Final Report
University Marketplace

Group 16

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Percentage of Effort Contributed by Student 1: 50%

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OVERVIEW AND INTRODUCTION

As a student, managing finances can be a challenging task. Many students often have to sell their items to make ends meet. Our project aims to create an online marketplace where students from any university can easily sell their items to other students within the same university. This platform will connect senior students who are graduating and moving out with fellow students who are in need of household items. By providing a platform that is specific to the university, students can feel more secure about buying and selling items with their peers.

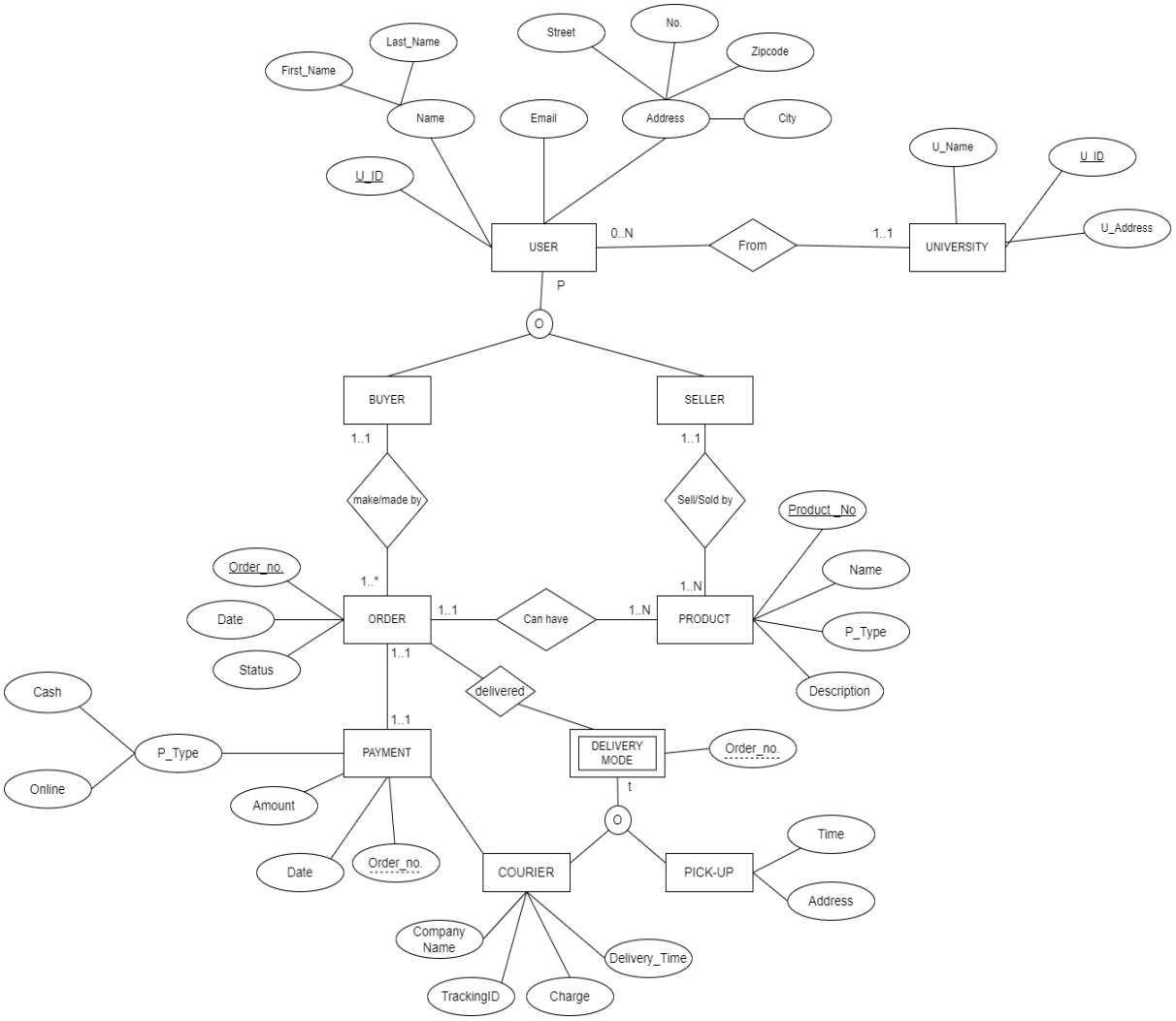
The platform will be open to all universities and will be designed to be easy to use and navigate for students. It will include features such as item listings, user profiles, messaging system, payment gateway and more, which will ensure a smooth transaction process. The platform will also be designed to be safe and secure, with measures put in place to protect both buyers and sellers.

Our project will have several benefits for the student community. Firstly, it will provide a reliable source for students to purchase household items at an affordable price. Secondly, it will allow students to earn money by selling items that they no longer need. Thirdly, it will help to reduce waste and promote sustainability by encouraging students to recycle and reuse household items. Lastly, it will create a sense of community among university students from different institutions as students will be able to interact with each other and build meaningful relationships.

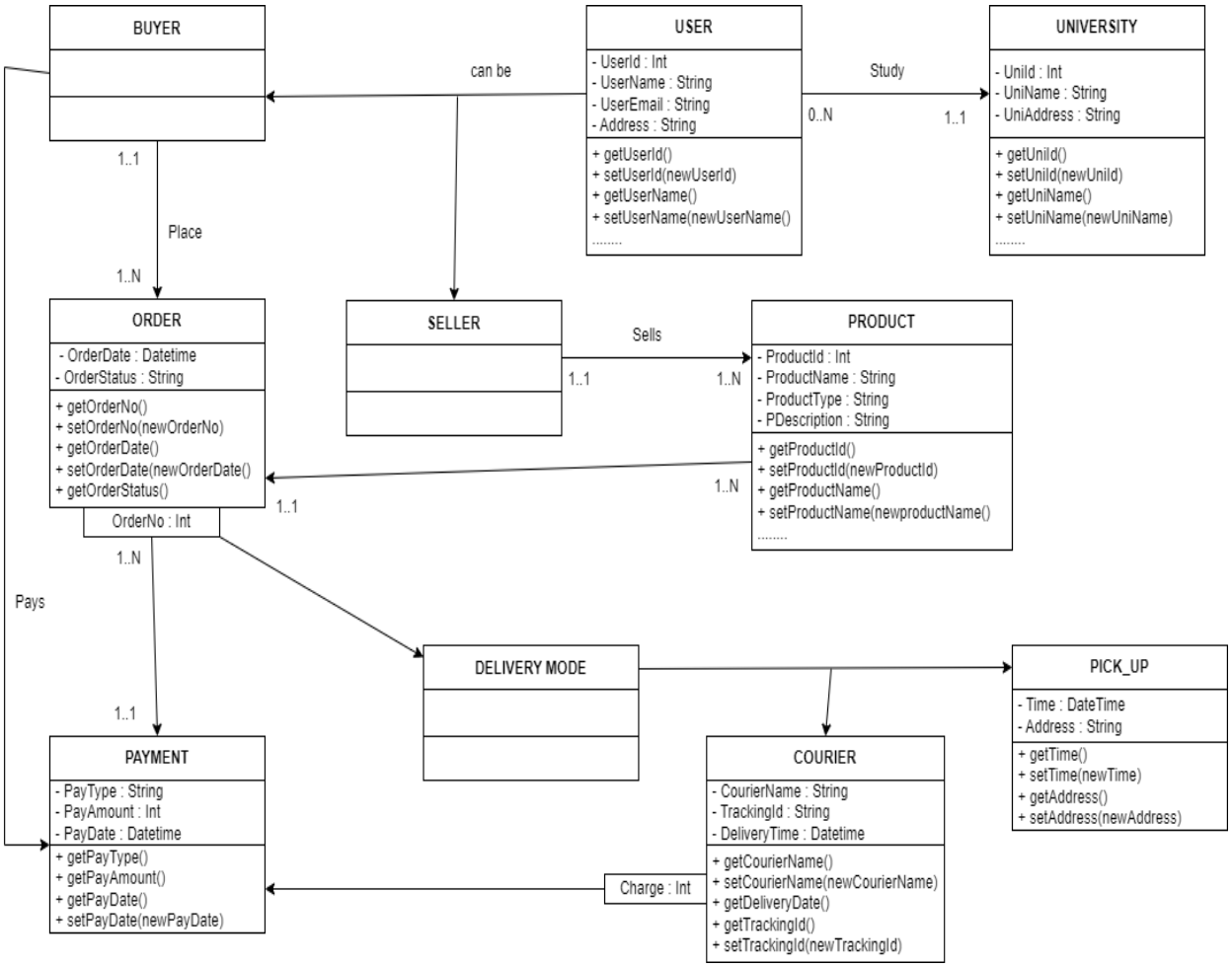
Overall, our project aims to make the process of buying and selling items easy, safe, and secure for the student community across all universities. We believe that this marketplace will provide a valuable service to students and will have a positive impact on their lives.

CONCEPTUAL MODELING

1) EER DIAGRAM



2) UML DIAGRAM



RELATIONAL MODEL

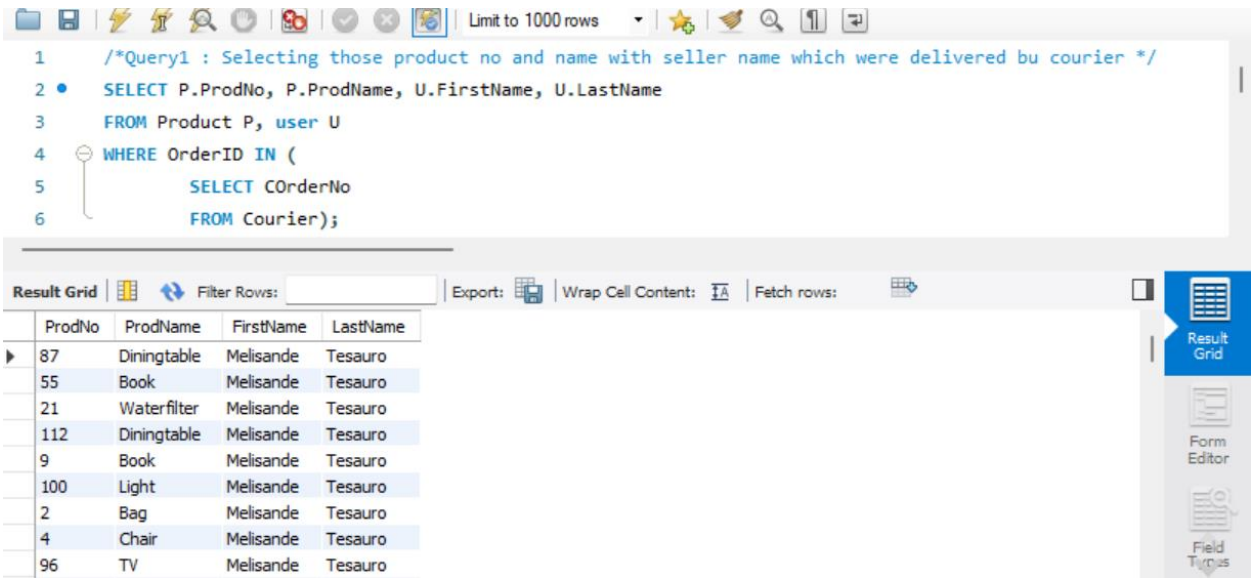
PrimaryKey – Bold , Fotreign Key – with underscore

1. University (**UniID**, Uni_Name, Uni_Address)
2. User (**UserID**, FirstName, LastName, Email, Address)
3. Seller (**SellerID**, SUniID)
4. Buyer (**BuyerID**, BUniID)
5. Product (**ProdNo**, ProdName, PType, Description, SellerID, OrderID)
6. Order (**OrderID**, OrderDate, OrderStatus, PayID)
7. Payment (**PayID**, Amount, PayType)
8. Delivery (**DelID**, OrderNo)
9. Pick-Up (**PickupID**, POrderNo)
10. Courier (**CourierID**, Company, TrackingID, Charge, DelTime, OrderNo)

IMPLEMENTATION IN MYSQL

Query 1 : Selecting those product no and name with seller name which were delivered by courier

```
SELECT P.ProdNo, P.ProdName, U.FirstName, U.LastName
 FROM Product P, user U
 WHERE OrderID IN (      SELECT COrderNo
                         FROM Courier)
```



Query 2 : User's name who are both buyer and seller

```
SELECT FirstName, LastName
FROM user
WHERE UserID in (SELECT SellerID FROM seller) AND
        UserID in (SELECT BuyerID FROM buyer)
```

```
7
8    /*Query2 : User's name who are both buyer and seller*/
9    SELECT FirstName, LastName
10   FROM user
11   WHERE UserID in (SELECT SellerID FROM seller) AND UserID in (SELECT BuyerID FROM buyer);
12
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FirstName	LastName
Bernie	Nolda
Alma	Huguet
Gayle	Caramuscia
Tami	Yemm
Sollie	Lorain
Abbe	Bette
Tierney	Airton
Tamarra	Torre
Titos	Hatherleigh

Query 3 : University which have most buyers

SELECT u.UniName, COUNT(b.BuyerID) AS No_Of_Buyers

FROM university u JOIN buyer b ON u.UniID = b.BUniID

GROUP BY u.UniName

ORDER BY No_Of_Buyers DESC

LIMIT 1;

```
13   /*Query3 : University which have most buyers*/
14   SELECT u.UniName, COUNT(b.BuyerID) AS No_Of_Buyers
15   FROM university u
16   JOIN buyer b ON u.UniID = b.BUniID
17   GROUP BY u.UniName
18   ORDER BY No_Of_Buyers DESC
19   LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

UniName	No_Of_Buyers
UniversitÃ© FranÃ§aise d'Ã‰gypte	5

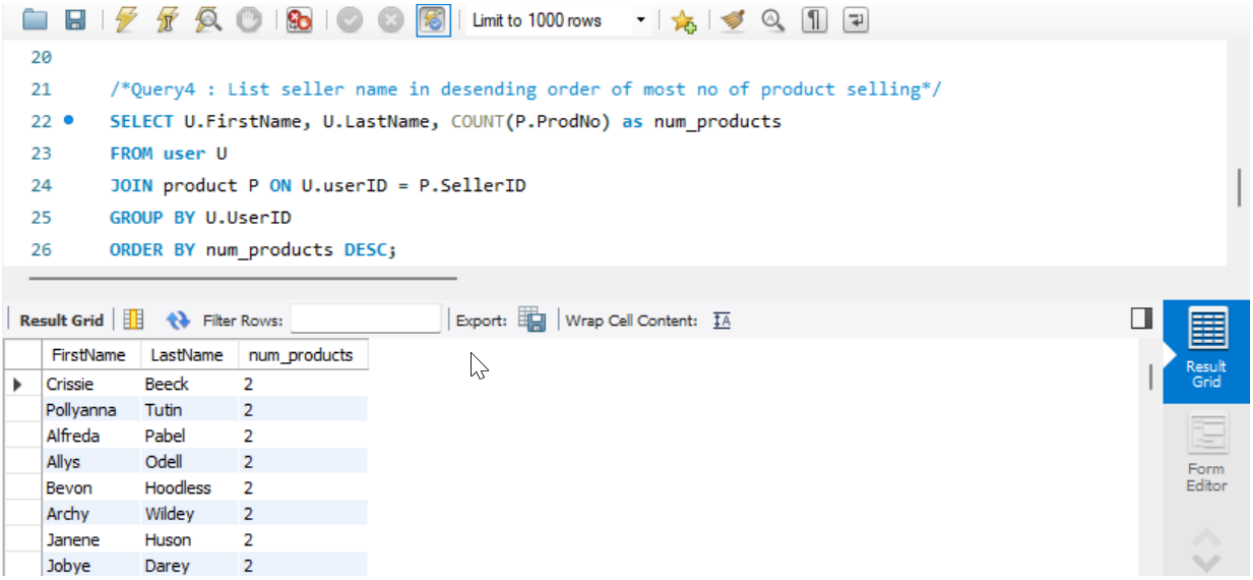
Query 4 : List seller name in descending order of most no of product selling

SELECT U.FirstName, U.LastName, COUNT(P.ProdNo) as num_products

FROM user U JOIN product P ON U.userID = P.SellerID

GROUP BY U.UserID

ORDER BY num_products DESC;



Query 5 : Number of products delivered by courier company

SELECT CompanyName, COUNT(*) AS Order_delivered

FROM courier

GROUP BY CompanyName

ORDER BY Order_delivered DESC

```
/*Query5 : Number of products delivered by courier company*/
SELECT CompanyName, COUNT(*) AS Order_delivered
FROM courier
GROUP BY CompanyName
ORDER BY Order_delivered DESC;
```

CompanyName	Order_delivered
USPS	12
FedEx	8
UPS	8

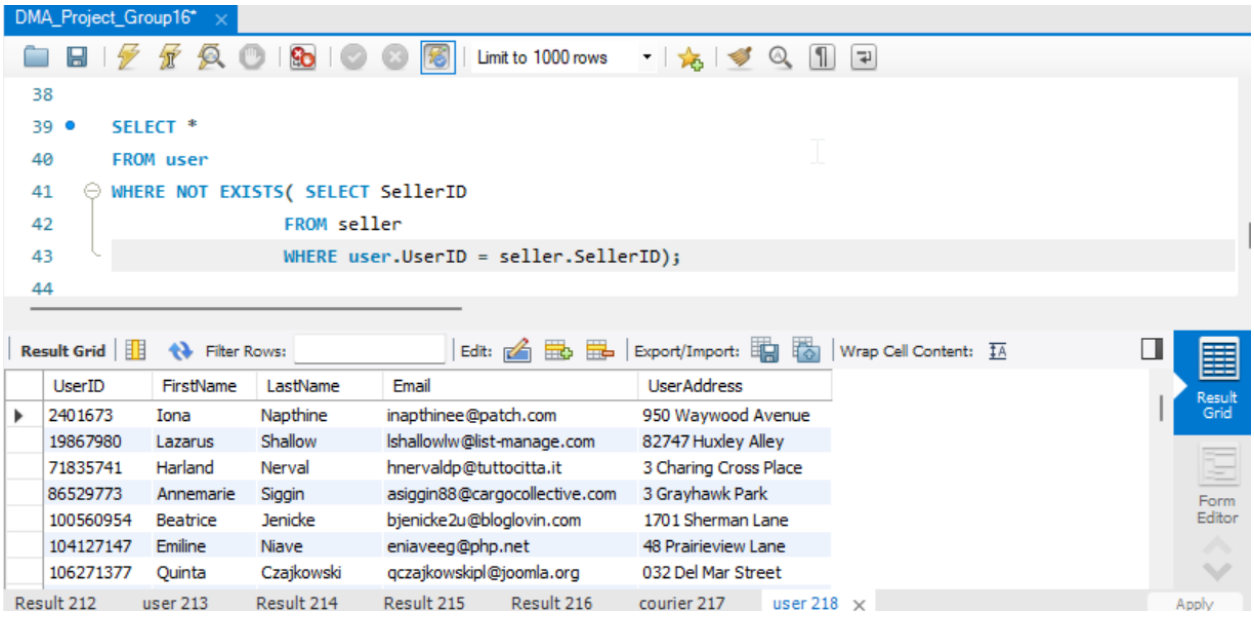
Query 6 : Retrieves a record having highest delivery charge

```
SELECT *
FROM courier
where charge >= ALL (SELECT charge
                     FROM courier);
```

CourierID	CompanyName	TrackingID	Charge	DelTime	COrderNo
27	USPS	d0d07fc0-4a13-4222-b91c-d7ae9e79f8da	$9.92	5	59667-0075
NULL	NULL	NULL	NULL	NULL	NULL

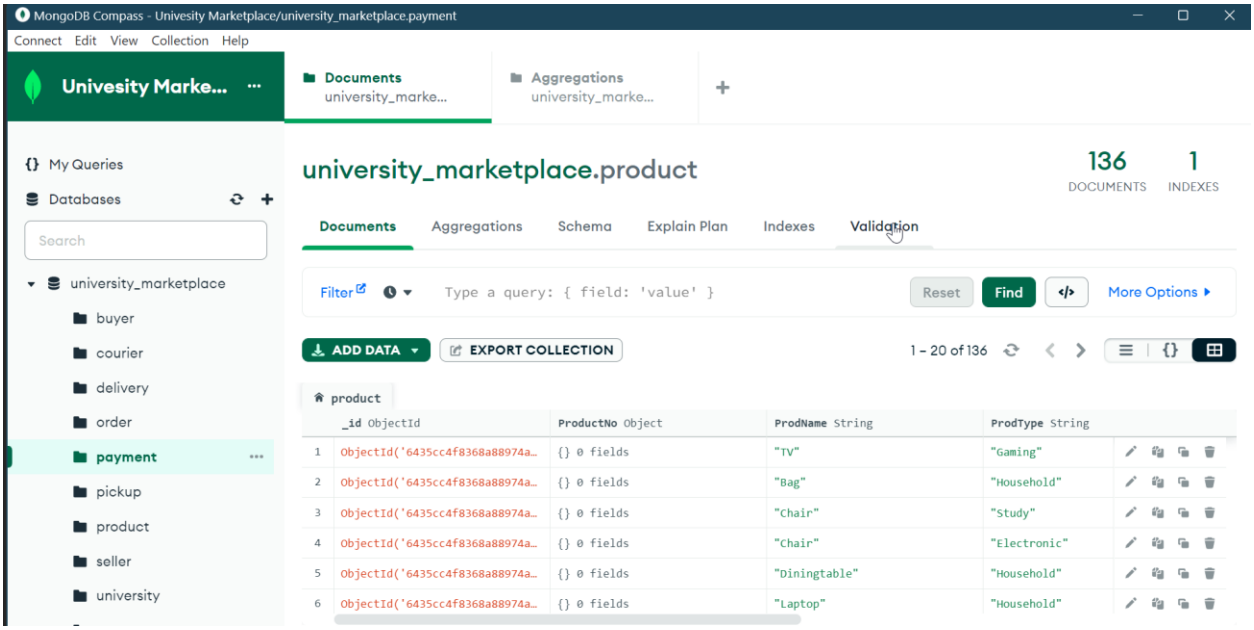
Query 7 : Retrieves all records from user who are not registered as seller

```
SELECT *
FROM user
WHERE NOT EXISTS( SELECT SellerID
                  FROM seller
        WHERE user.UserID = seller.SellerID);
```



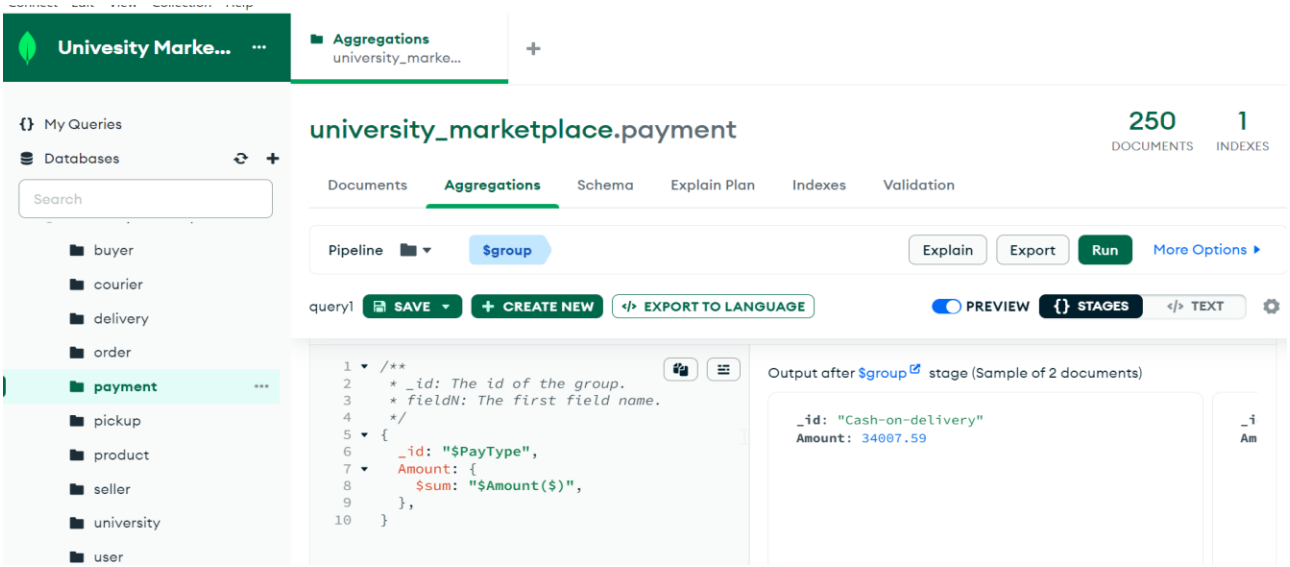
IMPLEMENTATION IN NOSQL

Preview of project dataset into MongoDB



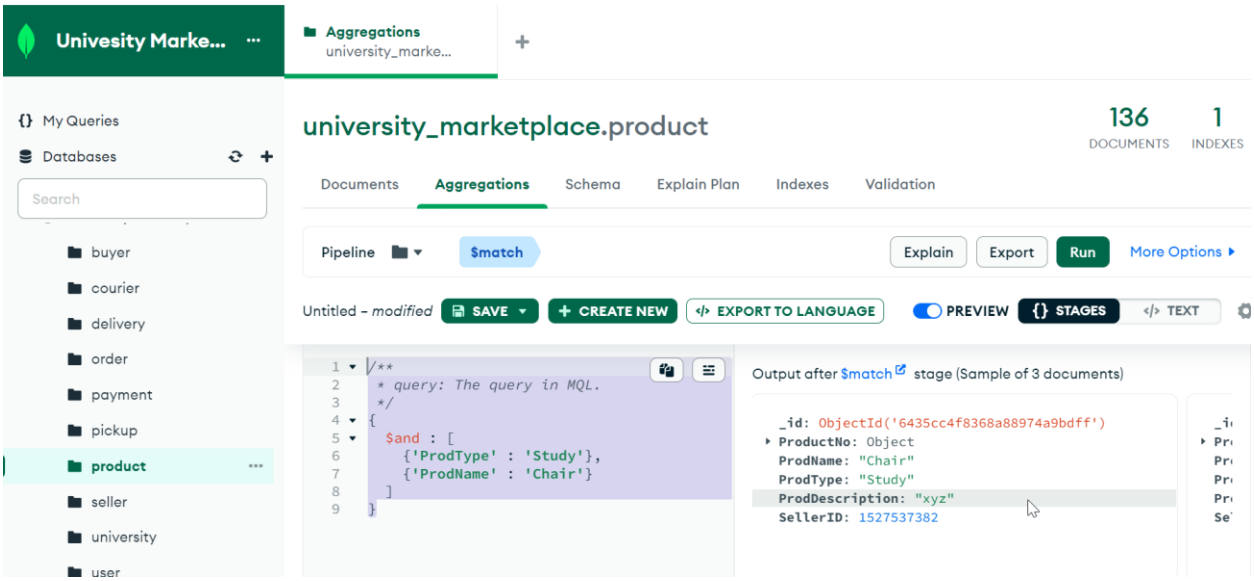
Query1 : This query gives total purchase value by payment type category i.e. how much amount of product purchased through cash-on-delivery and how much by prepaid.

```
{
 _id: "$PayType",
 Amount: {
  $sum: "$Amount($)"
 }}
```



Query2 : This query will return all the records having product type “Study” and product name “Chair” from the product table.

```
{
 $and: [
  { ProdType: "Study"},
  { ProdName: "Chair"}
 ]
}
```



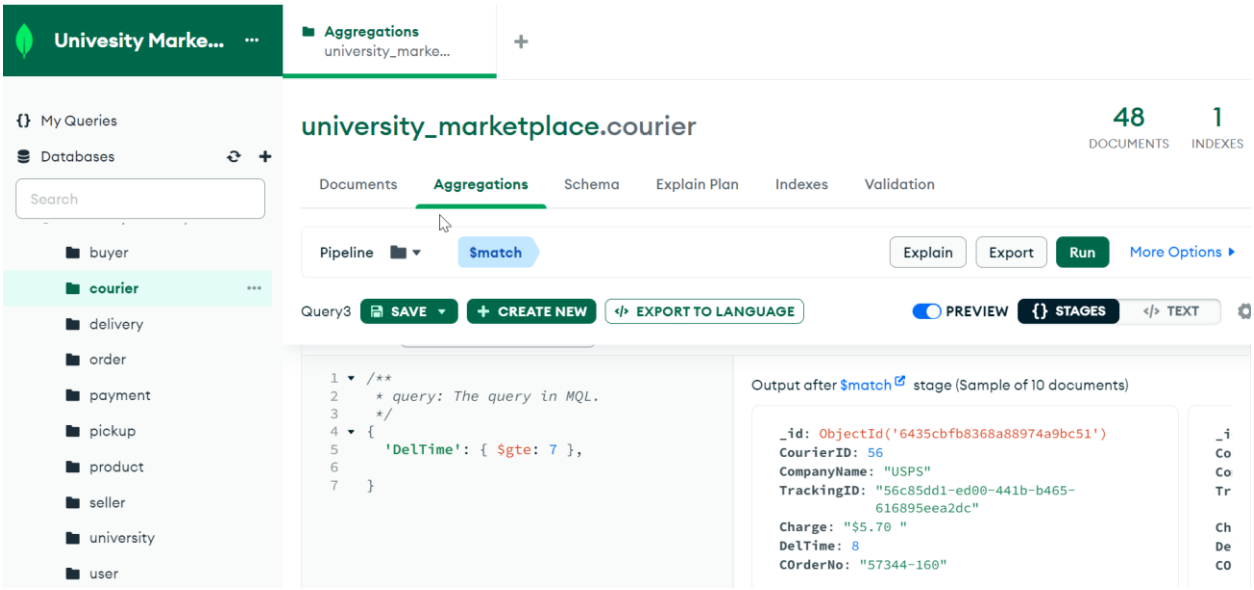
Query3 :

Stage1 : this query will return all the records which took 7 or more days to delivered

```
{
  DelTime: {
    $gte: 7}
}
```

Stage2 : This query will work on output of stage1 and provide company wise total no of delayed products

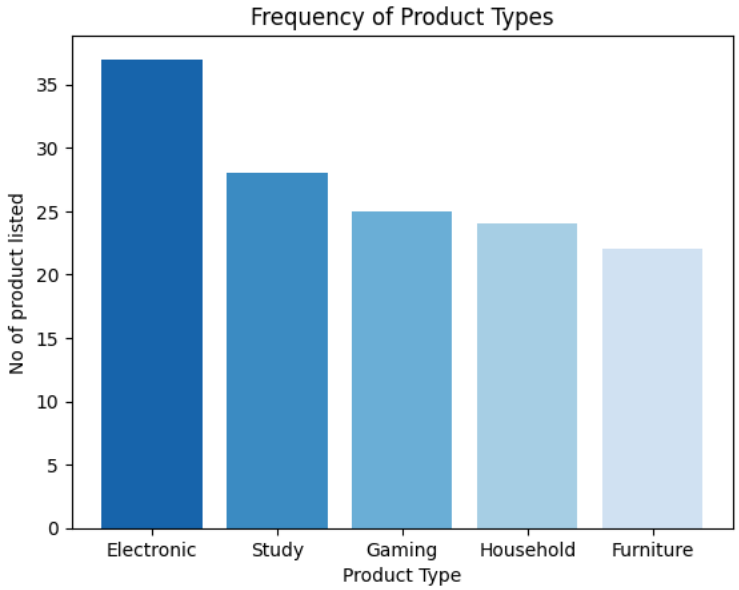
```
{_id: "$CompanyName",
  Deliveries: {
    $count: {} }}
```



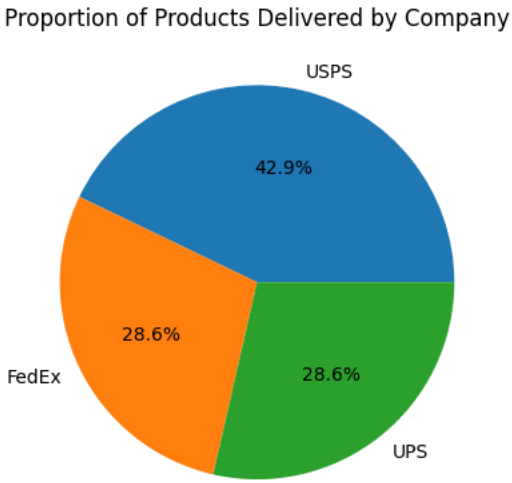
DATABASE ACCESS VIA PYTHON

To access the database, Python and the pymysql.connect library are used. The pd.read_sql_query method is used to run and retrieve the results of a query, which are already converted into a dataframe. Finally, matplotlib is used to visualize the analyzed data.

Below bar graph represents category wise number of products listed in our database.



Below pie chart represents percentage of product delivered by all courier companies.



Below table represents seller name who sold most number of products

	FirstName	LastName	num_products
0	Crissie	Beeck	2
1	Pollyanna	Tutin	2
2	Alfreda	Pabel	2
3	Allys	Odell	2
4	Bevon	Hoodless	2

FUTURE IMPLEMENTATION

We plan to add features to our online student marketplace, including image uploading for sellers, a messaging system for communication, and a bidding system for buyers. These additions will improve functionality and user experience. Sellers will be able to upload multiple images to showcase their items, while a messaging system will allow secure communication between buyers and sellers. The bidding system will provide a fair and exciting way for buyers to potentially get items at a lower price. These features will enhance our platform, making it easier and safer for students to buy and sell items.