

User and systems requirement specification.

Client: Hire_From_Us

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Executive summary

This is a systems requirement for Hire_From_Us. This document will layout the functional and nonfunctional requirements specified by the client. This document will also act as reference for the developers working on this project.

Contained within this document is an analysis of the current system used by the client. It will identify the problems with the current system and suggest enhancements inline with the customers requirements.

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Background

This report is the result of analysis of Hire_From_Us's current systems. Data about the current systems was collected in the form of an interview with the CEO (see Appendix A), observation of the car collection and returns procedures and collection of the relevant documentation (see Appendix B).

Hire_From_Us currently use a paper based system that requires the sales assistant to manually fill in the paperwork for the customer. The collection process takes 15 minutes to 30 mins on average. During peak periods a queue of customers can easily appear.

Current Processes

The current car collection procedure:

Then the sales assistant gets the folder that stores the available cars and picks an appropriate car with the customer.

A photocopy of the customers licence is also take at this stage and checked to see if they are eligible to rent a car based on the company's rental policies. The driving licence must be valid in order to continue the process.

The sales assistant then fills in section one of the rental agreement with the details of the car to be rented. The customer is then asked to read over the car details to check they are correct and also asked to read the terms of the rental agreement. If the customer agrees to the terms they are then asked to sign the agreement. The sales assistant then needs to check that all details are correct and present then fill in their details and sign the last section.

At this point a deposit is taken and the keys are handed to the customer along with a photocopy of the rental agreement, the original is then filed away with the

photocopy of the customers licence and the sheet of paper storing the rented cars details.

The current car collection return procedure:

The customer returns the keys to the sales assistant, the assistant then checks that the car is in the same condition as when it was checked out. They then make a note of the odometer reading and the amount of petrol in the tank. The car is then handed over to the cleaning crew.

If the car has sustained any damage it is recorded so that any repair costs can be claimed from the insurance. Any missing fuel is also recorded and cost calculated to charge the customer.

The extra charges are recorded on the returns along with the odometer reading. Both the sales assistant and the customer then need to sign the form.

A photocopy of the form is given to the customer and the original is stored with the rental agreement and customer details to be archived in the archiving filing cabinet.

Once the car is cleaned the car detail sheet is added back into the available car folder ready to be rented out again.

Current Data: Inputs

Rental details

- Car Rental Rate (weekly/daily)
- Check out date and time
- Due back date and time
- Customer signature
- Sales assistant signature
- Date

Rental Car details

- Make
- Model
- Licence plate number

Customer details

- Card number
- Card Holder Name
- Card security code (Cvv number)

- Primary driver's name
- Primary driver's date of birth
- Primary driver's phone number
- Primary driver's address
- Primary driver's licence number
- Primary driver's licence expiration date

Current Data: output

- Receipt in the form of a copy of the rental agreement.
- Receipt in the form of a copy of the return from.
- Total cost of rental for the given period.
- Amount of commission earned by sales assistant.

Current Interfaces

The sales assistant needs to interact with the photocopier to make a copy of the blank rental agreement form and returns form. They also need to make a copy of the filled in forms for the customer. They also need to make a copy of the customers driving licence.

The sales assistant uses folders and the filing cabinet to store documents.

The sales assistants use printed forms to collect necessary data from the customer.

Problems

Currently a lot of the setup work is put on the sales assistant taking time away from serving customer to handle administration tasks like finding documents, moving documents and preparing blank forms.

With the current system the sales assistants are required to manually copy information from one document to another. Duplication of data slows down the process.

Currently customer data is not stored for future re-use. The current system requires returning customers to go through the whole process from the beginning.

Because there is a lot for the sales assistants to concentrate on mistakes can often occur, there is currently no validation of the data entered into the forms. Fields can also unknowingly be left empty causing problems later on in the process.

Files can be misplaced or filed incorrectly. Loss of data can cause severe delays in service and damage to the reputation of the company. If a car's detail file sheet is misplaced a car could go un-rented for a long period of time causing loss of potential profit.

With the current system it is difficult to analyse previous rentals to notice patterns that could prove useful in influencing future purchasing decisions. For example if the CEO would like to expand his fleet of cars it would be useful to see what cars his customers prefer to rent.

The current system also does not perform any of the necessary calculations on behalf of the company. For example, the total cost of renting the car is calculated by

multiplying the rental rate of the selected car by the number of days the car is rented out for. Currently these calculations are done on a calculator while the customer waits. This is a time consuming process that is prone to mistakes.

Other potential calculations that could be carried out by a computer system include the management and administration tasks, like calculating the sales assistants commission on sales and the total monthly profit from all sales.

Requirements

The customer Hire_From_Us needs a self contained solution to aid the sales assistance with the collection of customer details and the managements of the fleet of rental cars. The system is made up of a combination of hardware and software.

- The new system will need to speed up the current checking out process.
- Keep customer data securely ready to be reused.
- Reduce human error.
- Make analysing previous rental and sales data easily available for future decisions.

Functional requirements

Users need the ability to enter new customers details into the database.

Find existing customers in the database and use the stored data.

The ability to edit customers details and delete them if necessary.

The ability to add new cars and details to the database.

See a list of available cars.

Edit existing car details and delete them if necessary.

Select a car from the available cars.

Calculate the total cost of the rental for the given period.

Print out a rental agreement with all the relevant information.

The manager should be able to see how much commission each of the sales assistants needs to be paid.

The manager needs to be able to view a break down of previous sales data in an easy to read format that can be presented to decision makers.

Non-Functional requirements

Maintainability

The customer will need the ability to maintain the system with minimal help from external techsupport. An administration login should be provided so that tasks like adding new users to the system or keeping the database of available cars upto date with new cars and removing old cars.

Usability

The new system would need to be intuitive and recognisable to the current sales assistants. As minimal extra training will be given to staff.

Performance

The system would need to support at least two simultaneous users as Hire_From_Us usually has two sales attendants on shift at any one time.

The new systems aimst to reduce the check out time to below ten minutes.

The database would need to track and store the status of a fleet of at least 50 cars. It would also need to securely store records of previous customers.

Site adaptations

The customer currently has no computer systems on site.

For this project each sales assistant on duty will need a workstation equipped with a screen, keyboard and mouse suitable for data entry. The workstations will also need to be connected to a printer so that they can print off rental agreements and receipts.

A server capable of hosting the central database will need to be installed and networked with each of the workstations.

Platform

The computer systems installed will be running windows with the ability to run java code. Any supplementary software must be compatible with the windows operating system.

Security

As the company is planning to hold customers details like names addresses and card details, the system must securely store this data to conform to the data protection act.

Physical measures to protect the data must be put in place. For example the server's hard drives should be secured with a locked case. Access to the server itself should be limited by placing it in a locked room perhaps. Only authorized devices should be plugged into the local area network.

Software measures like user logins should also be implemented, to limit who can access customer data. The database itself should also be password protected so that unauthorized software cannot gain access to it.

Operational security should also be considered, staff should be careful not to leave workstations logged in with their details and keep all user passwords securely guarded.

Processes

The system needs to be able to:

- Remove cars that are rented out from the list of available cars automatically.
- Populate the required information on the rental agreement from the database.
- Calculate the commission to pay each sales assistant.
- Calculate the total cost of rental over a given period
- Add up the profits from the monthly sales to be displayed as sales data.

Interface

Hardware interface

The customer will require at least two workstations for data entry.

A central server to store the database and to act as the print server.

A printer for printing rental agreements and receipts.

A networking switch to router network traffic.

All of the terminals will need to be connected with networking cables.

Software interface

The customer will require a custom built software solution to aid the sales assistants with the task of data entry. The software should provide a graphics user interface for the sales assistance to interact with for ease of use. The program should include validation of any data entered.

User interface

The Graphic user interface (GUI) presented to the sales assistance needs to mimic the look and layout that is familiar to them. Based on the forms collected during the analysis the layout should be similar.

The GUI should be easy to use and clear to read.

It should be clear what fields are required and prompt the user when required fields are missing

Enhancements

The new system could present a list of cars available to rent that can be filtered by vehicle type or customer requirements. For example if they needed a car fitted with a gps.

The database could also add the ability to track dates of mot and tax renewals.

It would also be beneficial to add the ability to track key maintenance tasks like services, oil changes and tyre replacement.

Conclusion

Based on the research conducted during the analysis it is clear that replacing the current paper based system at Hire_From_Us would speed up the check out process greatly increasing the efficiency of the sales staff. The new system would

also help to prevent human error, preventing damage to the reputation of the company.

The new system would also aid in future decisions and potentially save the company money in the long run.

Bibliography

<https://www.drive.sg/blog/guide-on-how-to-rent-a-car-in-singapore-2>

Appendix

A - Rental agreement based on template found here:

<http://www.atyourbusiness.com/contract/car-rental.php>

B - Questionnaire from interview with Hire_From_Us ceo

Hire_From_Us - Rental Agreement

Section 1.1 - Rental car details

Car Make: _____ Model: _____

License Plate Number: _____

Odometer Reading: @ Check Out _____

Gas Tank Reading: ☐ Full ☐ $\frac{3}{4}$ ☐ $\frac{1}{2}$ ☐ $\frac{1}{4}$

Section 1.2 - Rental details

Car Rental Rate: £_____ / weekly or £_____ / daily

Vehicle Check Out: ____/____/____ @ ____: ____ AM / PM

Vehicle Is Due Back: ____/____/____ @ ____: ____ AM / PM

Section 2.1 - Customer details

Driver's Name: _____

Driver's phone number: _____

Home Address: _____

City: _____ Postcode: _____

Driver's License Number: _____ Expiration: ____/____/____

Date of Birth: ____/____/____

Insurance Company: _____ Policy Number: _____

Credit Card: ☐ Visa ☐ Mastercard ☐ American Express ☐ Other:

Credit Card Number: _____ Name on the Card: _____

Cvv number: _____

Expiration Date: ____/____/____ Security Code: _____

Additional Driver: _____

Home Address: _____

City: _____ Postcode: _____

Driver's License Number: _____ Expiration: ____/____/____

Date of Birth: ____/____/____

Section 3.1 - Agreement details

Only the person(s) that are listed on this Car Rental Agreement and above the age of twenty-one may drive this vehicle. The above mentioned Car Renter is hereby responsible for all collision damage to the vehicle regardless if someone else is at fault or the cause is not known. The Car Renter is fully responsible for the cost of any repair up to the value of the vehicle. The Car Renter's Insurance may cover all or only part of the financial liability for the rented vehicle. Car Renter should check with their insurance company regarding their coverage and what they are and are not liable for. If there is no breach of this contract the Car Renter and any authorized driver is provided liability insurance and is limited to the minimum financial responsibility as required by state law. Liability Insurance will only be in excess over any and all additional collectible insurance. The above mentioned Car Renter hereby waives all uninsured and underinsured motorists, no fault and any other optional additional coverage. If such additional coverage cannot be waived or excluded then the Car Renter agrees that such coverage will be limited to only the minimum state requirements.

The Car Renter is hereby bound by the terms and conditions of this Car Rental Agreement. The vehicle must be returned to the same location in which it was picked up for rental and on or before the above indicated due back date and time. There will be additional fees due if the vehicle is not returned as specified above. Where it is permitted by law the Car Renter hereby authorizes us to process their credit card information in their name for all Car Rental charges, including the full vehicle value of any vehicle that is not returned to the Car Rental Company, all fines, towing, any court costs, penalties, and or administrative fees that we may incur for parking, traffic and or other violations that may be incurred by the Car Renter during the Car Rental term

period as stated above and to apply any payments made to the charges in whatever order that the Car Rental Company sees as necessary. By signing below Car Renter is also signing their Car Rental credit card voucher.

The individual mentioned above in this Car Rental Contract hereby agrees to fill the fuel tank at the above indicated level upon returning the car. Failure to fill the tank at the prescribed level will result in an additional penalty charge of £20.00 per quarter tank of fuel.

It is the Car Renter's responsibility for all lost car keys and / or a lockout situation.

Section 3.2 - Sign off

I hereby acknowledge that I have read and understood the terms of rental and agree to all of the tems.

Primary Driver

Date

Additional Driver

Date

Sales Assistant

Date

Hire_From_Us - Return form

Damage report:

Odometer Reading: @ Check In _____

Gas Tank Reading: ☐ Full ☐ $\frac{3}{4}$ ☐ $\frac{1}{2}$ ☐ $\frac{1}{4}$

Deposit returned: ☐

Primary Driver

Date

Additional Driver

Date

Sales Assistant

Date

Systems requirement questionnaire

Client: Hire_From_Us

Date: 07/02/2018

Q: Who will need access to the database. Will there need to be different access levels?

A: Only employees will be able to access and modify the database, they will all have the same access rights.

Q: How many sales employees do you have?

A: We currently have 5 sales staff but we would like the ability to expand if necessary.

Q: How large is your fleet of cars?

A: We currently have 50 cars available for rental.

Q: In the current system where is the data currently stored?

A: Currently everything is paper based forms. The forms are filled in and stored in the relevant folders. All folders are stored in the filing cabinet in the office.

Q: What I.T systems have you currently got in place (Hardware and software) and what would your budget be for additional hardware costs needed for the new system?

A: There are currently no computer systems installed in the office. The budget for the entire system is £10,000 (hardware, excluding software development cost).

Q: In your opinion what are the main problems with the current system?

A: The main problem with the paper based system is that it is slow, the way customers and the orders are added to the system by hand means that the customer is also waiting while their details are processed by the sales assistant. There is a lot of copying details from one form to another that takes extra time.

It is also very difficult to look back through previous orders and analyse sales patterns. For example when we need to decide what types of cars we need to purchase to meet demand, it takes a long time to collate the data from previous sales.