything up everything on time with the quality on time.

Looking Ahead

We are looking forward to the next phase of our project. The design phase will be a welcome change from the analysis stage. It will be different from Dr. Paul's class as we will need to design a system that will be actually be feasible to build. In order to accomplish this we will design DFD to several levels down. There are still many things to accomplish for this project.

Other Thoughts

As a team we are working very well together and are doing a very good job presenting. We have focused on practicing our presentations as is a very important part of the project. Overall we are happy with the work that we have done so far and hope to continue that work.

Design Package Milestone Evaluation

Progress and Accomplishments

The first step for the Design phase was to create our level 0 DFD. We then broke up the DFD and brought them down to level 1. Most of the processes we could only take down to level 1. But we managed to take a couple down to level 2. We also created design mockups of the outputs form that we would need. We adapted the current pay sheet to be able to be an output of our new system. We created excel sheets to also show how the system will be created.

Problems Encountered

The first problem that we had was finding a way to break down the DFD's to level 2. WE just couldn't find enough data that would make it an acceptable level 2. This showed us that it was fine to keep some of the processes at level 1. The biggest problem with this milestone was finding a way to finish this project in the original allotted time, but we will discuss this in the staying on schedule section.

Staying on Schedule

The period of time between the analysis package and the design package was filled with interruptions and distractions. First off the snow delayed us for a couple of days. Also during that period every other MIS class had midterms and major projects due so we were struggling on getting everything done on time. Thankfully the gracious Professor Seeman put off the project until after spring break allowing us much needed time to finish the project.

Looking Ahead

The next phase is going to be the structured walkthrough. We will need to start putting the pieces together on this system and get everything finished up in order to complete the final three design phases.

Structured Walkthrough Package Milestone Evaluation

Progress and Accomplishments

It was a short week in between the two milestones and this milestone is not as substantial as the previous ones. The goal for this week was to start the programming in VBA for excel. We wanted to get as far as possible so that we could be done sooner.

Problems Encountered

It was much more difficult than we thought it was going to be to program using excel. Even before we started we found out we needed a password to access the excel sheet so we had to look up a way on google to get around it. Directly after that we needed to convert time from 3:30 to 3.50 format. A simple problem that took us around an hour to fix. This was just the start of the numerous problems that we had trying to finish this programming. Most of the problems that we were able to fix by looking up things on google but we still have some things to work out.

Staying on Schedule

The short time period between the two milestones didn't allow us much time to procrastinate on getting everything done. Not having a ton to actually turn in helped us not spent too many late nights to finish everything.

Looking Ahead

We have more time to complete the next milestone which is the training milestone. We need to complete what we have left in order to do the training part. One thing that we think that will help out training is that we are also going to have to learn how to use the systems ourselves before training the ECU transit. We want to make it very easy and user friendly.

Training Package Milestone Evaluation

Progress and Accomplishments

In the previous milestone we started and almost finished the program for our project. The first thing that we wanted to do was getting the program fully working and finished. We wanted to make it so that we train an employee there want be any problems during the training session. With that in mind we really spent the majority of the time debugging everything that we could.

Problems Encountered

The main problem that we encountered was the fact that we were unsure what exactly the training milestone presentation actually is. In talking with other groups and looking at past project we were able to nail down what actually we were trying to accomplish.

Staying on Schedule

Once again scheduling was tough in this project. There was a longer period of time in between the milestones and that really helped. Half of the group went on a trip for the FMA to New York so we made sure that we finished as much as possible before that.

Looking Ahead

For the final presentation we need to complete the documentation needed to turn in. Also there are still a couple of bugs that need to be worked out. For the final presentation we need to make an excellent presentation and practice it fully. For the past presentations there was limited preparations that went into the actual presentations. For the final we want to have the full professional appearance that is expected from a professional.

Timesheets

Caroline Rankin

Specific Task	Date	Start Time	Stop Time	Hours Worked
Team Meeting	Jan 21, 2014	7:30 PM	8:30 PM	1 Hour
Meet with Transit Director	Jan 22, 2014	9:00 AM	10:00 AM	1 Hour
Conceptual Walkthrough Team Meeting	Jan 23, 2014	3:30 PM	5:30 PM	2 Hours
Conceptual Walkthrough Review	Jan 27, 2014	6:00 PM	7:00 PM	1 Hour
Conceptual Walkthrough Review	Jan 29, 2014	4:30 PM	6:00 PM	1.5 Hours
Conceptual Walkthrough Review	Feb 3, 2014	8:00 PM	10:30 PM	2.5 Hours
CONCEPTUAL WALKTHROUGH TOTAL				**9 Hours**
Meet with Transit Payroll Manager	Feb 8, 2014	8:30 AM	10:00 PM	1.5 Hours
Analysis Team Meeting	Feb 13, 2014	3:30 PM	5:00 PM	1.5 Hours
Analysis Team Meeting	Feb 16, 2014	3:00 PM	5:00 PM	2 Hours
Analysis Review	Feb 17, 2014	7:00 PM	11:00 PM	4 Hours
ANALYSIS TOTAL				**9 Hours**
Design Team Meeting	Feb 21, 2014	7:30 PM	9:30 PM	2 Hours
Design Team Meeting	Feb 23, 2014	3:00 PM	7:00 PM	4 Hours
Design Team Meeting	Feb 28, 2014	7:00 PM	8:30 PM	1.5 Hours
Design Team Meeting	Mar 2, 2014	2:00 PM	9:00 PM	7 Hours
Design Team Meeting	Mar 4, 2014	7:30 PM	9:30 PM	2 Hours
Design Review	Mar 16, 2014	5:00 PM	9:30 PM	4.5 Hours
Design Review	Mar 17, 2014	7:30 PM	9:30 PM	2 Hours
DESIGN TOTAL				**23 Hours**
Structured Walkthrough	Mar 21, 2014	6:30 PM	8:00 PM	1.5 Hours
Structured Walkthrough	Mar 23, 2014	5:00 PM	8:00 PM	3 Hours
Structured Walkthrough	Mar 24, 2014	6:00 PM	8:30 PM	2.5 Hours
Structured Walkthrough	Mar 25, 2014	7:00 PM	1:00 AM	6 Hours
Structured Walkthrough Review	Mar 26, 2014	8:00 PM	12:00 PM	4 Hours
STRUCTURED WALKTHROUGH TOTAL				**17 Hours**
Training	April 7, 2014	6:30 PM	8:00 PM	1.5 Hour
Training	April 9, 2014	5:00 PM	8:00 PM	3 Hours
Training Review	April 14, 2014	6:00 PM	8:30 PM	2.5 Hours
TRAINING TOTAL				**7 Hours**
Organizing Project	April 27, 2014	5:30 PM	8:30 PM	3 Hours
Project Assessments	April 28, 2014	7:00 PM	9:00 PM	2 Hours
Project Assessment				**5 Hours**
TOTAL HOURS				70 Hours

Madison Gardner

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ANALYSIS TOTAL				9 Hours
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Design Team Meeting	Feb 28, 2014	7:00 PM	8:30 PM	1.5 Hours
Design Team Meeting	Mar 2, 2014	2:00 PM	9:00 PM	7 Hours
Design Team Meeting	Mar 4, 2014	7:30 PM	9:30 PM	2 Hours
Design Review	Mar 16, 2014	5:00 PM	9:30 PM	4.5 Hours
Design Review	Mar 17, 2014	7:30 PM	9:30 PM	2 Hours
DESIGN TOTAL				23 Hours
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Structured Walkthrough	Mar 23, 2014	5:00 PM	8:00 PM	3 Hours
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Structured Walkthrough	Mar 25, 2014	7:00 PM	1:00 AM	6 Hours
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Project Assessments	April 28, 2014	7:00 PM	9:00 PM	2 Hours
Project Assessment				5 Hours
TOTAL HOURS				70 Hours

Rodolfo Castillo

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CONCEPTUAL WALKTHROUGH TOTAL				8 Hours
Analysis Team Meeting	Feb 13, 2014	3:30 PM	5:00 PM	1.5 Hours
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Design Review	Mar 17, 2014	7:30 PM	9:30 PM	2 Hours
DESIGN TOTAL				22.5 Hours
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Project Assessment				5 Hours
TOTAL HOURS				67 Hours

Walker Stanley

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Project Assessment				5 Hours
TOTAL HOURS				67 Hours