

Group Assignment

Workshop on Implementing Software Design

DriveHub - Web-Based Car Selling Platform



Group 1:

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I. Introduction

"DriveHub" is an innovative online platform that aims to improve and simplify the process of purchasing and selling vehicles. DriveHub's goal is to connect buyers and sellers throughout the country in a smooth and easy manner. Users may quickly browse through a large choice of automobiles, do complex searches, and connect with one another using this platform.

DriveHub's primary objective is to streamline the car marketplace by providing a centralized single online hub where buyers and sellers can interact and complete transactions. By leveraging the power of technology, DriveHub eliminates the traditional barriers and challenges associated with buying or selling a car, making the process more efficient and user-friendly.

With DriveHub, buyers have access to a vast selection of vehicles, enabling them to explore various options that suit their preferences and needs. The platform offers advanced search functionalities, allowing buyers to filter their search based on specific criteria such as make, model, price range, mileage, and location. This empowers buyers to make informed decisions and find the perfect car that matches their requirements.

For sellers, DriveHub provides an effective channel to reach a wider audience of potential buyers. By listing their vehicles on the platform, sellers can showcase detailed information, including images, specifications, and pricing. Moreover, DriveHub offers communication features that enable sellers to interact directly with interested buyers, facilitating seamless negotiation and finalizing the sales process.

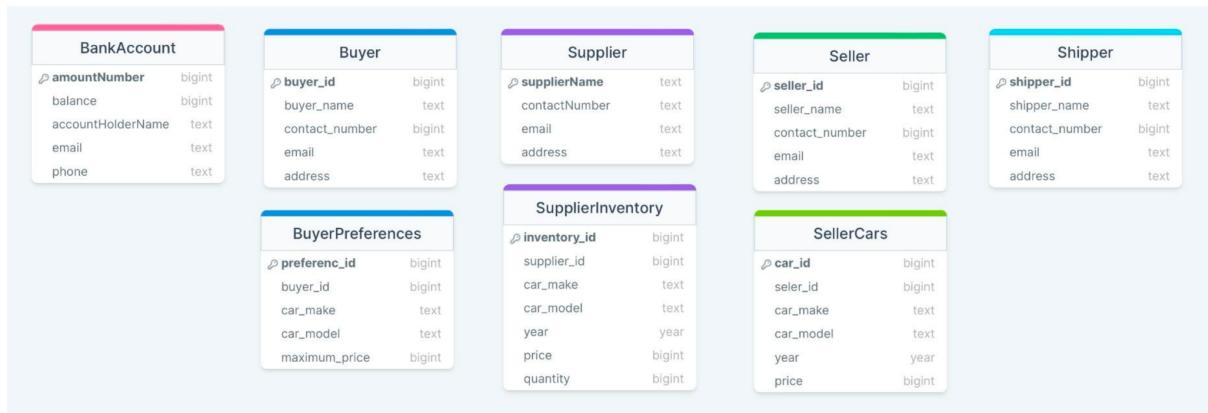
DriveHub prioritizes user experience and security. The platform implements robust authentication and verification mechanisms to ensure the integrity and credibility of the listings. It also provides secure payment options, enabling buyers to complete transactions with peace of mind.

In conclusion, DriveHub revolutionizes the car buying and selling experience by leveraging technology to create an efficient, user-friendly, and secure online marketplace. By connecting buyers and sellers nationwide, DriveHub simplifies the process, enhances accessibility, and empowers users to make informed decisions. With its advanced search capabilities,

communication features, and emphasis on security, DriveHub aims to become the go-to platform for anyone looking to buy or sell a car online.

II. Business Process

a. Business Flow Diagram



b. Users and Roles

Bank: The bank's role is to facilitate secure financial transactions between buyers and sellers. They provide payment processing services and ensure the safe transfer of funds from the buyer to the seller. The bank verifies the authenticity of the transaction and may also offer additional services such as financing options or loan approvals for car purchases.

Buyer: The buyer is an individual or organization interested in purchasing a car through DriveHub. Buyers can browse the available listings, search for specific criteria such as make, model, and price range, and communicate directly with sellers. They can also view detailed information about the cars, negotiate prices, arrange for inspections or test drives, and make payments through the integrated payment gateway.

Supplier: Suppliers in the context of DriveHub refer to entities that provide various automotive products and services. They can be car manufacturers, dealerships, or parts suppliers. Suppliers may collaborate with DriveHub to list their products and services on the platform, allowing buyers to access a wider range of options.

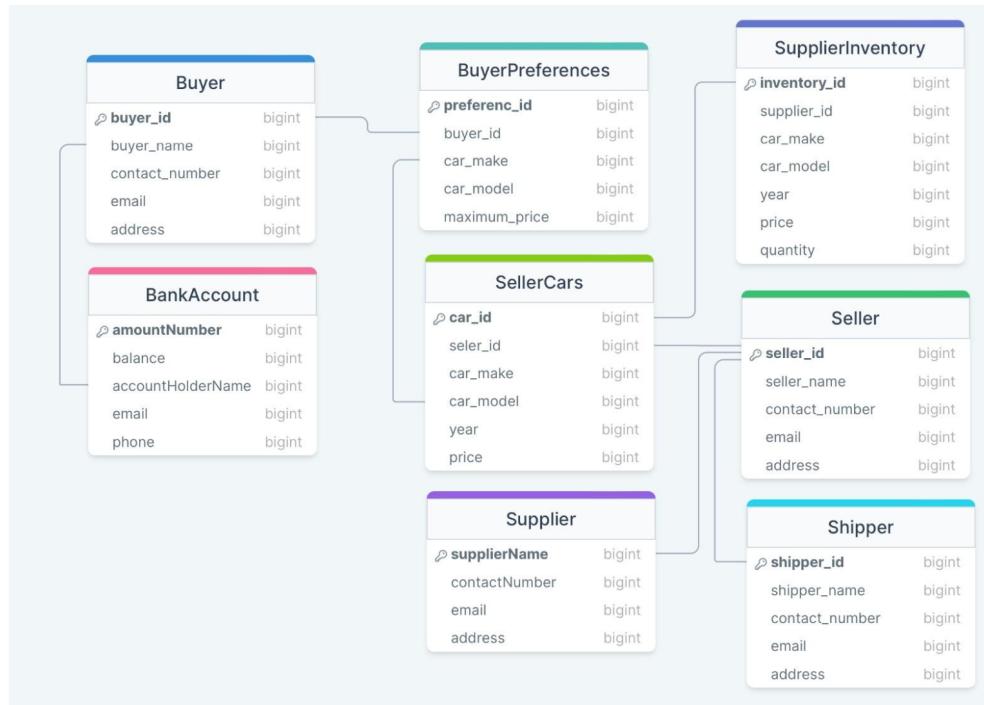
DriveHub can serve as a platform for suppliers to showcase their offerings and connect with potential buyers.

Seller: The seller is an individual or entity looking to sell a car through DriveHub. Sellers can list their vehicles on the platform, providing detailed information such as specifications, pricing, and images. They can interact with potential buyers, answer inquiries, negotiate prices, and arrange for test drives or inspections. Sellers benefit from the increased exposure and reach provided by DriveHub, as it connects them with a larger pool of potential buyers.

Shipper: The shipper's role is to facilitate the transportation of purchased vehicles from the seller's location to the buyer's designated destination. They ensure the safe and timely delivery of the vehicle, coordinating logistics, and handling any necessary paperwork or documentation related to the transportation process. DriveHub may integrate with shipping services or provide recommendations for trusted shippers to assist buyers and sellers in arranging vehicle transportation.

III. Database and Dataset

a. Entity Relationship Diagram



b. Detail of Each Table

i. BankAccount

The following columns compose the buyer table in the DriveHub online car marketplace:

1. ID: The ID column acts as a unique identification for each buyer preferences table item. It aids in the identification and reference of individual records.
2. Account Number: The account number connected with a user's banking information is stored in this field. It acts as a one-of-a-kind identification for each bank account in the system.
3. Balance: The current balance or available funds in the user's bank account are displayed in this column. It reflects the account's financial situation at a certain point in time.
4. Account Holder Name: This column records the account holder's name, which is either the user's name or the name of the corporate entity linked with the bank account.
5. Email: The email address linked with the bank account is stored in this column. It serves as a means of communication and identification for the account holder.
6. Phone: The phone number linked with the bank account is stored in this column. It provides an additional contact detail for the account holder and can be used for verification or communication purposes.

ii. Buyer

The columns in the DriveHub online vehicle marketplace buyer table are as follows:

1. ID: The ID column acts as a unique identification for each buyer preferences table item. It aids in the identification and reference of individual records.

2. Buyer Name: The name of the buyer is stored in this column, which normally reflects the individual or company purchasing an automobile through DriveHub.
3. Contact Number: This column contains the buyer's phone number. It allows the buyer to communicate and make contact.
4. Email: The buyer's email address is stored in this field. It is the buyer's primary form of communication and identification.
5. Address: The Address column holds the buyer's actual address, which may include information such as street name, city, state, and ZIP code. It aids in determining where the bought vehicle will be delivered or picked up.
6. Buyer ID: Buyer ID acts as a one-of-a-kind identification for each buyer. It may be used within the DriveHub system for internal tracking and referencing.

iii. Buyer Preferences

The DriveHub online car marketplace's buyer preferences table includes the following columns:

1. ID: The ID column acts as a unique identification for each buyer preferences table item. It aids in the identification and reference of individual records.
2. Buyer ID: Buyer ID: This column establishes a relationship with the buyer table by referencing the unique identifier of the corresponding buyer. It associates the buyer preferences with a specific buyer in the system.
3. Buyer Name: This column holds the buyer's name, which aids in identifying the customer based on their preferences.
4. Car Make: The Car Make column stores information on the buyer's preferred make or brand of car. It assists in narrowing down the search to certain automobile manufacturers.

5. Car Model: This column holds the buyer's selected model or exact name for the automobile. It enables a more focused search based on the buyer's precise model choices.
6. Maximum amount: The Maximum amount column shows the highest amount a buyer is willing to pay for an automobile. It aids in narrowing down the available possibilities within the buyer's price range.

iv. Seller

The seller table in the DriveHub online car marketplace consists of the following columns:

1. ID: The ID column acts as a unique identification for each buyer preferences table item. It aids in the identification and reference of individual records.
2. Seller Name: This column stores the name of the seller which represents the individual or organization listing cars for sale on the DriveHub platform.
3. Contact Number: This column contains the seller's phone number. It allows the seller to communicate and make contact.
4. Email: The seller's email address is stored in this field. It is the buyer's primary form of communication and identification.
5. Address: The Address column holds the seller's actual address, which may include information such as street name, city, state, and ZIP code. It aids in determining where the bought vehicle will be delivered or picked up.
6. Seller ID: This column serves as a one-of-a-kind identification for each seller. It may be used within the DriveHub system for internal tracking and referencing.
7. Supplier ID: This column associates the seller with a specific supplier in the context of DriveHub. It establishes a connection between the seller and the supplier providing automotive products or services.

v. Seller Cars

The columns in the DriveHub online auto marketplace's seller cars table are listed as follows::

1. ID: The ID column acts as a unique identification for each buyer preferences table item. It aids in the identification and reference of individual records.
2. Seller ID: This column establishes a relationship with the seller table by referencing the unique identifier of the corresponding seller. It associates the listed cars with a specific seller in the system.
3. Car Make: This column stores the make or brand of the listed car. It indicates the manufacturer or brand name associated with the vehicle.
4. Car Model: This column holds the buyer's selected model or exact name for the automobile. It enables a more focused search based on the buyer's precise model choices.
5. Year: The Year column represents the manufacturing year of the listed car. It indicates the year in which the vehicle was manufactured.
6. Price: The Price column indicates the price at which the car is listed for sale by the seller. It represents the desired selling price for the vehicle.
7. Car ID: This column acts as a unique identification for each listed vehicle. It may be used within the DriveHub system for internal tracking and referencing.

vi. Shipper

The columns of the DriveHub online automobile marketplace's shipper table are as follows:

1. ID: The ID column acts as a unique identification for each buyer preferences table item. It aids in the identification and reference of individual records.
2. Shipper Name: This column stores the name of the shipper, representing the individual or organization responsible for transporting the purchased vehicles.
3. Contact Number: This column holds the phone number associated with the shipper. It provides a means of communication and contact for coordinating vehicle transportation logistics.
4. Email: This column stores the email address associated with the shipper. It serves as a primary mode of communication and identification for the shipper.
5. Address: This column stores the physical address of the shipper, including details such as street name, city, state, and ZIP code. It helps in identifying the location from where the shipping operations are conducted.

vii. Supplier

The DriveHub online car marketplace's supplier table includes the following columns:

1. ID: This column serves as a unique identifier for each entry in the supplier table. It helps in distinguishing and referencing individual supplier records.
2. Supplier Name: This column stores the name of the supplier, representing the individual or organization providing automotive products or services.
3. Email: This column stores the email address associated with the supplier. It serves as a primary mode of communication and identification for the supplier.

4. Contact: This column holds the contact information, such as phone number or other relevant details, to establish communication with the supplier.
5. Supplier ID: This column serves as a unique identifier specific to each supplier. It can be used for internal tracking and referencing purposes within the DriveHub system.

viii. Supplier Inventories

The DriveHub online car marketplace's supplier inventories table has the following columns:

1. ID: This column serves as a unique identifier for each entry in the supplier inventories table. It helps in distinguishing and referencing individual records.
2. Supplier ID: This column establishes a relationship with the supplier table by referencing the unique identifier of the corresponding supplier. It associates the inventory with a specific supplier in the system.
3. Car Make: This column stores the make or brand of the cars in the supplier's inventory. It indicates the manufacturer or brand name associated with the vehicles.
4. Car Model: This column captures the model or specific name of the cars in the supplier's inventory. It helps in identifying the specific models of the vehicles available.
5. Year: This column represents the manufacturing year of the cars in the supplier's inventory. It indicates the year in which the vehicles were produced.
6. Price: This column indicates the price at which the cars are listed in the supplier's inventory. It represents the selling price for each vehicle.

c. Sample of Dataset

i. Banking

```
_id: ObjectId('647178167c05d9a4dfa54224')
accountNumb... : "456789123"
balan... : 20000
accountHolderNa... : "David Williams"
email: "david.williams@example.com"
phone: "555-9876"
```

```
_id: ObjectId('647178267c05d9a4dfa54c55')
accountNumb... : "789123456"
balan... : 8000
accountHolderNa... : "Sarah Davis"
email: "sarah.davis@example.com"
phone: "555-4321"
```

ii. Buyer

```
_id: ObjectId('647178c57c05d9a4dfa5c05f')
buyerNa... : "John Doe"
contactNumb... : "123-4567"
email: "johndoe@example.com"
addre... : "123 Main Street"
buyer... : "buyer_id_1"
```

```
_id: ObjectId('647178ce7c05d9a4dfa5c694')
buyerNa... : "Jane Smith"
contactNumb... : "987-6543"
email: "janeshsmith@example.com"
addre... : "456 Oak Avenue"
buyer... : "buyer_id_2"
```

iii. Buyer Preferences

```
_id: ObjectId('64717a807c05d9a4dfa70d09')
buyer... : "buyer_id_1"
carMa... : "Honda"
carMod... : "Civic"
maximumPri... : 20000
```

```
_id: ObjectId('64717a897c05d9a4dfa71443')
buyer... : "buyer_id_2"
carMa... : "Toyota"
carMod... : "Corolla"
maximumPri... : 15000
```

iv. Seller

```
_id: ObjectId('6471795c7c05d9a4dfa63336')
sellerName: "Mary Johnson"
contactNumber: "123-4567"
email: "maryjohnson@example.com"
address: "123 Main Street"
sellerId: "1"
supplier: "6471786a7c05d9a4dfa57e25"
```

```
_id: ObjectId('647179bb7c05d9a4dfa6765d')
sellerName: "Robert Smith"
contactNumber: "987-6543"
email: "robertsmith@example.com"
address: "456 Oak Avenue"
sellerId: "2"
supplier: "647178767c05d9a4dfa58685"
```

```
_id: ObjectId('647179c67c05d9a4dfa67d4b')
sellerName: "Jennifer Davis"
contactNumber: "456-7890"
email: "jenniferdavis@example.com"
address: "789 Elm Street"
sellerId: "3"
supplier: "6471787f7c05d9a4dfa58ce4"
```

v. Seller Cars

```
_id: ObjectId('64717aa57c05d9a4dfa728cc')
seller... : "1"
carMa... : "Honda"
carMod... : "Accord"
ye... : 2017
price: 18000
carId: "1"
```

```
_id: ObjectId('64717b087c05d9a4dfa76df9')
seller... : "1"
carMa... : "Toyota"
carMod... : "Camry"
ye... : 2015
price: 15000
carId: "2"
```

vi. Shipper

```
_id: ObjectId('647179307c05d9a4dfa61225')
shipperName: "ABC Transport"
contactNumber: "123-4567"
email: "abctransport@example.com"
address: "123 Main Street"
```

```
_id: ObjectId('6471793c7c05d9a4dfa61bbd')
shipperName: "XYZ Logistics"
contactNumber: "987-6543"
email: "xyzlogistics@example.com"
address: "456 Oak Avenue"
```

vii. Supplier

```
_id: ObjectId('6471786a7c05d9a4dfa57e25')
supplierName: "ABC Auto Parts"
contactNumber: "123-4567"
email: "abc@example.com"
address: "123 Main Street"
supplierId: "supplier_id_1"

supplierId: "supplier_id_2"
_id: ObjectId('647178767c05d9a4dfa58685')
supplierName: "XYZ Motors"
contactNumber: "987-6543"
email: "xyz@example.com"
address: "456 Oak Avenue"

contactNumber: "456-7890"
email: "123@example.com"
address: "789 Elm Street"
supplierId: "supplier_id_3"
_id: ObjectId('6471787f7c05d9a4dfa58ce4')
supplierName: "123 Car Accessories"
```

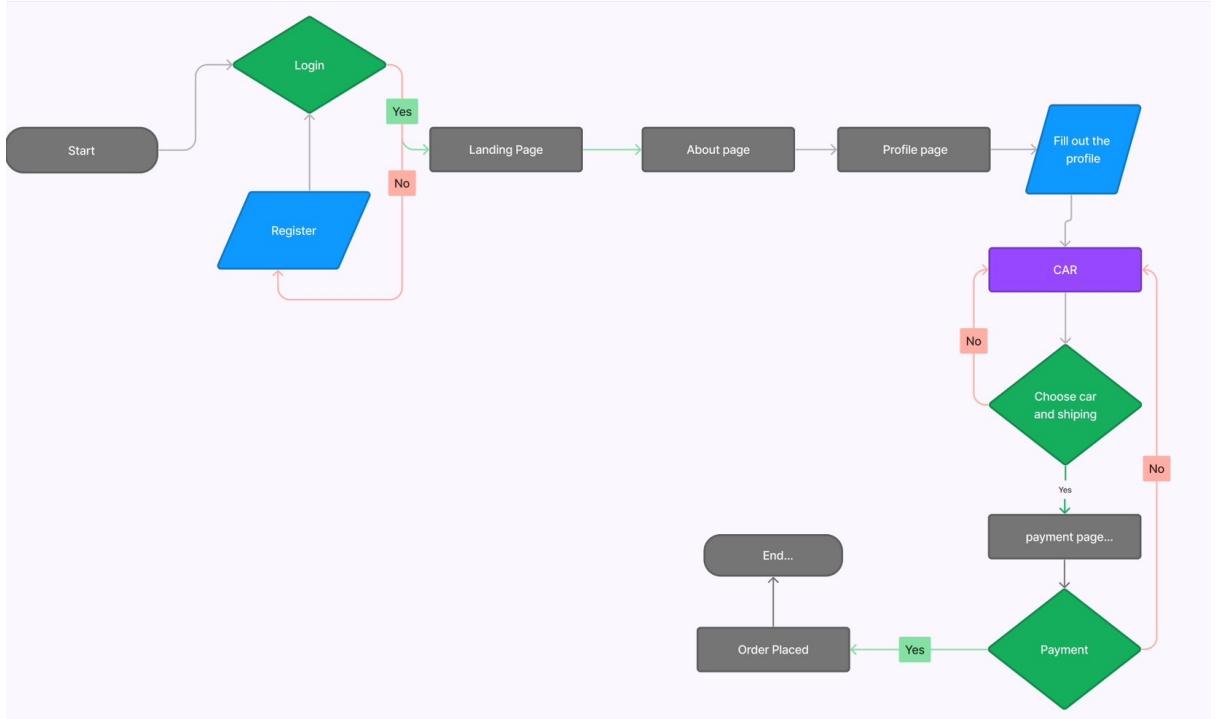
viii. Supplier Inventories

```
_id: ObjectId('64717b807c05d9a4dfa7c9da')
supplierId: "supplier_id_1"
carMake: "Honda"
carModel: "Accord"
year: 2017
price: 18000

_id: ObjectId('64717b8b7c05d9a4dfa7d18a')
supplierId: "supplier_id_2"
carMake: "Toyota"
carModel: "Camry"
year: 2015
price: 15000

_id: ObjectId('64717b9b7c05d9a4dfa7ddcd')
supplierId: "supplier_id_3"
carMake: "Chevrolet"
carModel: "Cruze"
year: 2016
price: 16000
```

IV. Website Workflow Diagram

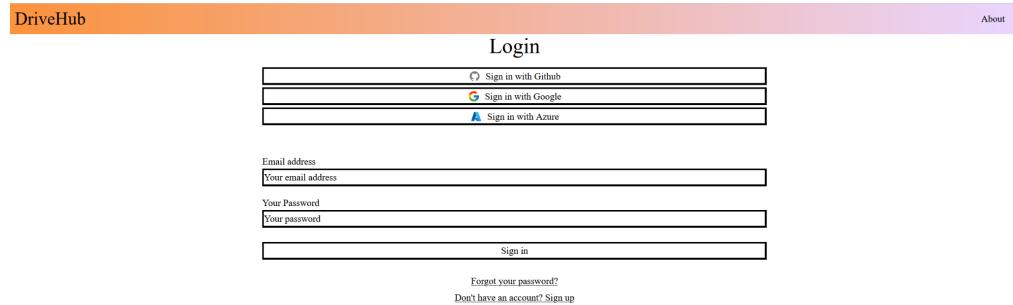


The login page is the first thing we see; from here, we may either login or create an account if we don't already have one. We will be met with the landing page/home page after logging in, which is a page particularly intended to attract the attention of visitors. Then we move on to the about page, where we learn more about our website. Then we fill up our profile on the profile page. To buy a car, we go to the car website, then pick the car we want and the delivery method, and lastly we reach the payment page, where we complete the transaction. Buyers have the option of paying with a credit card, gopay, or other methods. After that the order is placed.

V. UI/UX

The further implementation of the UI/UX could be observed on the following link:
<https://drivehub.vercel.app/>

a. Login page



DriveHub

About

Login

Sign in with Github

Sign in with Google

Sign in with Azure

Email address
Your email address

Your Password
Your password

Sign in

[Forgot your password?](#)

[Don't have an account? Sign up](#)

b. Landing Page



c. Product Page

DriveHub

Car About Profile

Honda
Accord
Year: 2017
Price: 18000 USD

Toyota
Camry
Year: 2015
Price: 18500 USD

Chevrolet
Cruz
Year: 2014
Price: 16000 USD

Ford
F-150
Year: 2018
Price: 28000 USD

Nissan
Sentra
Year: 2019

Volkswagen
Golf
Year: 2018

Jeep
Wrangler
Year: 2013

Hyundai
Elantra
Year: 2017

d. Product Details

DriveHub

Car About Prod



Car Detail
Car Brand: Ford
Car Model: F-150
Year: 2018
Price: 28000 USD

Seller
Name: Robert Smith
Email: robert.smith@example.com
Phone: 987-6543
Address: 456 Oak Avenue

Supplier Detail
Name: XYZ Motors
Address: 123 Main Street
Email: xyz@example.com
Phone: 987-6543

Pick Shipper Company

- ABC Transport
- XYZ Logistics
- Global Shipping
- Globus Freight
- Quick Cargo
- Rapid Movers
- Express Transport

Buy Now

e. Payment Gateway

