A Mini Project Synopsis on

Drift Store – A Car Dealership

S.E. - Computer Science and Engineering-Data Science

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CERTIFICATE

This to certify that the Mini Project report on Drift Store has been submitted by Varad Joshi (21107002), Faizan Mahimkar (21107007) and Khushi Chhoker (21107055) who are a Bonafede students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfilment of the requirement for the degree in Computer Science and Engineering (Data Science), during the academic year 2022-2023 in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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Introduction:

Drift Store aims to be a mainstream platform for sales of pre-owned vehicles. This is an end user focused application developed with the aim of providing user with complete control of their experience while collection only required personal details but also providing the option for sharing other data for ease of access to the user. Selling a vehicle on our platform is as simple as signing up and listing a vehicle. That being said, we also care about buyer protection and thus it is mandatory to first get your account verified by providing a government id. It is very easy for your, as a user to request the deletion of all your personal data collected by our service, if you should so wish. The entire application is developed in Java and our server is hosted on AWS. Hosting the server on a popular service like AWS ensures that there will be absolutely no issues with regards to safety of user data.

1.1 Purpose:

It is a known fact that it is very inconvenient to find buyers for any second-hand vehicle. Along with this, it is also difficult for buyers to find a trustworthy seller. This is exactly where Drift Store comes in. We aim to be one of the mainstream platforms for sales of pre-owned vehicles. That being said, it is very much possible for documents to get displaced or lost while second hand sales. To solve this, Drift Store aims to provide the user with the ability to upload these documents to our database and hold it even after the transaction is done if they so wish. We aim to provide aftersales peace of mind to both the parties involved in the transaction. That being said, we also care passionately about user data and end user is always in control; so, if they wish so, there is also an easily accessible option for the user to delete all of their data selectively from our database. A copy of all the data can also be downloaded by the user.

1.2 Objective:

The main objective of Drift Store is becoming a well trusted platform for sales of preowned vehicles. We also aim to provide users with as much control and customization as possible while keeping the application itself easy to use. Basically, easy to use but robots feature at the same time. It is our objective to promote fair trade as well as pre- and post-sale protection for both the parties involved; and taking the stress and fear out of buying and selling pre owned vehicles. This can be achieved by verifying the identity of sellers and keeping record of every transaction at least 30 days post transaction (and more if the user chooses so). We also aim to gain user trust by giving user access to everything we have stored about him/her. As mentioned, a number of times before, users can delete their own data at any given point in time. We do not take responsibility for the transaction related data that someone might have downloaded before the data was deleted off out servers.

1.3 Scope:

Being a completely open-source app, we are quite confident that there will be spin offs of our app, modified to better suite anyone like a local dealership. Even though the app itself is mainly focused towards automobile sales, it is still simple enough to widen the scope and make it a sort of second-hand trading platform for all kinds of items. Most of the modules that are a part of this app are also required for these marketplaces as well. Besides this, we also plan to extend this platform to provide useful insights and knowledge relating to automobiles in the future.

Problem Statement:

Selling and buying second hand vehicles in India is a big headache because of all the documentation and loops involved. It is true that direct seller to buyer usually yields better prices for the pre used vehicle; however, it is near impossible to realistically find a seller in a reasonable amount of time. This makes buying and selling used vehicles a big hassle and even though there are sellers and buyers, both ready for deals, there is no one to bring them together as of now. Besides, the so-called services which offer to do so usually keep a fair share of profit for themselves; taking more money from the buyer and giving less money to the seller. In short, they work on the principle of exploiting the situation to grab cash. Many a times, used car sellers turn out to be fraudulent scammers. They trick people into buying their vehicle in one-to-one sales for a higher than reasonable value. Moreover, there are also people looking to get rid of vehicles that have been in police investigations like drug trafficking or hit and run.

Above all of this, most of the physical condition of a car is also something of great importance and cannot always be checked by the person buying the car. An abused car cannot be as easily identified by a person if they do not have technical knowledge about cars. We aim to have employed mechanics to certify that all these factors are well taken care of when (at an extra cost). Police verification of all the certified vehicles will be done prior to listing them on the platform. For more experienced users, however, there will also be an option for the person themselves to go and check if they are satisfied with the quality of their ride. Incase you choose not to go for a certified vehicle, we will not charge anything at all for the transaction.

Proposed System:

Drift Store

Drift Store aims to be a highly trusted and go to platform for anyone looking to buy or sell a vehicle. We aim to provide a royalty free trading platform for buying and selling pre-owned vehicles as long as users are willing to take the risk and going through the hassle of going through all the steps for checking everything is in order with the vehicle they are about to buy. Drift Store makes it easy to find buyers for your used vehicle and a vehicle for buyers in need. We aim at removing the stress and headache from this process. We also aim at providing after sales protection to both the parties.

3.1 Features and Functionality:

- Easy Listing of used vehicles
 - Making your vehicle visible to sellers as soon as the required details are entered and price is set
- Guide for instructing buyer on what to check while buying a used vehicle
 - An exhaustive guide will be provided for people looking to buy vehicles to safeguard their interests
- o Easy to use UI
 - The User Interface is based on Material UI elements and closely follows design guidelines set by Google
- Plenty of filters for finding your perfect ride
 - Use of MySql database enables us to apply various types of filters for ease of user to filter out the vehicles they desire
- All transaction details will be kept safe in database
 - Many times, there is a chance for transaction details to be forged or lost. To safeguard the user from this type of scams, we take the responsibility to save the transaction details in our database and provide them whenever required.
- Control of user data is in hands of the end-user

Personal data of a user can be deleted very easily as compared to other apps. However, we also promise to safeguard the security of our other users which may have made a transaction with you and will send a copy of your ID and Transaction details to their personal email. The data will be deleted off of our servers.

o Built from ground up keeping end user convenience and privacy in mind

• The app is built keeping in mind convenience of the users and hence keeps focus on the experience of the end user.

Project Outcomes:

- The main outcome of this project is to provide a platform for users to buy and sell used vehicles without leaving the comfort of their own house.
- Separate UI for seller and buyer homepages.
- Ability to edit user details after registration.
- User Can log in Using his credentials.
- User can Choose between the option of buying or selling a vehicle.
- After choosing the option the user will be redirected to the respective page.
- User can choose the vehicle which he wants to buy / sell according to his/her preference with the help of various filters.
- All the paperwork would be done online to provide feasibility to both the buyer and the seller.
- Provide a usable and stable environment which promotes peace of mind for the user

Software Requirements

It is recommended to use Windows for running Drift Store

- JDK Requirements:
 - User System must have JDK 17+ installed along with JavaFX components and Environment variables correctly set. The JDK and the JRE have minimum processor, disk space, and memory requirements for 64-bit Windows platform.
- Database Requirements:
 - o Drift Store uses MySQL database and requires it to be installed with database configured as per the application requirements. MySQL requires a 64bit operating system and processor to work and at least 512MB of RAM.
- Storage and Memory Requirements:
 - o It is recommended to have at least 2gb of free disk space and 4gb ram to run Drift Store and its database smoothly
- CPU Requirements:
 - MySQL requires a 64-bit compatible CPU
 - o JavaFX states the following specification for CPU:
 - Intel Pentium 4, Intel Centrino, Intel Xeon, or Intel Core Duo (or compatible) 1.8
 GHz minimum (2.6 GHz Intel Pentium 4 or equivalent recommended)

Project Design:

While the development of Drift Store, very close attention has been paid to make the UI as user friendly and usable as possible. The aim of project design was to achieve something that can be easily understood and used by someone who knows how to operate a simple smartphone. Hence, the project uses icons from Google's Material UI library as well as follows the UI guidelines of Material Design. As Material Design is used in most places today, it is very familiar to the user and gives a look of consistency while also looking up to date with today's design trends.

UI Screenshots:

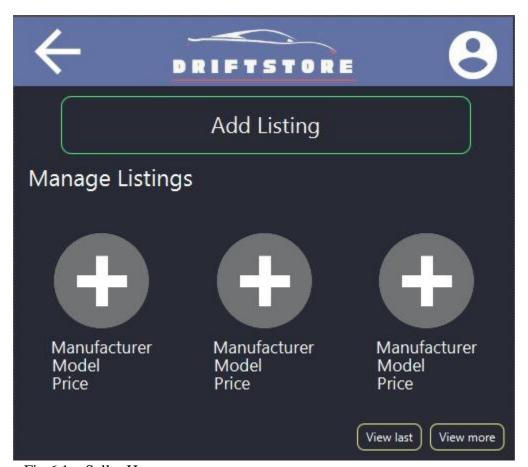


Fig 6.1 – Seller Homepage

• Figure 6.1:

- The Seller homepage is the page that opens when the application detects a Seller usertype has logged in.
- o There is a big button for adding a car listing on the platform.
- o Below that, the cars already on sale by the same seller are displayed in descending order of their listing date.



Fig 6.2 - List Car page

Fig 6.3 – Features page

Fig 6.4 – Edit car page for editing details later on

• Figure 6.2:

- The List Car page is the page seller is taken to as soon as they click on Add Listing button on the homepage (see Figure 6.1).
- On this page, preliminary details of the vehilce are taken from the seller regarding their vehicle.
- o There is an option to upload upto 3 images of the car.

• Figure 6.3:

- The Feature Page provides the seller to add details about their car like the features it has or if it has any damages.
- o These features/damages can be edited later on as well.
- There is also an option to add a car description where the seller can list if they have done any mods on the vehicle or if there are any quirks about it.

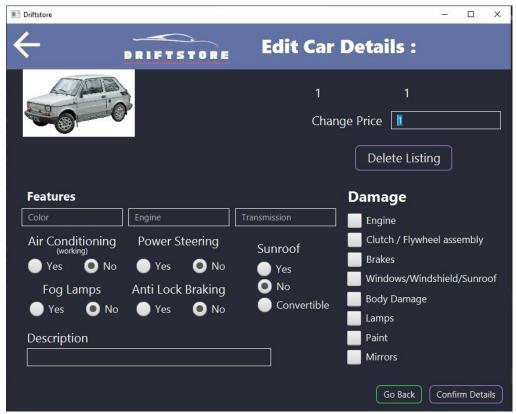


Fig 6.4 – Edit Car Details Page

• Figure 6.4:

- o The Edit Car Details Page is shown when the seller clicks on a Car Listing.
- This page gives user ability to change features and damages (incase something stopped working after car listing or they got something that was previously working repaired.)
- There is also the option of completely deleting a listing incase car got sold outside of the platform.
- o Besides all that, the Price of the car can also be changed here.

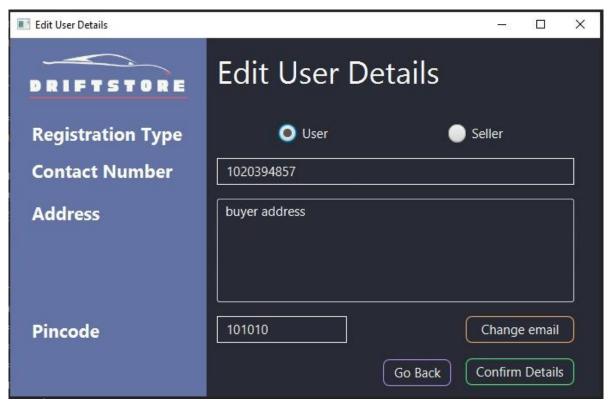


Fig 6.5 – Edit User Details page

• Figure 6.5:

- The Edit user Details screen lets user change his or her personal details later on.
 Incase someone's address or contact number changes, it can be changed in the database using this GUI
- There is also an option to change email address of the user and the registration type. For example, if someone wishes to change from seller to buyer, they can do so easily.

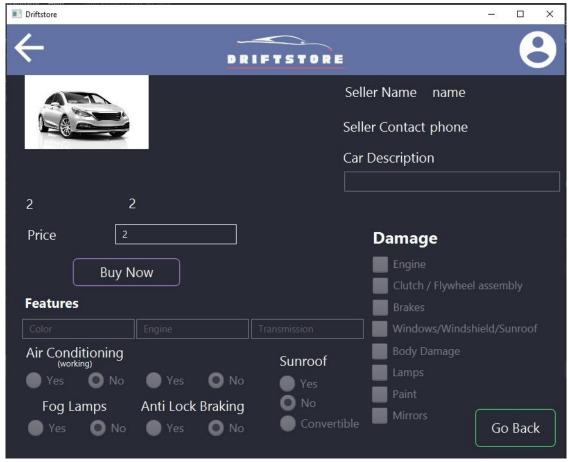


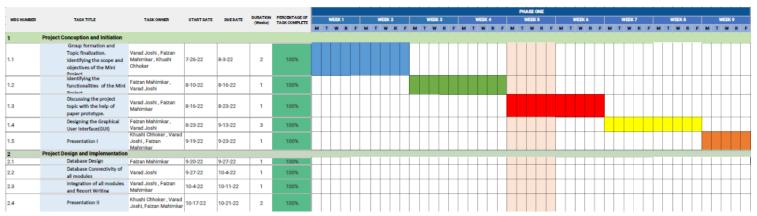
Fig 6.6 – Buy car interface.

• Figure 6.6:

- The buy car interface will be shown to the user after they click on the vehicle they are interested in or want to know more about.
- The interface shows details regarding the seller like Seller name and contact number. It also shows all the features and damages to the car along with images of the car. Most importantly this UI will be used for purchasing a vehicle so it is important to show the Price. Price is displayed in a white highlighted box and Buy Now button is located just below it as it makes the interface more intuitive.

Project Scheduling:

Gantt Chart for Drift Store:



- Project Conception and Initialization:
 - Group formation, Topic finalization, Identifying the scope and objectives of the Mini Project. Within this time, a group was formed and the topic for mini project was decided: Car Dealership
 - Group members: Varad Joshi, Faizan Mahimkar, Khushi Chhoker
 - Topic Finalized: Car Dealership
 - Scope and Objective: To provide an app that lets seller list their car on a platform and buyers buy the car from the platform.
 - O Identifying the functionalities of the Mini Project: Within this time, various functionalities specific to a car dealership application were discovered and the features to be added to our project were decided.
 - Features Identified: Easy selling process, filters, changing user type after registration, features and damages about car.
 - Functionality: Image uploading to database, displaying cars to user and seller with different behavior, displaying car details, editing car details, buying car, deleting car.
 - Discussing the project with the help of a paper prototype: A paper prototype was made for the general GUI of the project and it was discussed with our project guide.
 - Designing the GUI of the project: Full GUI development was done as an initial framework for designing of backend. The GUI developed during this period has gone through changes since the first presentation.

	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION(Weeks)	PERCENTAGE OF TASK COMPLETE	PHASETW0																				
WBS NUMBER							WEEK 10				WEEK 11				WEEK 12				WEEK 13				WEEK 14				
							м	т	W	R F	М	т	W	R	F N	1 T	W	R	F	м	T W	R	F	М	T W	v R	F
1	Project Conception and Initiation																										
1.1	Group formation and Topic finalization. Identifying the scope and objectives of the Mini Project	Varad Joshi , Faizan Mahimkar , Khushi Chhoker	7-26-22	8-3-22	2	100%																					
1.2	Identifying the functionalities of the Mini Project	Faizan Mahimkar , Varad Joshi	8-10-22	8-16-22	1	100%																					
1.3	Discussing the project topic with the help of paper prototype.	Varad Joshi , Faizan Mahimkar	8-16-22	8-23-22	1	100%																					
1.4	Designing the Graphical User Interface(GUI)	Faizan Mahimkar , Varad Joshi	8-23-22	9-13-22	3	100%																					
1.5	Presentation I	Khushi Chhoker , Varad Joshi , Faizan Mahimkar	9-19-22	9-23-22	1	100%																					
2	Project Design and Implementation																										
2.1	Database Design	Faizan Mahimkar	9-20-22	9-27-22	1	100%																					
2,2	Database Connectivity of all modules	Varad Joshi	9-27-22	10-4-22	1	100%																					
2,3	Integration of all modules and Report Writing	Varad Joshi , Faizan Mahimkar	10-4-22	10-11-22	1	100%																					
2.4	Presentation II	Knushi Chnoker , varau	10-17-22	10-21-22	2	100%																					

- Project Design and Implementation:
 - o Database Design: Based on features and functionality, various tables and columns for the database were established and a database was created.
 - Database connectivity of module 1 and 2 (Login and Seller homepage): During this period,
 Login module had full functionality including ability to register as a new user. Initial working state of Seller module was achieved.
 - Integration of all modules and Report writing: During this period, all the components of Seller module were developed and Buyer module was derived off of it. First look at a complete working project was also achieved.

Conclusion:

Hence, we have developed an application concept which represents the working of the proposed platform. With the use of a basic MySql database containing 3 tables, a working system application is developed which provides users with the functionality to list a car, and change various aspects of the listing after the fact; while also providing functionality to buy that car from the perspective of a buyer. JavaFX is a simple to use tool that was used for all of the GUI in this project except for the UI for file selection, which comes built-in with Swing, which is also now a part of JavaFX. Image insertion and deletion part of the project was a learning opportunity and provided insight into how large files can be handled, as well as converted from BLOBs to files and vice versa. As our knowledge of java has increased gradually as the project went on, it is possible to further optimize it by using lesser methods or classes and repurposing existing resources.