Car4U ZW Brief Systems Development Document

Online Automotive Classified Advertising Website

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Overview

This document explains the purposes and design of the online automotive classified advertising system that we consider to be an ideal strategy for buyers and sellers in the automotive industry.

The main aim of this project is to sustainably develop a platform that will connect car buyers to reliable car sellers, as well as reliable reviews and advise on automotive related issues. The idea behind Car4U ZW is customer oriented, aimed to provider a marketplace for buyers and sellers of both new and used cars and other automotive services.

UML was used throughout this documentation to visualise the conceptual system framework design.

Methodology Used

From the beginning of this innovative vision, we adopted an Agile approach to effectively bring the system to life, as we are constantly breaking down tasks, ranking them in order of importance based on each individual tasks' purpose and allowing for quick responses from setbacks during the system development process.

Basically, we tackle all aspects of the system in one goal, starting with one vision and continuously developing it until we reach the end result which is an efficiently functional online food ordering system.

Analysis and Domain Study

The analysis was carried out to identify the business problem domain, to find ways to optimise resources usage and sustainable business development, growth and management that will also add value to the business.

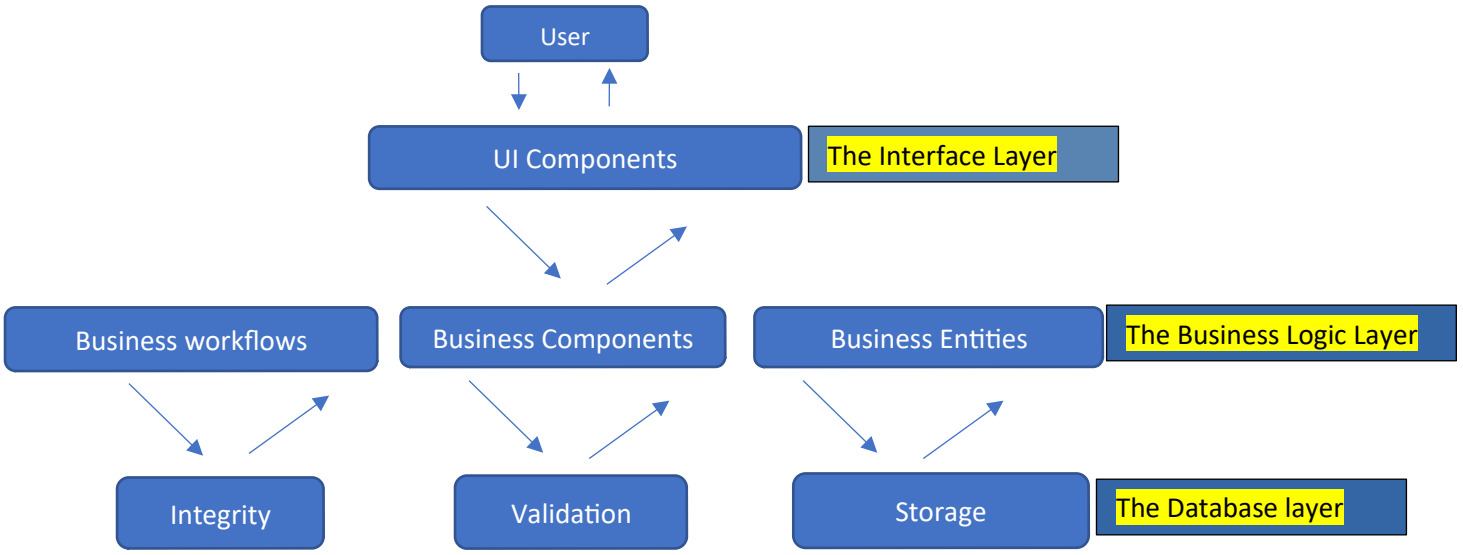
The business problem domain:

From the analysis the following are some of the beneficial outcomes possible from the implementation of this online automotive advertising platform into the infrastructure of Car4U ZW.

- Introduction of newer marketing strategies for Zimbabwean Car Dealerships
- Creating a user friendly interface for buyers and sellers of new and used automotive vehicles
- Brining car buyers to reliable sellers saving them time and mobile broadband data, not having to search and being limited to WhatsApp and Facebook groups.

Architectural Design

Application architecture from our perspective was focused on the client architecture consisting of three (3) layers; i.e. (i.) The Interface layer (ii.) Business logic process layer (iii.) Data layer



The business logic layer is focused on data validation, and the communication between the users and the database. The Database layer on the other hand is focused on the storage and retrieval of the data through the business layer. Hence, relationships between the database and each system user should be efficiently defined for effective system performance, database maintenance, analysis and reporting.

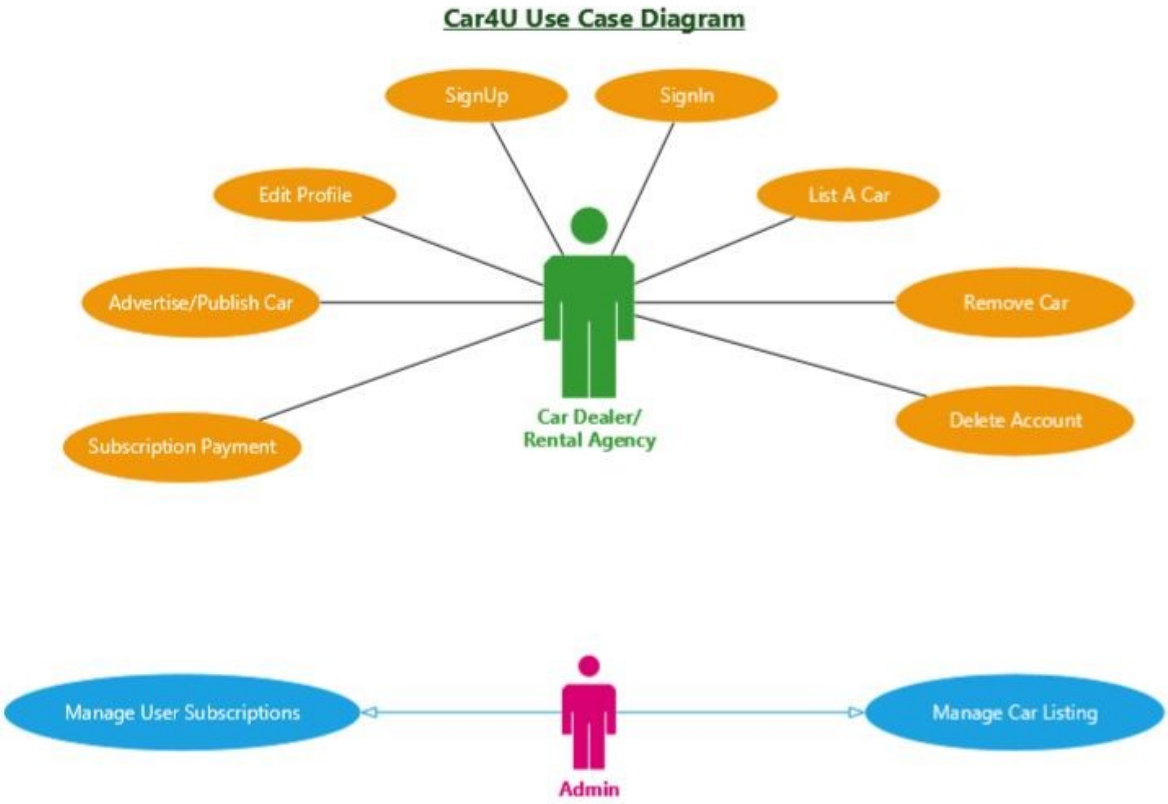
Systems Requirements

- OS specifications: standard Windows 7; Windows 10 for the administrator
- Terminals and servers:
- Storage: still to decide
- Network requirements: WiFi connection
- Any other essential peripherals: Printers/ web browsers
  (all depending on the system integrity with current PILOT system)

Functions and system designs

Design level Use Cases

The following model is explicitly showing how the system interacts with the actors which may be humans or other systems within its domain. The actors' interactions with the system are referred to as the use cases. Due to our agile practices, please note that this design is flexible to change depending on the extension of our scope in the system development process.



The use case narrative serves to provide more in-depth details about the processes and elements involved in each use case. The use case narrative includes (but is not limited to):

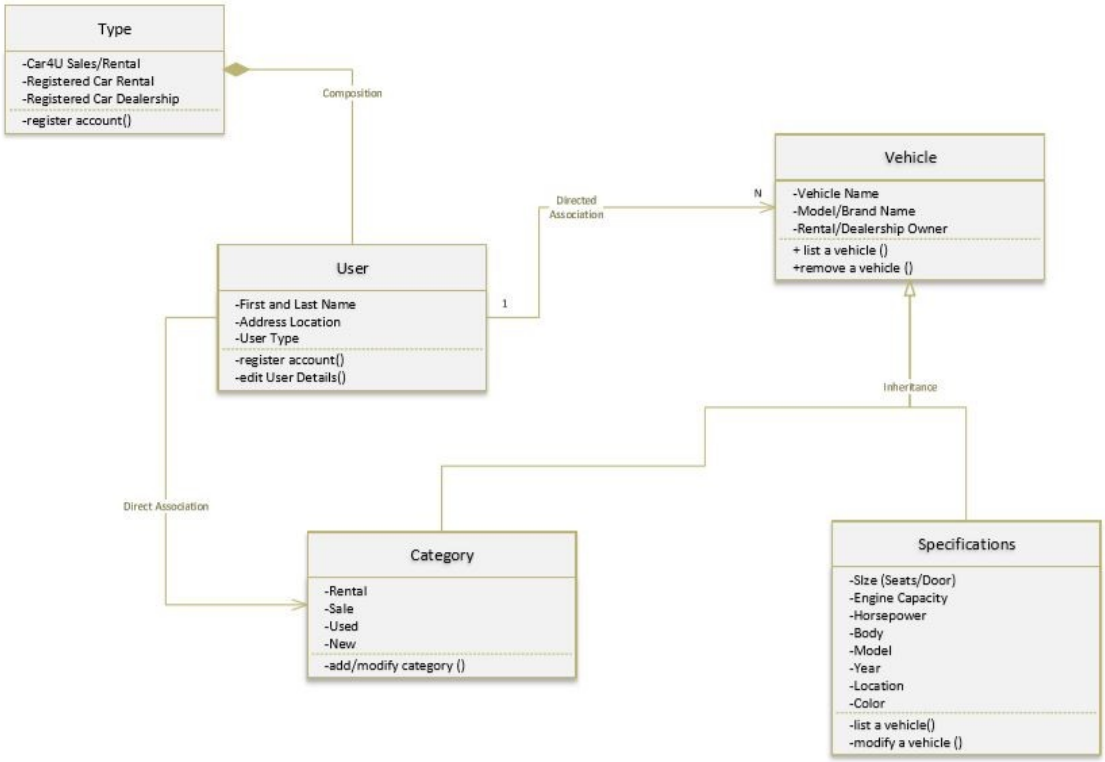
- Use case name: This uniquely identifies the use case
- Brief Description: This provides a description of the use case in simple/informal language.
- Actor(s): This gives a list of the actors (may be human or another external system) that impact the use case.
- Preconditions: This out-lines things that must be true from the very beginning of the process.
- Post-conditions: This out-lines what will be true if the process is successful.
- Main flow: This describes the sequence of actor to system interactions and the resultant behaviour.
- Alternative flow: This out-lines what happens if the process in not successful.
- Extend: Independent optional behaviour as a result of the initial use case.
- Include: This is used to simplify a large use case.
- Author of this narrative: This is simply the name of whoever is the creator of the narrative

Use case name	Sign Up/Sign In
Brief description	Authentication process using confidential credentials to grant the right user access to system features, through individual user account.
Actor(s)	• The Admin; • Car Dealership ; • Online Customer;
Pre-conditions	Valid credentials i.e. email; phone; address
Post Conditions	Access granted to system features
Main Flow	1. Visit domain through browser/ Open App 2. Choose suitable option between Sign In/Sign Up 3. Enter Credentials required 4. Finish process by confirming your authentication option Sign Up/ Sign In.
Alternative Flow	In previously logged in; Visit domain and gain access to account
Include	N/A
Extend	Optional to extend to edit profile information i.e. address, email, phone number
Author of this narrative	Tinashe Jamanda

N.B. AT THIS STAGE OF THE SYSTEM DEVELOPMENT CYCLE DECISION HAS BEEN MADE CONCERNING THE USERS (ACTORS) ACTIVITY, AUTHORITY, AND MAIN ROLES. THE USE-CASES IN THE DIAGRAM ABOVE ARE FLEXIBLE TO CHANGE BASED ON THE AGILE APPROACH THAT WE ADOPTED, WITH GRADUAL UNFOLDING OF THE EFFICIENT SYSTEM DESIGN DURING THIS AGILE SYSTEM DEVELOPMENT PROCESSES.

UML CLASS DIAGRAM

OUTLINING THE GENERIC STRUCTURE OF THE BACKEND DATABASE



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