Systems Analysis and Design

Richard, Ahn, Anthony, Christine, Darren

Planning Phase

System Request

Project Sponsor: Waleighs

Business Need: The company needs to invest in an information systems to record transactions more efficiently and accurately. Other technological upgrades will be included like a website or better advertising. Printers and a barcode system will also be put into place in order to upgrade the company's technology.

- The system will change from the card indexes to using a computer to keep track of the transactions.
- Also need a website where customers can put in orders through there and keeps track of the order. The website can also offer a way for customers to customize and order the custom built bikes
- Need a computer system to keep track of the invoices.
- Include barcodes on products and barcode readers to keep track of inventory
- Hire an information systems team to help install and maintain the system

Business Requirements: Using newer technology, the company will be able to keep track of orders, invoices, and records so that there will be less mistakes being made. With the new company website they will also be able to appeal to more customers and provide some convenience.

- Upgrade the company's technology infrastructure and use computers to store the data for example inventory control
- The inventory control system will also make reminders to the store to refill on any stock that is low at the moment
- Use computers to store and record any orders that the customers have and to keep receipts of the transactions
- Have a system that keeps track of invoices and automatically sends out invoices when needed
- Information systems team will install the technology and will be there to deal with any issues that the other employees

Business Value: Healthy rides find many ways to try and increase their income.. The company will be able to provide the necessary products for cycling. It will also sell cycle clothing.

- $300,000 revenue from in store sales from bicycles and parts in year 1
- $450,000 revenue from in store sales from bicycles and parts in year 2
- $600,000 revenue from in store sales from bicycles and parts in year 3
- $15,000 revenue from clothing merchandise year 1
- $35,000 revenue from clothing merchandise year 2
- $55,000 revenue from clothing merchandise year 3
- $10,000 revenue from accessories in year 1
- $25,000 revenue from accessories in year 2
- $45,000 revenue from accessories in year 3
- $75,000 revenue from repairs in year 1
- $80,000 revenue from repairs in year 2
- $100,000 revenue from repairs in year 3

Special Issues or Constraints

- Inefficiency and low turnover is an issue therefore in order to prevent mismanagement and slow or delayed sales, we must finish this project as quickly as possible.
- Needs to generate enough revenue to show Waleigh that the company is doing well in order to continue receiving the 10% discount on Waleigh goods.
- If possible, company needs to have turnover of $800,000 by 2000 or the company will collapse
- They need to be able to repay the loan of $200,000 that they took out.
- The business faces a time constraint because it first has to refurbish the new premise and introduce the new systems which takes around 3-4 months before it can begin its operations.

Project Plan

Work Plan:

Work Plan				Estimated		Actual			
Task ID	**Task Name/ Description**	**Assigned To**	**Duration**	**Start Date**	**Finish Date**	**Start Date**	**Finish Date**	**Duration Difference**	**Status**
1.3	**Project Plan**	**Anh**	**14 days**	**Thu 9/13/18**	**Thu 9/27/18**	**Thu 9/20/18**	**Thu 9/20/18**	**7 days**	**Closed**
1.2	**Project Feasibility**	**Anthony**	**14 days**	**Thu 9/13/18**	**Thu 9/27/18**	**Thu 9/13/18**	**Thu 9/20/18**	**7 days**	**Closed**
1.3	**Project Plan**	**Christine**	**14 days**	**Thu 9/13/18**	**Thu 9/27/18**	**Wed 9/19/18**	**Thu 9/20/18**	**7 days**	**Closed**
1.2	**Project Feasibility**	**Darren**	**14 days**	**Thu 9/13/18**	**Thu 9/27/18**	**Thu 9/13/18**	**Tue 9/25/18**	**2 days**	**Closed**
1.1	**System Request**	**Richard**	**14 days**	**Thu 9/13/18**	**Thu 9/27/18**	**Thu 9/13/18**	**Thu 9/20/18**	**7 days**	**Closed**
1.4	**Presentation**	**Team**	**7 days**	**Thu 9/13/18**	**Thu 9/27/18**	**Thu 9/20/18**			**Open**

Staffing Plan:

Role	Task ID	Description	Assigned To
Systems Analyst	**1.3**	**Predict the potential risks of the project and explain how to address them**	**Anh**
Infrastructure Analyst	**1.2**	**Identify the technical and organizational feasibilities of Healthy Rides' infrastructure**	**Anthony**
Systems Analyst	**1.3**	**Record the work plan, staff plan, and list the standards of the group project**	**Christine**
Infrastructure Analyst	**1.2**	**Identify the economic feasibilities and tangible/intangible benefits of Healthy Rides' costs**	**Darren**
Systems Analyst	**1.1**	**Identify the reasons for building an information system and address requirements, value, and issues**	**Richard**

Standards List:

Type	Description/ Example
Documentation Standards	**The font should be 12pt Times New Roman for all documentation**
	The name of project and date should be on the header of all documentation
	Every section should be spaced out in each documentation
	All deliverables will be printed and added to the project binder
Coding Standards	**Naming all the variables and classes in the code should not be ambiguous**
	When a code block becomes too large break it into smaller chunks of 5 lines of code
	Add comments when necessary when code blocks are hard to understand
Procedural Standards	**Meet online via Google Docs on September 19th around 8pm to make progress on project**
	Report progress on September 20th and make updates to the project
	Record actual task progress in the work plan after team member completes task
	Discuss any necessary changes to the required documents with team members

Project Feasibility

Technical Feasibility:

Using a new management system with computer technology such as barcodes and digital time cards to track inventory levels, repair invoices, and customer order invoices, there is a high possibility of risk.

Healthy Ride's risk for the familiarity with using computer-assisted applications is moderately high.

- The manager in charge of item inventory currently uses index cards to keep track of stock and staff members in charge of recording sales fails to write them down.
- The inventory, sales, and repair system is primitive as it is all done by paper and pencil so using a computer program to achieve the role of tracking these three systems may prove to be of a high risk as nearly all members do not have any familiarity with this technology.

Healthy Rides' risk in regards to how familiar they are with this technology is moderately high.

- Everyone does not know how to set up the computers, connect to networks, use the barcode scanners, operating printers, and using the company's website with the exception of Amir who has some knowledge with this.
- Half of the programmers developing the applications for our computer system only know C language and the other only know Java.

Project size is considered to be of medium risk.

- The project team will likely consist of Adli, Amir, Sameer, Freeda, and a select few top staff members at the telephone service and a small group (no more than 6 people) of certified IT professionals who are also programmers.

Compatibility with Healthy Rides technical infrastructure should be difficult but manageable.

- No equipment is currently set up and no online services are created and running.
- There is a known ISP that is hosting network stations around the area.

Economic Feasibility:

All Potential Costs:

Loan of $200,000 to be paid back in 5 years with payments of $60,000 annually (1997-2000)

Item or Service	**Cost Amount**	**Cost Type**
Cost of Feasibility Study	$1,000	Development Cost
Purchase and Refurbishment of New Premise	$150,000	Development Cost
Advertising, Development of computerized sales, ordering system, development of Internet site	$50,000	Development Cost
Amir's Salary Increase	$7,500	Development Cost
Initial Investment	$5000	Development Cost
Additional advertising and new stock	$7,000	Operational Cost
Annual Operating Costs	$2500*3 years	Operational Costs
Barcode reader, Printers, peripherals, 2 new computers for stock control system	$5000	Operational Costs
Internet Service Provider annual cost	$200 * 3 years	Operational Cost

This is calculated by taking the cost of the feasibility study ($1000) , the purchase of the new premise using the loan or $150,000, the estimated investment $5000, annual operating cost $7,500, and additional advertising of $50,000 that comes from the rest of the $200,000 loan. The project will have development costs totalling $208,500 dollars.

The operating costs for the project is made up of the following components. Advertising and new stock make up $7,000. Annual operating cost is $2500 for 3 years. Employee salary including the owner is split among 7 employees for the next 3 years is estimated to be around $450,000. We also take into account Amir's salary increase of $2500 each year and the cost for hosting the

service with an internet service provider for $200 a year. Total operating costs will be $1,386,600.

The total cost for the project would be around $1,600,100.00 by the end of 3 years will be $1,600,100.00.

Revenues	**Estimated Amount Earned from Revenues**
Revenue from store sales	**$1,3500,000 after 3 years**
Revenue from Bike Repairs	**$225,000 after 3 years**
Revenue from accessories	**$80,000 after 3 years**
Revenue from clothing brand	**$105,000 after 3 years**
Total	**$1,790,000 at the end of the 3 year period**

The revenues above are calculated based off the three year period assuming that the business continues its trend of steady growth. We are able to get a turnover of 100% by the 3 year period that is required which is $800,000 from the starting turnover of $400,000 in year 0.

	Year 1997 (Year 0)	Year 1998 (Year 1)	Year 1999 (Year 2)	Year 2000 (Year 3)	Total
Benefits					
Revenue store sales		$ 300,000.00	$ 450,000.00	$ 600,000.00	$ 1,350,000.00
Clothing merchandise sales		$ 15,000.00	$ 35,000.00	$ 55,000.00	$ 105,000.00
Revenue from accessories		$ 10,000.00	$ 25,000.00	$ 45,000.00	$ 80,000.00
Repair Revenue		$75,000	$ 80,000.00	$ 100,000.00	$ 255,000.00
Total Benefits		**$ 400,000.00**	**$ 590,000.00**	**$ 800,000.00**	**$ 1,790,000.00**
Development Costs					
Cost of Feasibility Study	$ 1,000.00	0.00	0.00	0.00	$ 1,000.00
Purchase and Refurbishment of New Premi	$ 150,000.00	0.00	0.00	0.00	$ 150,000.00
Initial Investment	$ 5,000.00	0.00	0.00	0.00	$ 5,000.00
Annual Operating Costs	$ 7,500.00	0.00	0.00	0.00	$ 7,500.00
Additional Advertising,Website Developme	$ 50,000.00	0.00	0.00	0.00	$ 50,000.00
Total Development Costs	**$ 213,500.00**	**$ -**	**$ -**	**$ -**	**$ 213,500.00**
Operational Costs					
Advertising and new stock		$7,000	$7,000	$7,000	$ 21,000.00
Annual Operating Costs		$2,500.00	$2,500.00	$2,500.00	$ 7,500.00
Internet Service Provider annual cost		$200.00	$200.00	$200.00	$ 600.00
Amir Salary Increase		$2,500.00	$2,500.00	$2,500.00	$7,500.00
Employee Salary		$450,000.00	$450,000.00	$450,000.00	$1,350,000.00
Total Operational Cost		**$462,200**	**$462,200**	**$462,200**	**$1,386,600**
Total Costs	**$ 213,500.00**	**$ 462,200.00**	**$ 462,200.00**	**$ 462,200.00**	**$ 1,600,100.00**
Total Benefits -Total Costs	**$ (213,500.00)**	**$ (62,200.00)**	**$ 127,800.00**	**$ 337,800.00**	**$ 189,900.00**
Cumlative Net Cash Flow	**$ (213,500.00)**	**$ (275,700.00)**	**$(147,900.00)**	**$ 189,900.00**	**$ 379,800.00**
Return on Investment (ROI) = (Total Benefits - Total Costs) / Total Costs	**0.11868**				
Break-even Point = # of years of negative cum cash flows + (The Year's net cash flow (in which cum cash flow turns positive) - this year's cum cash flow)/This year's net cash flow	**3.0000053**				

A	B	C	D	E	F
Rate	**5%**				
	Year 1997 (Year 0)	**Year 1998 (Year 1)**	**Year 1999 (Year 2)**	**Year 2000 (Year 3)**	**Total**
Benefits					
Revenue store sales		$ 300,000.00	$ 450,000.00	$ 600,000.00	$1,350,000.00
Clothing merchandise sales		$ 15,000.00	$ 35,000.00	$ 55,000.00	$ 105,000.00
Revenue from accessories		$ 10,000.00	$ 25,000.00	$ 45,000.00	$ 80,000.00
Repair Revenue		$75,000	$ 80,000.00	$ 100,000.00	$ 255,000.00
Total Benefits		**$ 400,000.00**	**$ 590,000.00**	**$ 800,000.00**	**$1,790,000.00**
Present Value Total Benefits		**$ 380,952.38**	**$ 535,147.39**	**$ 691,070.08**	**$1,607,169.85**
Development Costs					
Cost of Feasibility Study	$ 1,000.00	0.00	0.00	0.00	$ 1,000.00
Purchase and Refurbishment of New Premise	$ 150,000.00	0.00	0.00	0.00	$ 150,000.00
Initial Investment for computers and other equipment	$ 5,000.00	0.00	0.00	0.00	$ 5,000.00
Adli Salary Increase	$ 7,500.00	0.00	0.00	0.00	$ 7,500.00
Additional Advertising,Website Development, Ordering System, Computerized Sales	$ 50,000.00	0.00	0.00	0.00	$ 50,000.00
Total Development Costs	**$ 213,500.00**				**$ 213,500.00**
Operational Costs					
Advertising and new stock		$7,000	$7,000	$7,000	$ 21,000.00
Annual Operating Costs		$2,500.00	$2,500.00	$2,500.00	$ 7,500.00
Internet Service Provider annual cost		$200.00	$200.00	$200.00	$ 600.00
Employee Salary (7 employees)		$450,000.00	$450,000.00	$450,000.00	$1,350,000.00
Total Operational Cost		**$459,700.00**	**$459,700.00**	**$459,700.00**	**$1,379,100.00**
Total Costs	**$ 213,500.00**	**$ 459,700.00**	**$ 459,700.00**	**$ 459,700.00**	**$1,592,600.00**
Present Value Total Costs	**$ 213,500.00**	**$ 437,809.52**	**$ 416,961.45**	**$ 397,106.14**	**$1,465,377.12**
NPV (PV Total Benefits - PV Total Costs)					**$ 141,792.73**
PV= (Cash Flow)/(1+rate)^n , n is the year in which the cash flow occurs.					

Potential Tangible and Intangible Benefits:

Tangible Benefits:

1) Reduction of possible mistakes by moving to a more technologically improved process
2) Potentially increasing revenue through faster sales process. Improved processing efficiency
3) Increase the number of customers through advertising and marketing
4) Improved customer retention.
5) Increased productivity of employees so they can focus on other areas of the business
6) A better system for differentiating between regular customers and other bike shops which helps apply correct discounts to get more accurate sales numbers.
7) Reduction of delayed invoices
8) Healthy Rides can retain its customer relationship with Waleigh. They will still continue to receive the 10% discount on Waleigh goods.

Intangible Benefits:

1) Improve employee morale
2) Increased satisfaction with customers due to better service.
3) Better supplier relations due to improvements.
4) Potential competitive advantage over competitors such as Malfords.
5) Reduction in the number of phone calls that have to be made

ROI: The return on investment for the following project is approximately 11.87%.

NPV: The net present value will be $141,792.73. It is a positive net present value and therefore we should go ahead with the decision if there are no other issues.

Break Even: The estimated break even point is approximately 3 years to break even. In the year 2000, we receive a positive cumulative net cash flow assuming that there is continued growth of the company's business in this time period.

Organizational Feasibility:

In the organizational view of Healthy Rides, this project has medium risk. Adli, the owner and manager of Healthy Rides, is interested but is severely lacking in the knowledge of this new system setup. Although Adli does have a strong interest in expanding his business to combat the poor turnover rate, he tries his best as the owner and manager of the business. Even the project champion, Waleighs, is our respected partner who trusts that we expand our company significantly in order to keep a good relationship with Waleighs.

The employees using the new system are expected to learn and adapt this new technology for faster and more accurate sales and inventory control. This system may help combat the risk of missing inventory thanks to the barcode scanners and digital time stamps on the terminal. It may also speed up the recording process by tracking sales and inventory more efficiently through computerized means. Finally, having a database server and website set up in the system can also help detect which customers are eligible for special discounts so that the risk of discounts being abused can be mitigated.

Additional Comments:

- We should consider adding a permanent IT department in our business to help keep check and update our computerized systems and other technologies.
- We should hire new staff who are already familiar with operating this new system so less time is consumed for training.

Risk Assessment:

Risk #1:

Risk of scope is indistinct defined as there are errors in risk determination. Ill-defined scope lead to conflict, rework and dissatisfaction. Clearly defined project and requirement enable for project success.

Likelihood of risk:

High probability of risk

Potential impact on project:

This may increase the set up time and cost of the system because of the extra work for redo process, taking double time to work on the same task.

Ways to address this risk:

Time spent to fully understanding project and product scope is well spent. In order to move from higher understanding of the project, we need an expert judgement. That might come in form of

team members and professor. As there are more than one product can be broken down into deliverables, team members are advised to speak with Professor Nimer Alrushiedat to achieve better understanding of project, and unify appropriate acceptance criteria.

Risk #2:

The development of this system will be limited in visibility due to lack of change in management process.

Likelihood of risk:

Medium probability of risk

Potential impact on project:

Poor change management will cause us not to achieve expected outcomes and results. A company cannot utilize resources and assets to their maximum potential.

Ways to address this risk

Most of the time people refuse to change due to risk of failure. However, it is more efficient to make implement changes that may or may not lead to mistakes than doing nothing. Team need to seek for problems, ask more questions, make plans for the change, provide supported data, communicate with other members and expert to finalize the best decision to execute.

Additional Comments:

- If we are unable to move forward, we should consult with the professor to address our concerns on the project
- We should also consult with other members to discuss any problems or if any member is struggling with a task

Analysis Phase

Use case name: Create an order	ID: ___1___	Importance Level: High
Primary actor: Computer		
Short description: This use case describes how the computer records a customer order or order that the company makes from suppliers		
Trigger: When the employee submits the order into the computer or point of sale (POS) system		
Type (External / Temporal): External		

Major Inputs		Major Outputs	
Description	Source	Description	Destination
Order type	Product barcode	Receipt	Customer
Order details	Product barcode	Order ID	Company Computer
Payment details	Customer		
Customer type	Computer		
Customer info	Customer		

Major Steps Performed	Information for Steps
1. Computer checks customer using Customer ID. 1.1 Check if customer is from supplier or a regular customer	Identification
2. Computer checks order details 2.1 Computer checks for multiple orders 2.2 Computer processes the order	Order ID
3 Computer checks if item is in stock. 3.1 If item is not in stock a. Cancel the transaction b. Accept the transaction and issue a backorder number along with future date of order completion	Check inventory
4. Computer calculates total amount due 4.1 Computer finds item price for each item 4.2 Totals up the prices 4.3 Include the tax 4.4 Display final price	Calculate prices
5. Process payment 5.1 Find if its cash, debit, credit, or check 5.2 Accept payment	Accept payment

5.3 Return change if cash payment	
6. Record transaction **6.1 Send transaction information to database** **6.2 Print out receipt for customer**	**Track records**
7. Update inventory **7.1 Send Order ID to inventory tracking system**	**Update**

Use case name: Track Inventory		**ID: ___2___**	**Importance Level: High**
Primary actor: Computer			
Short description: This use case describes how the computer system keeps track of inventory. The inventory may be increased or decreased depending on customer orders and supply of stock orders.			
Trigger: The barcode scanner immediately updates the inventory level records when active.			
Type (External / Temporal): External			
Major Inputs		**Major Outputs**	
Description	**Source**	**Description**	**Destination**
Bike	**Product**	**Record**	**Company Computer**
Clothes	**Product**		
Bike parts	**Product**		
Order type	**Order**		
Major Steps Performed		**Information for Steps**	
1. Computer receives the Clothing ID, and or Bike ID and or Bike Parts ID from the latest active transaction number or Order ID.		**Identification**	
2. Computer checks what items are listed in the Order and confirms them.		**Confirmation**	
3. If confirmation is unsuccessful, **a. Computer prompts user a reason for error.** **b. Error code is logged into the system in the Inventory Error data store and is only accessible to an authorized user.** **c. Computer skips to Step 5.**		**Prompt and log error**	

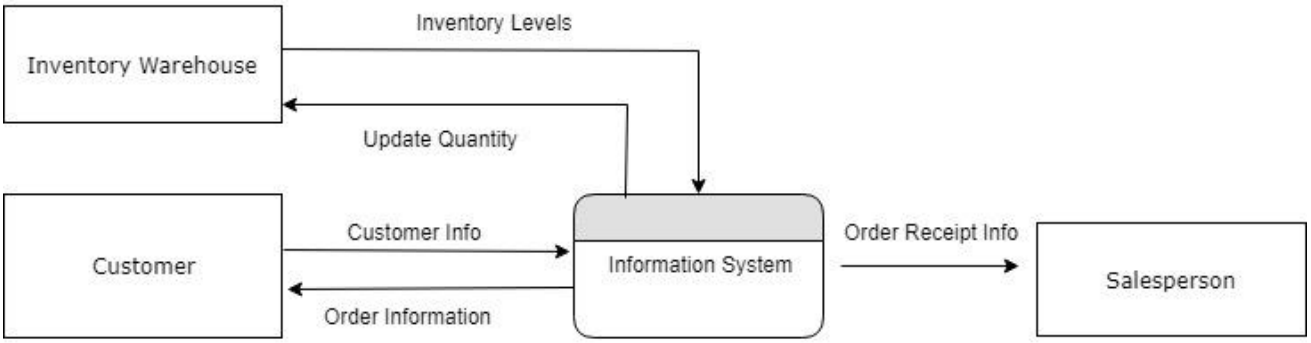
4. If confirmation is successful, a. Computer deducts the stock level of the affected items. b. The inventory records is updated.	Record and update
5. Computer seeks for the next transaction in the queue if available and skips to Step 1.	Queue
6. If not available, Computer waits for another incoming transaction.	Wait time

Use case name: Bike Repair Services		ID: ___3___	Importance Level: High
Primary actor: Customer			
Short description: This use case handles customers who requested for bike repair service.			
Trigger: When the customer has selected repair services as part of their order			
Type (External / Temporal):			
Major Inputs		Major Outputs	
Description	Source	Description	Destination
Bike type	Customer	Bike Information	Customer
Bike brand	Customer	Repair Description	Company Computer
Repair type		Order Confirmation	Customer
Customer details	Customer		
Payment details	Customer		
Major Steps Performed		Information for Steps	
1. Select bike type or brand 1.1 Select repair type		Bike information	
2. If repair services are requested, describe what needs to be repaired		Identify repair type	
3. If bike parts are needed, choose amount required for repairs		Identify bike parts	
4. Select available date and time		Availability for service	
5. Added repair services to orders		Update order details	

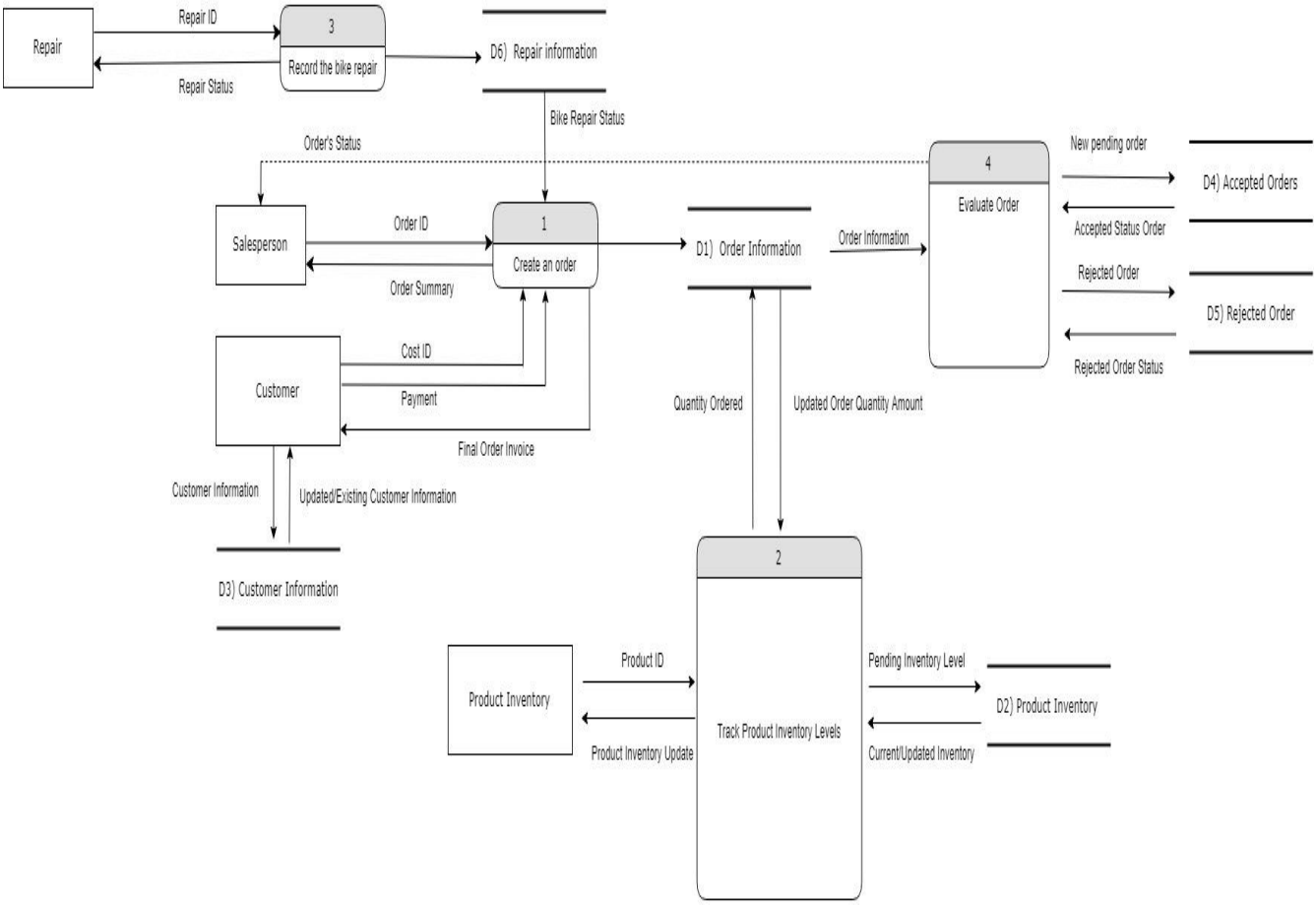
6. Verify customer address and phone	**Confirm customer details**
7. Determine total cost **a. Add repair costs, bike part costs, and other order costs** **b. Calculate taxes** **c. Display total due**	**Total amount due**
8. Verify and process payment information	**Authorize payment**
9. Order confirmation **9.1 Send Order ID to the system to schedule a bike mechanic**	**Order confirmation**

Use case name: Evaluate the order		**ID: ___4____**	**Importance Level:**
Primary actor: Salesperson			
Short description: The use case describes checking the order to either be accepted or rejected.			
Trigger: After an inventory is created and inventory is tracked, an order can either be accepted or rejected			
Type (External / Temporal): External			
Major Inputs		**Major Outputs**	
Description	**Source**	**Description**	**Destination**
The Order Information (Contains inventory quantity and customer id and payment information)	Salesperson	**Accepted Order Status**	**Sales Person**
		Rejected Order Status	**Sales Person**
Major Steps Performed		**Information for Steps**	
1) Computer checks if the order is valid by checking if there is enough inventory or if the payment information is correct. If either are not valid, then reject offer.		**Assign an Order Status (Accepted or Rejected)**	

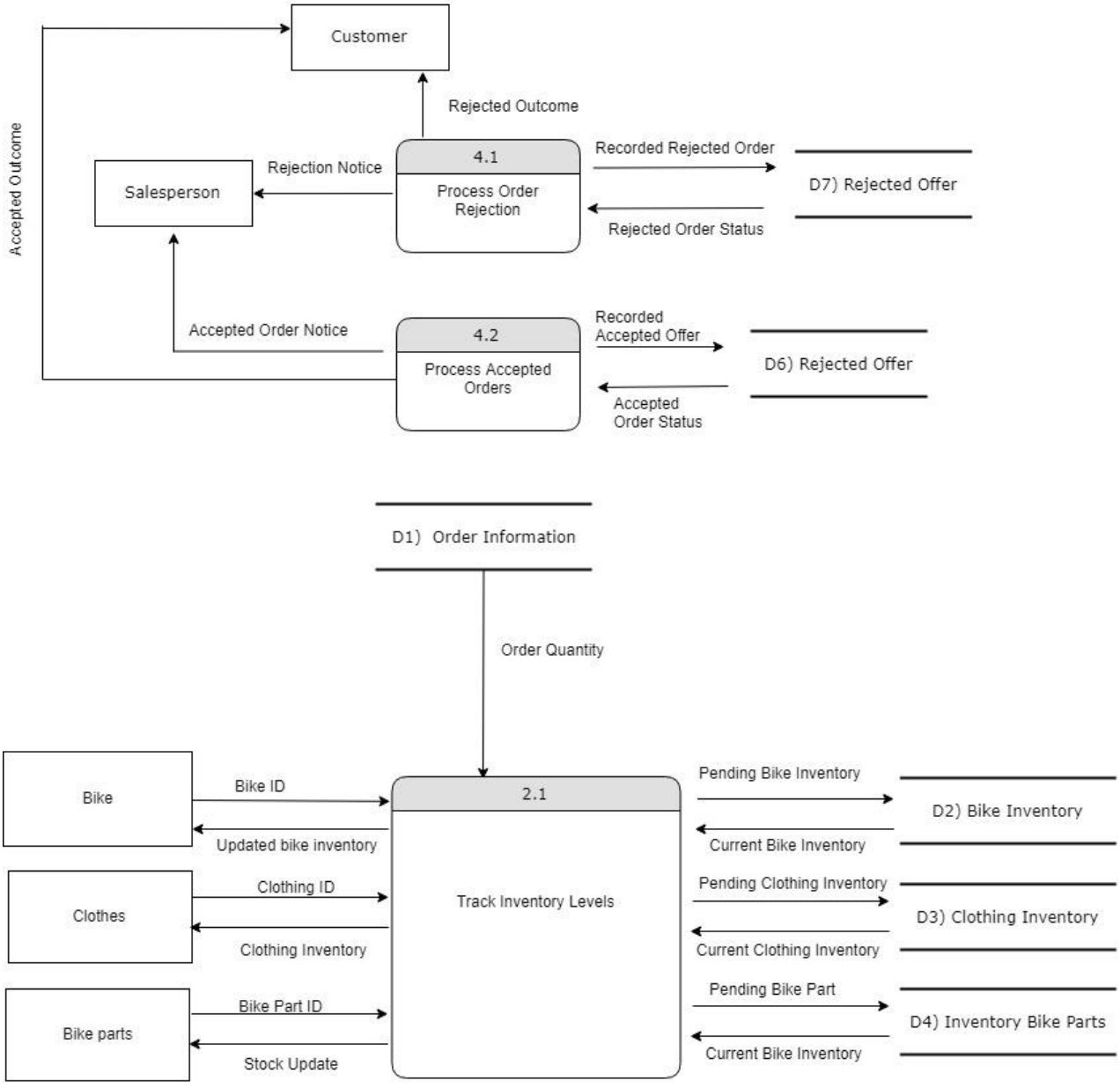
Context Level Diagram



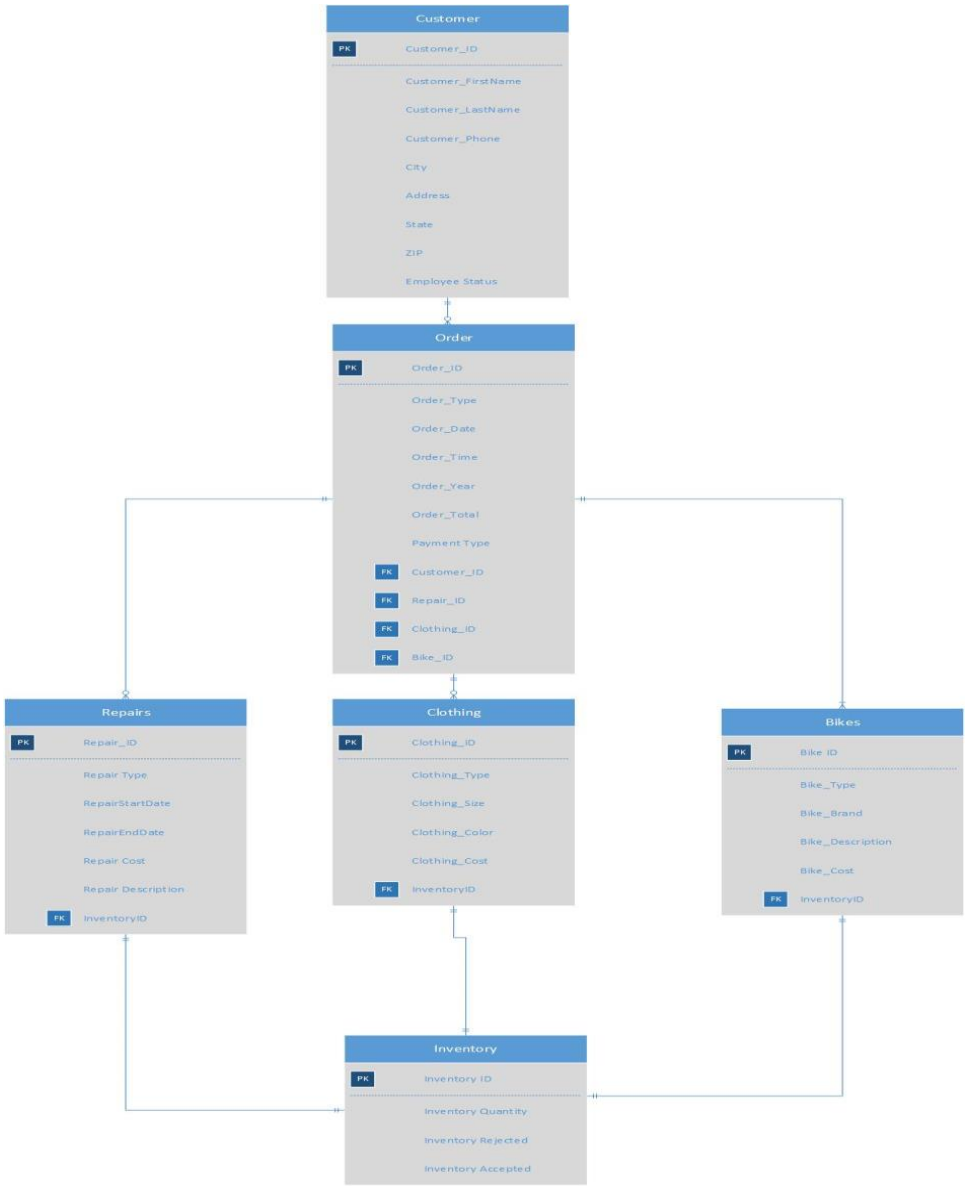
Level 0 Diagram



Level 1 Diagram



Entity Relationship Diagram:



Design Phase

<In Progress>

Alternative Matrix

Project Alternative Matrix for System Acquisition Strategy

Evaluation Criteria	Weight (Importance)	Alternative 1: Development of the entire Systems In-House	Score:	Weighted Score	Alternative 2: Outsource operations to another company	Score	Weighted Score	Alternative 3 Developing part of the system in-house and using pre-packaged software	Score	Weighted Score
Technical Issues										
Familiarity with Technology	15	Requires high level of familiarity with technologies and availability of resources	2	30	Minimal need for technical skills	4	60	Moderate-High level of familiarity with technology for the inhouse system	3	45
Time Frame for installation	15	Lengthy development life cycle for installing the system	1	15	System can be completed and running a shorter period of time	4	60	Moderate to long time frame	3	45
Users ability to learn in-house skills	10	Users will have to be taught how to use the system to its fullest	2	20	Skills not needed	3	30	Some amount of skill is required	3	30
Economic Issues:										
Cost	15	The number of features and functionality will affect the cost.	2	30	Average or expensive cost.	2	30	Costs can vary	2	30
Time Frame for Financial Profit	15	Lengthy installation can delay operations or have unexpected costs	1	15	Shorter implementation times result in profits coming in earlie	5	75	Moderate to long time for financial profit	3	45
Organizational Issues										
Level of customizability	10	The system should be customizable if it is being developed in-house	5	50	Minimal customization functions	3	30	Moderate customizability	2	20
Level of Control	10	The company should have a high level of control over its assets and how the system functi	5	50	Very little control	1	10	Moderate level of control	4	40
Support for System	10	Low-Medium level of support is needed if the technical expertise is there.	2	20	High level of support should be available	5	50	High level of support for the software, Medium support for in-house systsem	5	50
Total:	100			230			345			305

Using Excel, an alternative matrix was created to determine the best acquisition strategy the company should use. The best acquisition strategy would be to outsource the systems to another company because the organization's goal is to prioritize generating profits in the three-year time frame. Considering the technical expertise at the company is low, it is better to have another vendor that is more experienced to implement and maintain the system.

Hardware & Software Specifications for a virtualized n-tiered Client-Server Architecture

	Standard Client Computer	Web Server	Application Server	Database Server
Operating System	Windows 10	Windows Server 2016	Windows Server 2016	Windows
Software	• Runit RealTime Cloud POS • Chrome, Edge, FireFox • MalwareBytes Premium	Apache HTTP Server	Oracle IPlanet Web Server	Oracle Database
Hardware	• Intel i3-8100 • 256GB SSD • 8GB of RAM • 20 inch monitor • Trusted Platform Module	Virtualized along with the application server and data base server.	Virtualized along with the application server and data base server.	• AMD Epyc 7451 or Six Core Intel Xeon • 20 TB of hard drives configured in Raid 1+0 • 128GB of ECC RAM
				Backup Storage: 20TB
	Brother 8900CDW Printer			
	Barcode Scanner			
Network	Broadband internet	1000 mbps ethernet	1000mbps ethernet	10 gigabit ethernet