**Car Dealership System**

**Group Number: 02**

**Group Members:**

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| --- | --- |
| Student Id | Student Name |
| 19101069 | Md. Mahbubur Rahman Raad |
| 19101076 | Sayem Kader Chowdhury |
| 19101088 | Md. Mehtabul Islam Shafin |

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# **Introduction:**

Car Dealership System is an online platform where Car companies, brand new car importers and reconditioned car importers can list their cars for sale, with adequate information, and prices, for the buyers. Buyers can sign up to the platform, view items up for sale, request additional information, and contact with the shop for further clarification.

# **Motivation:**

The system will make car shops more accessible to the customers, streamline communication between the shops and customers, and overall be a secure, better, more time and cost saving way to shop cars.

# **System Description:**

* **Project Sponsor:**

Md. Hasan Mahmud (Managing Director of BARVIDA (Bangladesh Reconditioned Vehicles Importers and Dealers Association))

* **Business Need:**

This project has been greenlighted by BARVIDA to streamline communication between the customers and the car shops, as well as increase car sell figures through better shopping experience provided by the system.

* **Business requirements:**

Both the clients and the sellers will be able to access the system through the web, as well as an application. The system will have clients who wants to search for and buy cars. The specific functionality that the system should have are listed below,

* + Allow clients to self-register.
  + Clients will be able to search for cars from the inventory.
  + Allow clients to book cars.
  + Allow clients to interact with sellers.
  + Ensure secured payment system.
* **Business Value:**

The system targets to attract sellers through a much more convenient shopping experience. It expects more car sells as it will make shopping easier because customers will have access to all the information related to the car from their home, customers can shop from anywhere and it will decrease customer’s nuisance as he/she will not have to be physically present at the shop to personally inspect the car. Estimated tangible values as follows,

* ৳ 1,25,00,000 from reduced employee numbers.
* ৳ 3,91,00,000 from increased car sells.
* ৳ 23,67,000 from reduced physical car showroom builds.
* ৳ 5,30,000 from new businesses (shops) registering to the system.
* **Special issues and constraints:**
* The system should have top-level security clearance as it involves high amount transactions.
* The system should be operational before summer, as we see an increase in car purchases in summer.
* The system should be abiding by government-mandated import tax law(s).

# **Requirement Analysis:**

**1. Authentication:**

**Functional Requirement:**

1. FR1.1: Customers must register to the system to access the system.
2. FR1.2: Customers must provide valid Bangladeshi NID (National Identification Card) number and personal information such as First Name, Last Name, Date of Birth, e-mail address to create an account.

**Non Functional Requirement:**

1. NFR1.1: Registration response time should not exceed 15 seconds.
2. NFR1.2: The system will have a two-factor authentication system through e-mail or personal phone number.
3. NFR1.3: 10 failed password attempts will result in a locked account.
4. NFR1.4: Users can request for password reset if they forget their password, an automated generated password will be sent to their email.

**2. Contact:**

**Functional Requirement:**

1. FR2.1: Users must be logged in, in order to contact the sellers.
2. FR2.2: Users will have the choice to either chat or call the sellers.
3. FR2.3: Clients may call the sellers only on workdays, and on office time.
4. FR2.4: Users will be able to like, or comment on the items.

**Non Functional Requirements:**

1. NFR2.1: Chat response time must not exceed 2 seconds.
2. NFR2.2: Sellers will not be able to access the customer's cell number unless the customer calls sellers first.

**3. Payment Gateway Integration**

**Functional Requirement:**

1. FR3.1: Clients will be able to select his/her desired payment method, out of several payment methods embedded to the system such as, bKash, Nagad, Online Banking, or cash on delivery.
2. FR3.2: Advertisers may promote their banking system through promo codes for a fixed percentage of discounts on each purchase.

**Non Functional Requirements:**

1. NFR3.1: Users will be penalized if they cancel a cash on delivery order.
2. NFR3.2: Users can earn points through each purchase, which can be redeemed during their next purchase through discounts.

**4. Payment Gateway Integration**

**Functional Requirement:**

1. FR4.1: Clients may select their desired time-slot and date to inspect and test-drive their purchase before delivery.

**Non Functional Requirements:**

1. NFR4.1: Clients will get a text or e-mail reminder a day before the date of inspection and test drive.
2. NFR4.2: Both clients and buyers will be able to reschedule with both party’s consent.

**Non-Functional:**

**1. Operational:**

* The system will be accessible through web browsers and will have a pc as well as a mobile version.
* The system will have an application which will run on operating system(s) android, and iOS.

**2. Performance:**

* The system should be able to host at least 500 users at a time.
* The system should be able to list at least 3000 items at once.
* System’s response time should not exceed 2 seconds.
* The system should be operational 24/7.

**3. Security:**

* Sellers will not be able to access clients information.
* The system should ensure clients anonymity from other users.
* The system must ensure secure online payments through encryption.

**4. Cultural & Political:**

* Total cost of the car will include the government mandated TAX on the vehicle.
* The system should publish annual sales numbers, show profits and losses to its shareholders.