ABC CAR RENTALS SYSTEM

01 - Business Case Report:

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1. Executive Summary

Car rental businesses provide vehicles and additional automobiles for hire at a payment, normally charged either on an hourly otherwise a daily basis. Because of the suitability of moving around with a vehicle, car rental business is booming because they're rising demand for vehicles for hire. For individuals that own a car might use car rental services when their automobiles broke or waiting for insurance clearance while for those that do not own a car may need to use a hired vehicle to get to their destinations moderately than using public transport. For this reasons, vehicles hire business is growing, most car rental companies now have multiple outlets in various capitals, and hence the need to have an ingenious and in-built system that car-hire companies can use to achieve staff, vehicles, drivers, and customers. This project entails a car hire system that can be used by small, medium, or large car hire organizations. The aim of this report is to declare a proposed business case for developing a new cloud based integrated system which should address each and every operation of XYZ university ABC Car Rental System.

1.1 Issues

The car rental service entails providing automobiles for temporal use over a specified duration. Individuals may need this service to support them get around even though they certainly not have access to their car or costumers do not own a car at very. Whoever needs this service, has to remain in touch with a car rental business and contract out for the

vehicle of their likings. The car rental system will increase client retention and make it easy to cope staff and vehicles (Lee, & Lee, 2015)

According to Lee & Lee (2015), technology has advanced and now internet penetration is more than ever. Currently, individuals can access virtually everything in the comfort of their households. Online retail giants like Alibaba.com, Amazon.com, etc. now have purchaser across the globe. Customers place a demand from anywhere and they have sent to the customers' doorway. Banks now use e-banking and m-banking that permit their customers to contact almost every facility of the bank from anyplace. Car rental business also must follow suit and take help of the existing technology and oblige more customer, henceforth increasing their trades. The car rental system is intended and established to offer the amenities listed below:

1. Boost car rental business process: The car rental system will permit business to enlarge their reach to a universal market relatively than restraining themselves to their local market.
2. Online car reservations: This will allow the client to select accessible vehicles and reserve prior to their predictable pick-up period.
3. Registration of customers: This is a portal where customers key involves their specifics and also allows the car hire management to display customer transactions and use them to deliver customized service and proposals
4. Group booking: This section will allow customers to make reservations for automobile to be recycled by a crowd in the case of corporate meetings, weddings or any other event.

1.2 Anticipated Outcomes

• To develop a car rental system that will allow customers to register and hire cars online by the start of 2019/2020 business year.

• To develop a car hire system that will simplify staff and vehicle management for a car rental company by the start of 2019/2020 business year.

• To develop a car hire system that will make it easy for customers to rent a car and track their pick-up and return dates by the start of 2019/2020 business year.

The major advantage is new system will eliminate batch-file transfers and entering data into multiple systems manually due to it is an integration system. Also, since the cloud-based system is a software as a service approach it will not need to allocate a hardware cost anymore instead of initial Machine and network cost. Customer Satisfaction will start too grown again as well.

1.3 Recommendation

Functional requirements are those applied to exhibit how the internal system structural design works to connect the overall systems objectives. This too demonstrates subsystems with the leading car rental system as well as the reports of each phase. This entails what tasks the systems must execute, which documents the system have to hold, methods involved, and the appropriate user interface. The functional car rental system requirements are:

1. Registration of customers: The system will allow new customers to register online as users and automatically generate a membership card.
2. Reservation of vehicles online: Customers should clearly create a car reservation from a secluded location.
3. Automated database modernizing based on real-time automobile reservations: The system will automatically update the database concerning cars hired, cars reserved, available cars, etc. each time a customer reserves a vehicle or every time a customer returns it.
4. Customer feedbacks: The system should send relevant SMS notifications regarding their reservations as well as allowing customers to leave feedback about the service.

Non-Functional System Requirements

Non-functional requirements offer a demonstration of exactly how the system presents its functional requirements.

1. Security: The car rental organization should ensure the highest degree of integrity and security of the data stored by the system. The system should merely allow authorized individuals to access the data beyond a secured page through which administration users or customers themselves access and enter their password and username to login and view users' page
2. System response time and performance: The car hire system is expected to have a high-performance rate when executing users' inputs. For complicated tasks, the system should respond within 50 minutes and respond within 20 seconds for light tasks.
3. Handling of errors: Errors should be at their very minimal and whenever an error transpires, a user should be notified by the system through displaying the error message that will help the user to continue with normal process. Also, the system ought to validate the users' inputs before moving to the next steps or updating the database.
4. System availability: the car rental system should be available 24 hours, 7days of every week in 12 months of the year. In a case of unavoidable circumstances that lead to system malfunctioning, it should be restored within 48 hours. System restore should be done as soon as possible to ensure that business resumes as usual and business processes are not severely affected.
5. Easy to use with the level of knowledge of the target market users, the system interface should be simple but quality to make it easy to comprehend and hence require less training and learning efforts.

1.4 Justification

The advancement in Information Technology and internet penetration has greatly improved a variety of business processes and communication among companies (services provider) and their consumers of which car rental industry is not left out. This Web Form Car Rental System is developed to deliver the resulting services:

Enhance Business Processes:

To be capable to use internet technology to design the rental company to the overall world instead of reducing their services to their local domain alone, hence increase their return on investment (ROI).

Customer's registration:

A registration portal to maintain customer's details, supervise their transaction and used similar to offer better and expand services to customers.

Online Vehicle Reservation:

A tool beyond which customers can reserve available cars online preceding to their expected pick-up date or time.

Group bookings:

Allows the customer to reserve room for a group in the scenario xof weddings or corporate meetings (Event management)

2. Business Analysis Team

Customer

Register as member: This use case describes the activities of the customer to register online and become a member. Customer's details are required as part of the registration. Login detail is automatically sent to the customer after successful registration.

Make reservation: This use case enable customer to search and make reservation. Non-register customer will be directed to register before their reservation can be confirmed. Notification is automatically send to the customer after the task is completed

Return car: This use case describes the event of customer returning the car borrowed, the use case extends "process rental" use case from the staff actor.

Give feedback: This use case is used by the customer to provide feedbacks/comment to the company; a confirmation notification will be sent to the customer once a feedback has been submitted.

Staff

Add new car: This use case is used by the staff to add new car to the company's fleet database. Staff will need to login to activate this use case.

Update car details: This use case is used by the staff to edit and modify car details whenever there is new renewal (insurance, road tax). It allows the company to keep up-to-date record of their fleet.

Reply to customer's feedback: This use case describes the event by which staff sends reply to customer's earlier feedback. It depends on `give feedback' use case from the customer.

Process rental: This use case described the event by which staff updates the system when customer pick up or when returning car.

Admin

Add new staff: This use case describes the event by which Admin add new staff detail to the company's staff database. It is invoked whenever a new staff join the company.

View report: This use case is used by the Admin to view transaction report

3. Problem Definition

3.1 Problem Statements

A car rental is an automobile that knows how to be used temporarily for a fee during a specified cycle. Obtaining a rental car facilitates citizens get around in spite of the fact they do not have contact to their own personal vehicle or don't own a vehicle at all. The individual who requires a car must get in touch with a rental car company and contract out for a vehicle. This system increases customer retention and simplify vehicle and staff management

3.2 Organizational Impact

- Customer database entails all the information regarding a customer with, Log-in ID, Log-in Password, Name, Age, Driver License Number, Corporation, and billing information.
- Car database consists all common information of the available cars and cars auctions, miles, open date for instance car brand and model, passenger capacity, etc.
- Reservation database contains every part of the reservations the auto rental company have. The info includes date to pick up car, date made reservation, customer's name, and reservation number.
- Lease database contains all the leases the auto rental company have. The information includes date, customer, rental plan, accident insurance option, Loss Damage Waiver option, Gas Charges option, and completion status.

3.3 Technology Migrates

User Interfaces: All the users will look at the identical page when they input in this website. This page requests the users a username and a password. When being authenticated by accurate username and password, user will be redirect to their matching profile where they can do various events. The user interface will be straightforward and consistence, using language commonly recognized by expected users of the system. The system will have simple interface, consistence with universal interface, to reduce need for user training of infrequent users.

Hardware Interfaces: No additional hardware interfaces are necessary. The system will use the traditional hardware and data communication technology. This incorporates, but not limited to, board network connection at the server/hosting site, network server and network management tools.

Application Interfaces: OS: Windows 7, Linux Web Browser: The system is a web-based application; clients need a modern web browser for example Mozilla Firebox, Internet Explorer, Opera, and Chrome. The computer must obtain an Internet connection in demand to be capable to gain access to the system.
Communications Interfaces: This system utilizes communication resources which incorporates but not restricted to, HTTP protocol for communication along with the web browser and web server and TCP/IP network protocol with HTTP protocol. This application forces contact with the database that manages all the booking information. Users can communicate server side through HTTP protocol with means of a function that is called HTTP Service. This function allocates the application to utilize the data retrieved via server to fulfill the request fired by the user.

4.1 Project Description

This system will permit a car rental company to approve rentals by advance reservation; the company will additionally accept customers who stroll in to rent out a car if it is offered. At the end of every single day, returned cars are appointed to the bookings for the resulting day. If more automobiles are demanded than available cars at several of the outlets, the branch manager may ask for optional extra cars from other outlets. Cars rented from of the establishment's outlet may be put back to any other outlet. The renting outlet must guarantee that cars are returned as per the pick-up plus return dates shown as per the car rental agreements are stated. Whenever a car is returned to a separate outlet other than the renting outlet, the latest outlet is transferred ownership. Just one booking is allowed per day but the client may make reservations of different cars for upcoming event. There is an exemption when a customer is reserving for an event. During this case, the customer must give details of at least one person who will be responsible for each car. Customers can give feedback about their experiences. On the other hand, the organization maintains a record of all rental and bad experiences examples late return, damaged cars, or payment problems. This information informs the judgment of renting a car to customers in the future.

4.2 Goals and Objectives

- To produce a web-based system that make available to customer to register and reserve car online and for the business to successfully operate their car rental company.
- To alleviate customer’s chore whenever they require to rent a car**.**

4.3 Project Performances

This section illustrates system inputs and outputs as entities co-operate with the car rental system.
Member Registration: The customer enters the username and password, which provide a chance for the system to verify whether at hand are an existing user with combining credential. If yes the user is logged into their current account and if not the user is required to verify the username and password or request for a new password. The user is also given a opportunity to create an account qualification is are not registered. The system checks username, email password, and phone numbers as mandatory fields.
Car Reservation: Users must be logged in to access this page. On this interface, customers choose a pick-up location, pick-up date, pick a return location, return dates, choose a vehicle, and submit payment details. Upon send back the vehicle users obtain an email confirming that they must return their rented car. This email invites them to leave a review regarding their experience. If the customer owns a mobile app, they get prompt notification about this on their phone and can leave a review/comment instantaneously. The customer picks the car from the particular outlet on the set pick-up date.
Customer Feedback: Customers log in to their accounts and select their rentals record with awaiting review. They will be notified to leave feedback which is stored beside with the car rental history. In addition, the staff will get a notification regarding the customer’s feedback, when an individual of the staff replies to the customer’s feedback.
Rental Car Return: Customer returns a car to the designated rental shop, the official verifies whether the car is in excellent condition and confirms that the customer has returned the car. The system checks if the return date is outstanding and updates the database. This creates the car available for a new customer to request.

Report Viewing: The admin user logs in the system and identifies the report he/she intends to view, the system regains the report and displays the report. The user will have the preference of saving it as a pdf or printing.

4.4 Project Assumptions

Users	Characteristics	Trained
Admin:	Admin can login to the system. Verify the car information database. Generate price strategy. Handle the payment system. Finalize the order. Cancel the order.	Trained by Car Rental Owner and Maintenance Manger
Employee:	It updates the database. Give information to the customer about the car. Provides the alternatives. Maintain contacts.	Trained by Admin.
Maintenance Manager:	It checks for the maintenance. **Trains to give** to **other** the maintenance **employees**. **Trains** information to the admin. Update the database.	School Degree
Customer:	Customer can login to the system. Visit the website. Place the order. Cancel the order.	Not Trained

4.5 Project Constraints

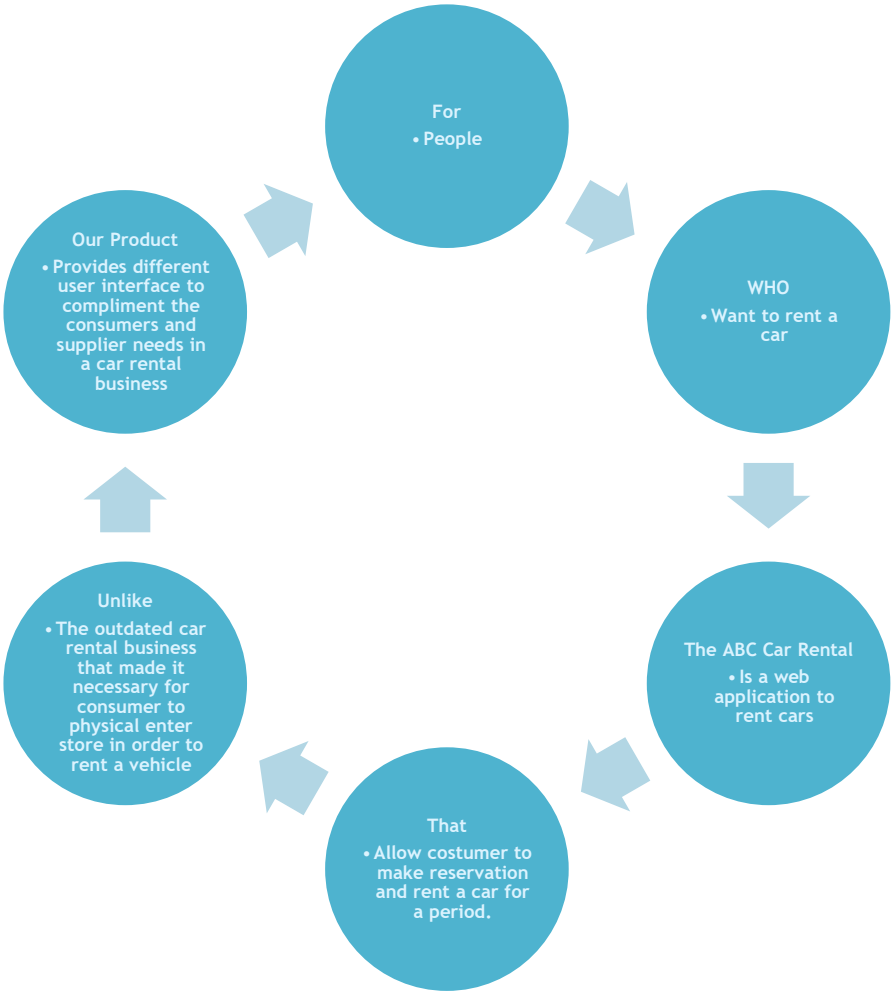
- Each driver assigned to drive the rented car should have a valid driver's license
- Every permitted driver of the rented car must be present insured to the bare minimum level required by the law of the state or country where he/her will be driving.
- All vehicles available for rental be required to meet the minimum local obligations for emissions, and mechanical conditions for each respective jurisdiction.
- All due taxes must be collected for the duration of rental charge collection at the drop-off shop.

4.6 Major Project Milestones

a) Meeting with stakeholder: Meetings with the engineering team, company directors, current employees, and customers to get a full image of the attributes needed for the system to work efficiently. These meetings can also be accomplished from time to time when the project is in development. This is estimated to take 20 days with an estimated cost of $2,000.
b) Design mockups and models: this should be done to ensure all stakeholders have a feel of how the system will look. This is estimated to take 14 days at a cost of $1,200.
c) Database creation: This is estimated to take 15 days at a cost of 2,000.
d) Creation of employee software: Estimated to take 23 days at a cost of 5,000.

e) Creation of the website: Estimated to take 31 days, at a cost of 2,500.
f) Testing the system: Estimated to take 14 days at a cost of $600.
g) Final reporting: Estimated to take 7 days at a cost of $400
h) Training: Estimated to take 10 days at a cost of $950.
i) Launching the system and going live: Estimated to cost $3,500 and will take 1 day.

Product Vision:



THIS IS FOR USERS THAT ARE LOOKING FOR A CAR RENTAL THAT IS EFFICIENT AND SIMPLY TO COMPLETE. THE ABC CAR RENTAL COMPANY IS A WEB APPLICATION CREATED FOR USERS, MANGERS, EMPLOYEES, AND ADMINS TO COMPLETE SIMPLE WORK TASK. THAT ALLOWS EITHER COSTUMER TO MAKE A RESERVATION, EMPLOYEE TO UPDATE CUSTOMER FEEDBACK AND EMPLOYER TO GATHER BIWEEKLY REPORTS ON THE BUSINESS. UNLIKE THE OLD BUSINESS STRATEGY, OF KEEPING ALL FILES IN PAPERWORK FORM AND HAVING COSTUMER PHYSICALLY WALK IN AND FILL UP PAPERWORK TO RENT A CAR. OUR PRODUCT SAVES ALL DATA ENTERED TO USERS' PROFILES AND HELP PROVIDE DIFFERENT USER INTERFACE ACCESS TO MEET THE NEEDS OF EVERYONE WHILE ON OUR WEB – BASED FORM.

Rules of Behavior:

1. All team members will treat each other with respect at all times.
2. All team members will do their best to get the job done.
3. All team members should contribute in team decisions.
4. Team members should help each other get the job done.
5. Communication is so important between all team members.
6. Team member should listen to each other to implement the best idea.

Communications:

1. We will hold regular daily meetings in the team room at 8am each work day.
2. All team members must attend the meeting or notify the manager before.
3. Meetings will follow an agenda prepared by the leader or approved by members a day before the meeting.
4. Only one person will speak at a time.
5. No one will check their phone during the meeting.
6. All new tasks should be discussed at the beginning of the day.
7. Each team member should write a report at the end of the day and hand it to a manager.

05 - User Personas:

Personas	Name	Description	Goal
Client	John	Works as a developer in a mid-size software company. He has a degree in IT. Due to extended working hours, he has limited time for shopping, so he does it online	Needs to do the shopping quickly and efficiently
Administrator	Ann	She is an administrator of the online store system. She is experienced IT professional	Needs to be able to supervise the system condition and user's behaviours
Manager	Tim	Is a business professional and owner of the online store? He has a degree is business and has working knowledge of IT system. He is responsible for ordering and managing products in the online store.	Needs to monitor sells and products easily as well as print reports needed for the accounting.

06 - User Stories:

User	Story
Customer	should be able to search available vehicle information
	should be able to make and/or cancel reservation online
	should be able to update personal information
	should be able to make payments online
	should be able to check reservation status
Technician	should be able to update vehicle condition before/after rent
	should be able to check customer information
	should be able to report damage
Manager	should be able to manage reservation(search/update/cancel)
	should be able to manage staff and technician account
	should be able to manage bill
	should be able to manage vehicle (add/remove available vehicle)
	should be able to manage customer information
Staff	should be able to check the reservation and customer information
	should be able to generate bill

07 - Story Priority:

User	Story	Days	Priority (1-15)	Story Points	Days if finish in Sprint 1	Working Hours
Customer	should be able to search available vehicle information	2	1	5	0.8	6.4
	should be able to make and/or cancel reservation online	4	2	3	1.6	12.8
	should be able to update personal information	5	3	5	2	16
	should be able to make payments online	7	4	13	2.8	22.4
	should be able to check reservation status	6	5	13	2.4	19.2
Technician	should be able to update vehicle condition before/after rent	7	6	13	2.8	22.4
	should be able to check customer information	4	7	3	1.6	12.8

	should be able to report damage	2	8	5	0.8	6.4
Manager	should be able to manage reservation(search/update/cancel)	2	9	2	0.8	6.4
	should be able to manage staff and technician account	5	10	8	2	16
	should be able to manage bill	2	11	1	0.8	6.4
	should be able to manage vehicle (add/remove available vehicle)	1	12	2	0.4	3.2
	should be able to manage customer information	1	13	1	0.4	3.2
Staff	should be able to check the reservation and customer information	1	14	3	0.4	3.2
	should be able to generate bill	1	15	1	0.4	3.2
Total		50		78	20	160

08- Product Backlog:

Backlog	**Priority**		
	High	Medium	Low
Should be able to search available vehicle information	X		
Should be able to make and/or cancel reservation online	X		
Should be able to update personal information			X
Should be able to make payments online	X		
Should be able to check reservation status		X	
Should be able to update vehicle condition before/after rent			X
Should be able to report damage			X
Should be able to manage reservation (search/update/cancel)	X		
Should be able to manage staff and technician account		X	
Should be able to manage bill		X	
Should be able to manage vehicle (add/remove available vehicle)	X		
Should be able to manage customer information			X
Should be able to check the reservation and customer information		X	
Should be able to generate bill		X	
Should be able to check customer information			X