CHAPTER 1

INTRODUCTION

- This Mobile commerce offers many benefits to both consumers and businesses. For consumers, it provides a convenient and easy way to shop online, them to browse and purchase products from anywhere at any time.
- For businesses, it opens up new opportunities to reach customers and increase sales, as well as providing valuable insights into customer behaviour and preferences. Mobile commerce can take many forms, including mobile websites, mobile apps, and mobile payments.
- Mobile websites are optimized for viewing on mobile devices and allow users to shop online using their mobile browser. Mobile apps are dedicated applications that can be downloaded and installed on mobile devices, providing a more seamless shopping experience.
- Mobile payments enable users to make purchases using their mobile devices, often through digital wallets or mobile payment platforms.
- Firebase is a cloud-based platform for developing mobile and web applications. Firebase simplifies the development process by providing easy-to-use tools and services that allow developers to focus on building their application's features rather than managing infrastructure.
- The Existing system contains agents between buyer and seller . Also, the existing system results in downturn in economy of retail shops as well as middle level family. This existing system makes maximum profit to the third party agent. This makes retail shoppers to become economically unstable.
- The Proposed System will make profit to the both buyer and seller as well as to make retail shop and middle level family to become economically stable.
- Chat box will be between the buyer and seller for making better interaction. This also makes profit to the retail shops and also additional to that rental system is included in this system which makes to reduce the useless product.

1.1 PROBLEM DEFINITION

- M-commerce is a rapidly growing trend that offers many benefits for both vendors and customers.
- In M-commerce Third Party Agent is making more Profit than the customer and vendor.
- How to overcome such Situation and how we can improve Rental System in M-commerce?

CHAPTER 2

LITERATURE REVIEW

The Kai Fan* et.al[1] explained about issues in authenticationof mobile commerce. For enhancement in authentication inpayment ,they came up with Secure Mutual Authentication Protocol (SMAP) which is based on the Universal 2nd Factor(U2F) protocol for mobile payment .This enhances security ofuser's account and improve payment through very less timeconsumption.

Ju Ouyang, and Xianping Chen[2] proposed a way to avoid adata leakage of customers in Ecommerce .They introduced two dimensional code in encryption system for logistics service.They used QR code scanner for verification of details.this is the one time scanner details which can't be used forsecond time.

Junyi He et.al[3] explained the existing system contains onlydata size. so,they explained about the parameters of data rate and temporal requirements. they classified the parameters on two basis, Homogeneous model and a Heterogeneous model. Both the auction satisfy the desired properties and it alsoshows efficiency of proposed system.

Falah Y H Ahmed ET.AL[4] developed an application in in Malaysia for Vehicle Rental System named as EZGO. Thisapplication allows the user to rent a car for their own purposes without the need to purchase and own for themselves.Usingquestionnaries ,they performed a survey of perpectivecustomers and design and development of mobile apps, UMLdiagrams for the card rental system they used agile approach.

Eric Hseuh-Chan Lu and Zhan-Qing Lin[5] developed a Bicycle-Sharing System (BSS) which allows users to rent the bicycle from any Automatic rental station placed in the city. This research uses the concept of Recurrent Neural Network(RNN) to predict the rental from users.

Fumin Zhu ET.AL[6] developed a model to detect fault clicks on Pay per Click(PPC) dynamically and interpreting databased on Machine Learning. The proposed tens or transformation algorithm with locality-sensitive hashing(LSH)is tested by extensive experiments using real-world data.

CHAPTER 3

THEORETICAL BACKGROUND

3.1 IMPLEMENTATION ENVIRONMENT

The implementation environment involves the following:

Identification of retail shops: The first step in the implementation is the identification of retail shops. This is done through a process of survey and verification by the respective State Governments and Union Territory Administrations.

3.2 SYSTEM ARCHITECTURE

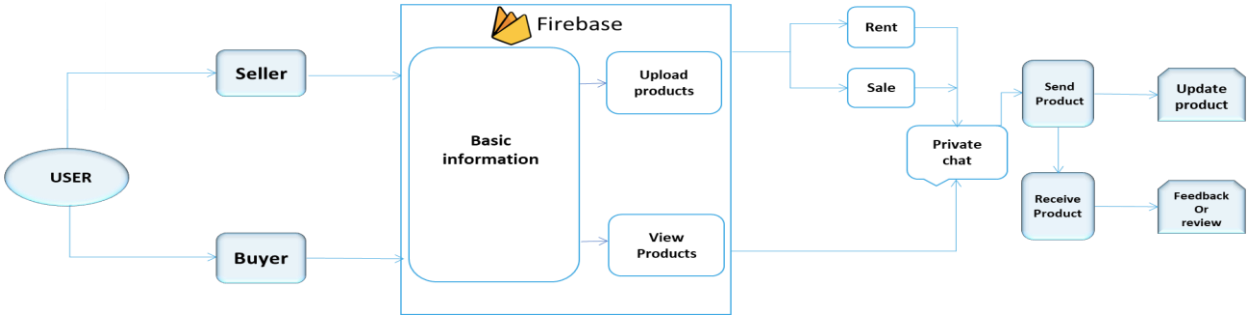


Fig3.1.Architecture diagram for DIMEMERCE

In Fig 3.1 explains Customer needs to sign up and login in the app. after that he can able to select whether he is came for buying, selling or renting the product. If Customer tries to buy or Getting product in rent, they can chat with seller directly for getting additional information of product. If seller tries to sell the product, seller should upload product details along with photo and when product is sold. He/she should update the product quantity as they stored in shop. If customer gets product, they will have an option of giving feedback to the product they bought.

3.3 PROPOSED METHODOLOGY

3.3.1 Data Set Description

This is normally represented as the data about data. It is also termed as metadata sometimes which gives the data about the data stored in the database. It defines each data term encountered during the analysis and design of a new system. Data elements can describe files or the processes. Following are some rules, which defines the construction of data dictionary entries:

- Words should be defined to understand for what they need and not the variable need by which they may be described in the program.
- Each word must be unique. We cannot have two definitions of the same client.
- Aliases or synonyms are allowed when two or more enters shows the same meaning. For example, a vendor number may also be called as customer number.10
- A self-defining word should not be decomposed. It means that the reduction of any information in to subpart should be done only if it is really required that is it is not easy to understand directly.

3.3.1a Eligibility Checking Table:

COLUMN NAME	DATATYPE	DESCRIPTION	CONSTRAINT
USERNAME	VARCHAR(100)	NAME OF THE USER	NOTNULL
PASSWORD	VARCHAR(100)	USER PASSWORD	NOTNULL
NAME	VARCHAR(100)	NAME OF THE USER	NOTNULL
EMAIL	VARCHAR(100)	USER EMAILID	NOTNULL

Fig 3.3.1a Eligibility checking table for DIMEMERCE

3.3.1b Verification Table:

COLUMN NAME	DATATYPE	DESCRIPTION	CONSTRAINT
NAME	VARCHAR(25)	NAME OF THE USER	NOTNULL
GOVT ID	BIGINT(12)	USER GOVT ID	NOTNULL
PHONENUMBER	BIGINT(20)	USER PHONE NUMBER	NOTNULL
ADDRESS	TEXT	USER ADDRESS	NOT NULL

Fig 3.3.1b Verification table for DIMEMERCE

3.3.1c Approval/ Reject Table:

COLUMN NAME	DATATYPE	DESCRIPTION	CONSTRAINT
APPLICATION_ID	VARCHAR(100)	USER APPLICATION ID	NOTNULL
NAME	VARCHAR(100)	NAME OF THE USER	NOTNULL
GOVT ID	BIGINT(20)	USER GOVT ID	NULL
SERVICE	VARCHAR(10)	USER SERVICE	NOTNULL

Fig 3.3.1c Approval/reject table for DIMEMERCE

3.3.2 Input Design

SOFTWARE REQUIREMENT

- Windows10& Above
- FLUTTER Framework
- GOOGLE Firebase
- API Integration
- VS code
- ML Integration

HARDWARE REQUIREMENT

- Processor: Minimum 1GHz
- Memory(RAM):4 GB
- Android or Ios

3.3.3 Module Design

UML DIAGRAMS

3.3.3a Usecase diagram

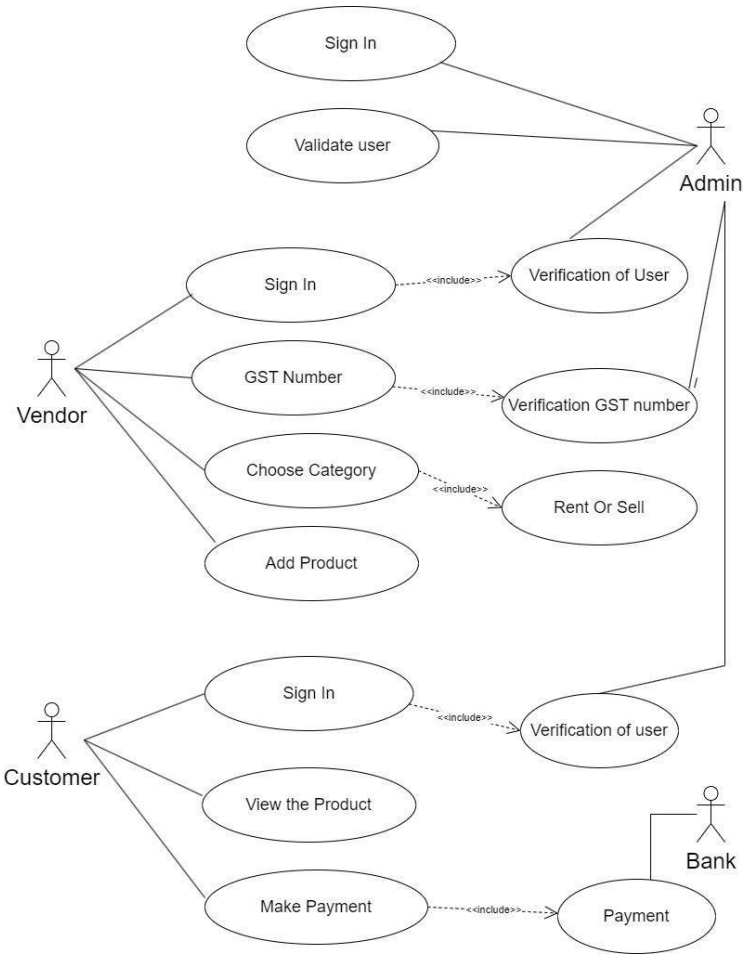


Fig3.3.3a Use case diagram for DIMEMERCE

This use case diagram refers to activities done by vendors and customer and their corresponding usecases. This use case diagram provides a high-level overview of the interactions between users and the DIMEMERCE system, outlining key functionalities and scenarios for both beneficiaries and administrators.

3.3.3b Class diagram

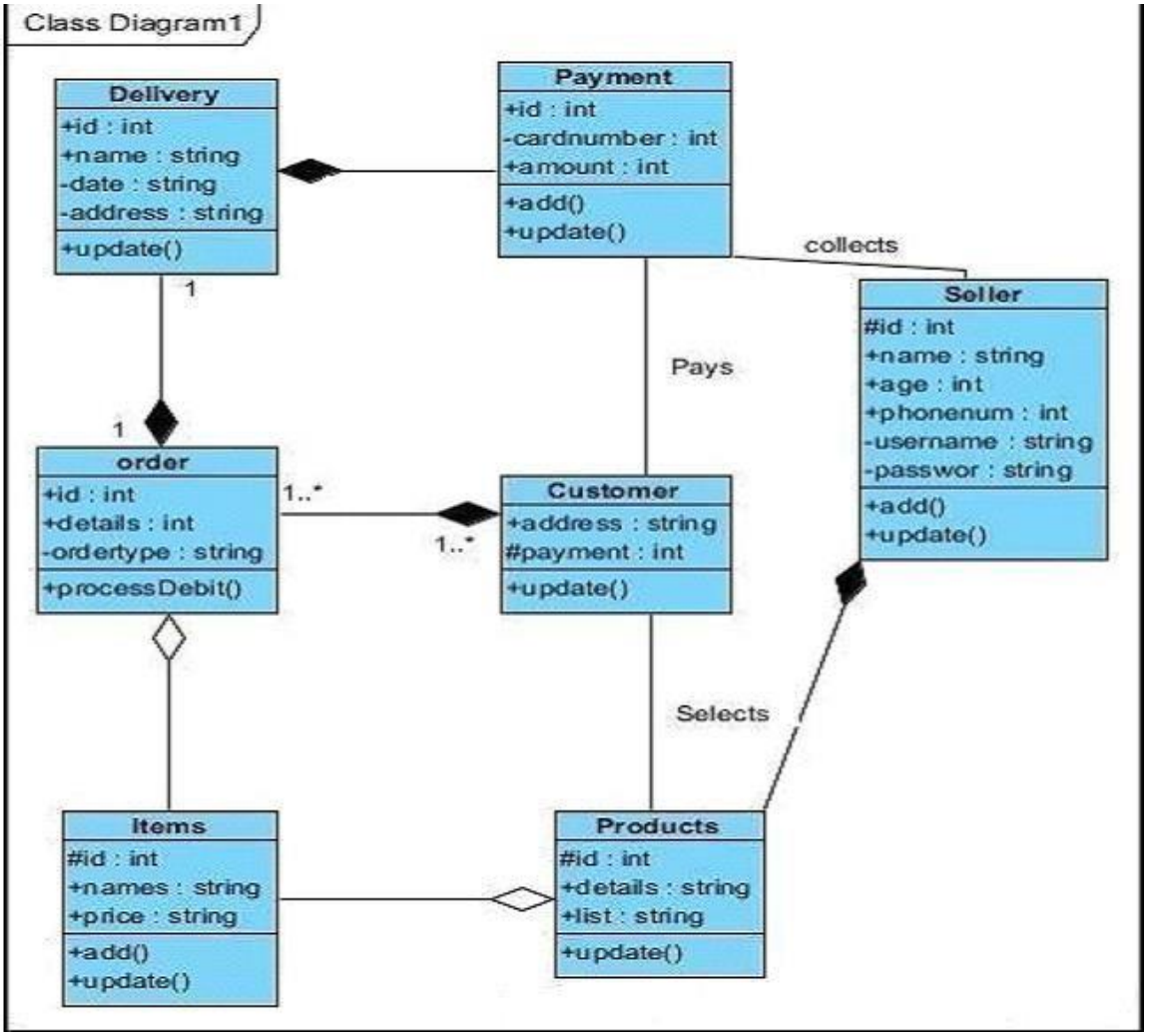


Fig3.3.3b Class diagram for DIMEMERCE

Creating a class diagram for the E-Commerce (DIMEMERCE) involves identifying the key classes and their relationships within the system. This use case diagram refers to activities done by technical ,support and service team and their corresponding use cases. In this class diagram, relationships such as aggregation and composition are not explicitly shown for simplicity. However, you can further refine the diagram by adding associations between classes and indicating the multiplicity of relationships based on the requirements of the DIMEMERCE system.

3.3.3c Sequence diagram

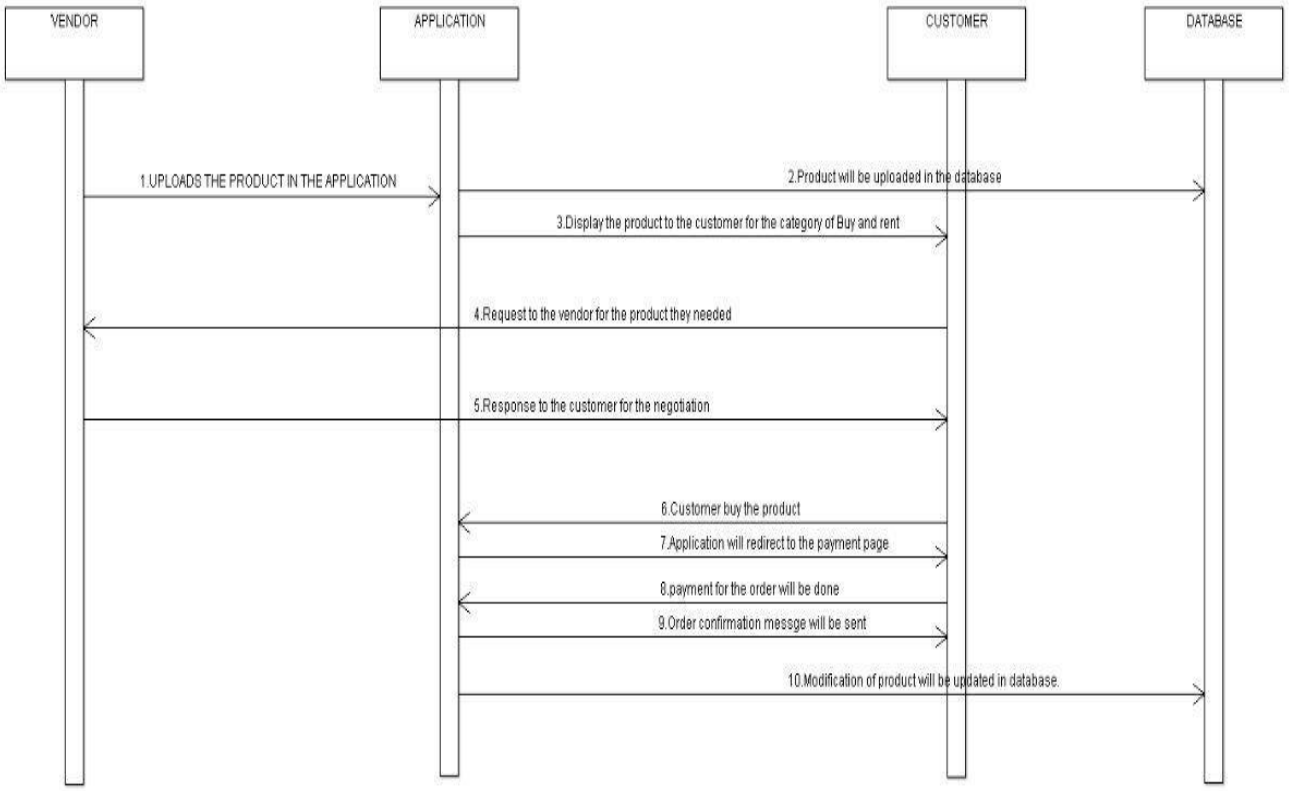


Fig3.3.3c Sequence diagram for DIMEMERCE

The sequence diagram of DIMEMERCE String matching shows the sequence of how technical team getting details from the government. Creating a sequence diagram for the Ecommerce (DIMEMERCE) involves illustrating the interactions between various components or actors in the system over time. This sequence diagram provides a step-by-step visualization of the interactions between the beneficiary and the DIMEMERCE system during the application, verification, calculation, payment ,and receipt of benefits process.

3.3.3d Collaboration diagram

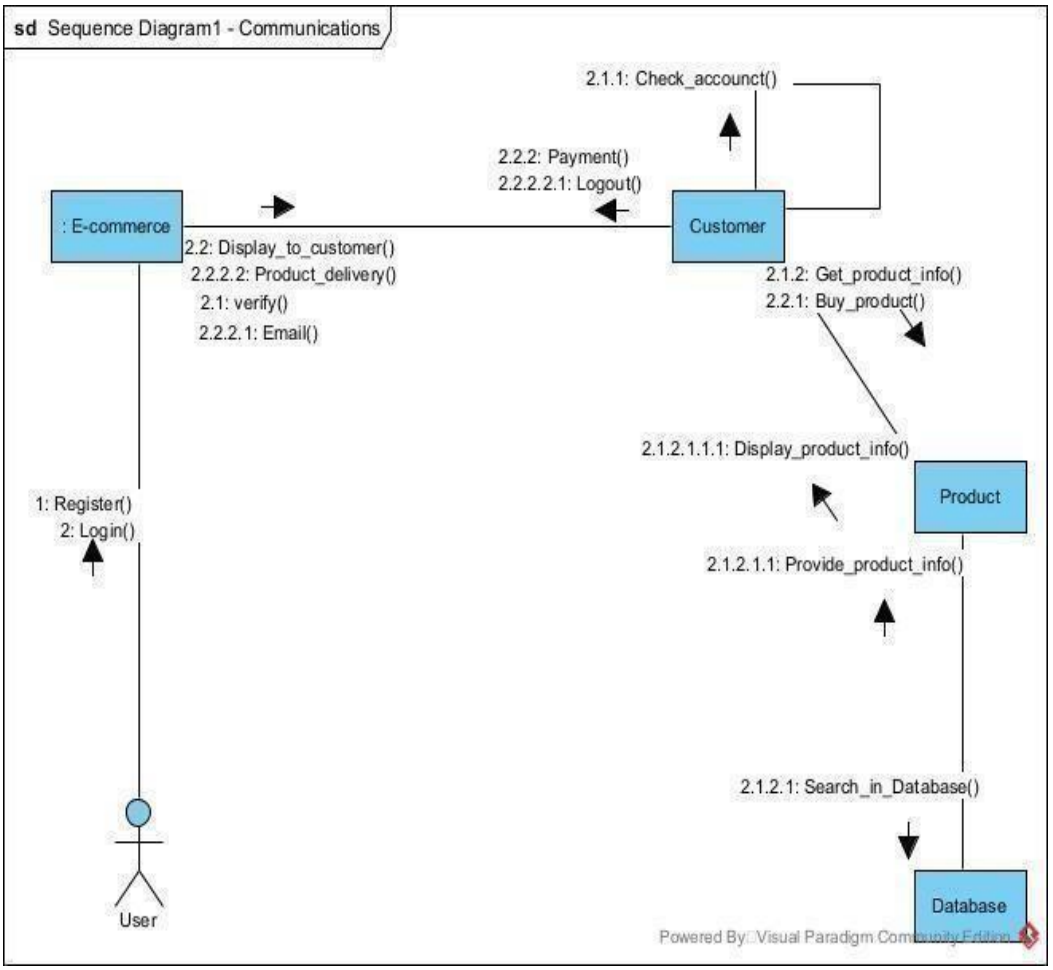


Fig3.3.3d Collaboration diagram for DIMEMERCE

The collaboration diagram of DIMEMERCE String matching shows the sequence of activities of creating a awareness for people. A collaboration diagram, also known as a communication diagram, illustrates how objects collaborate to achieve a specific task or scenario. This collaboration diagram demonstrates the interactions between the beneficiary, application, administrator, and DIMEMERCE. Each step involves communication between different components of the system to achieve the overall objective of the E-Commerce.

3.3.3e Activity diagram

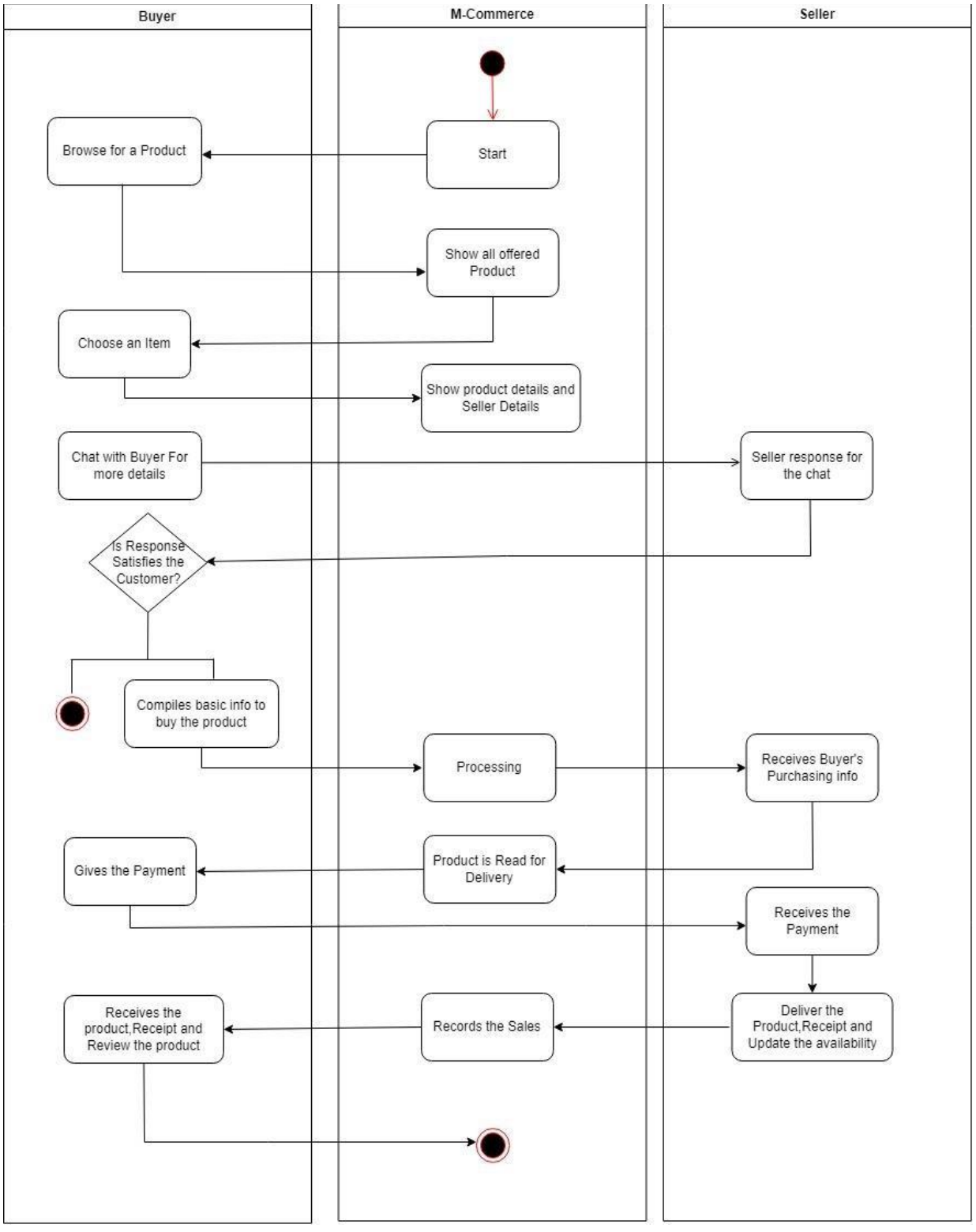


Fig3.3.3e Activity diagram for DIMEMERCE

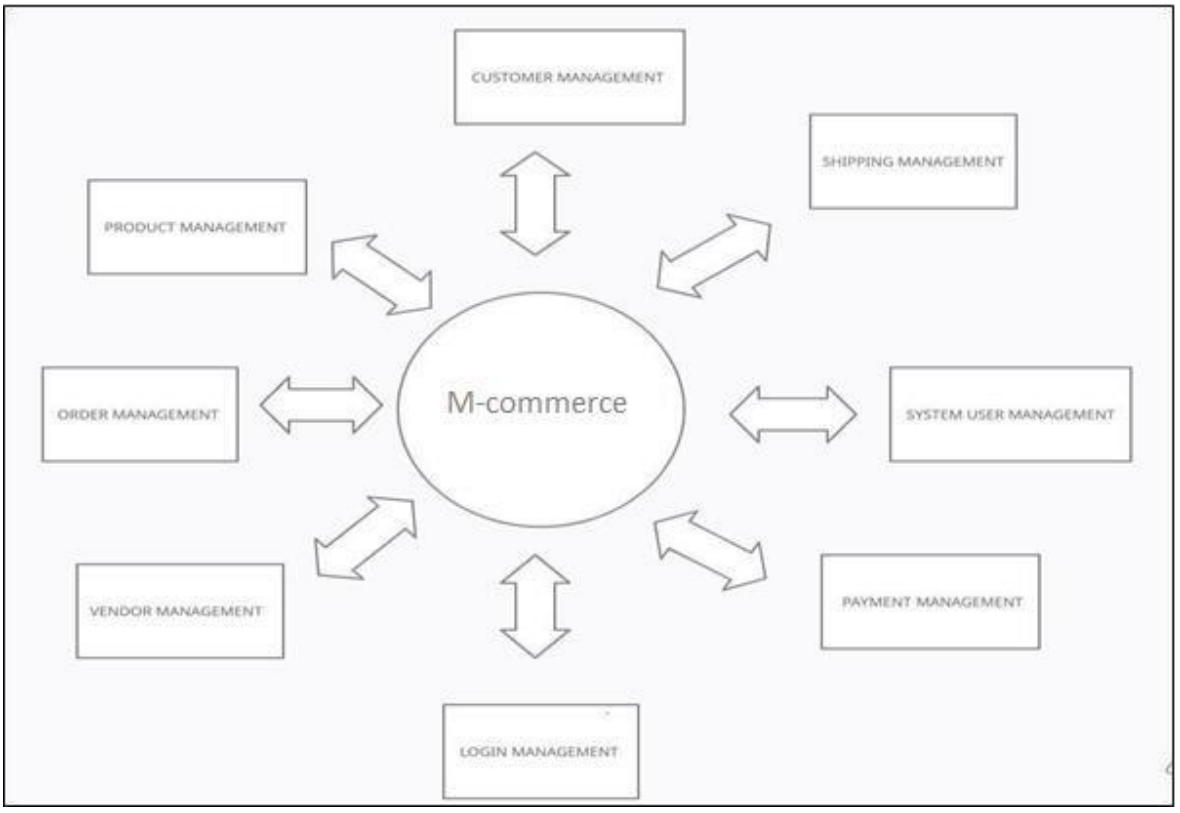
The activity diagram shows the step-by-step process for DIMEMERCE String Matching. The above is a simplified activity diagram for E-Commerce (DIMEMERCE), illustrating the steps involved in the

application process. This activity diagram provides a visual representation of the sequential steps involved in the application process for E-Commerce. Each step leads to the benefits are disbursed to the eligible beneficiary.

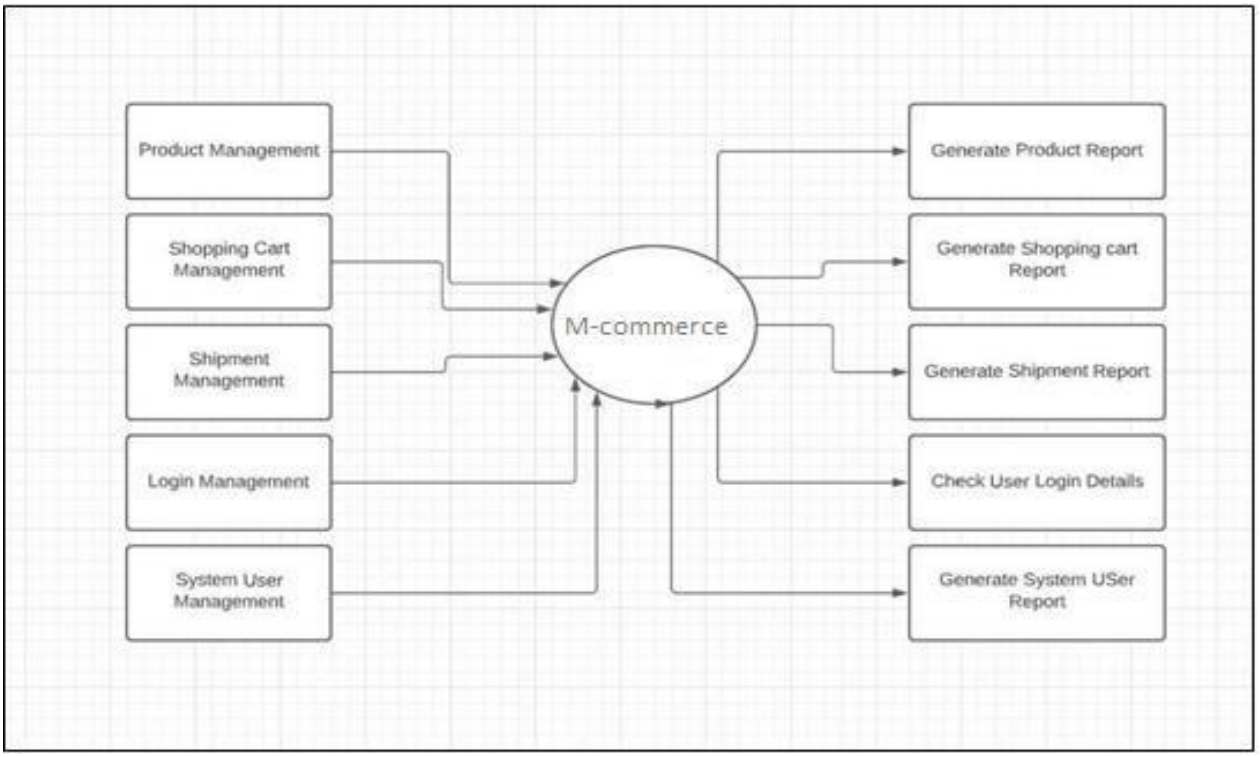
DATA FLOW DIAGRAM

A Data Flow Diagram (DFD) is a graphical representation of the "flow" of data through an information system, modeling its aspects. It is a preliminary step used to create an overview of the system which can later be elaborated DFDs can also be used for visualization of dataprocessing.

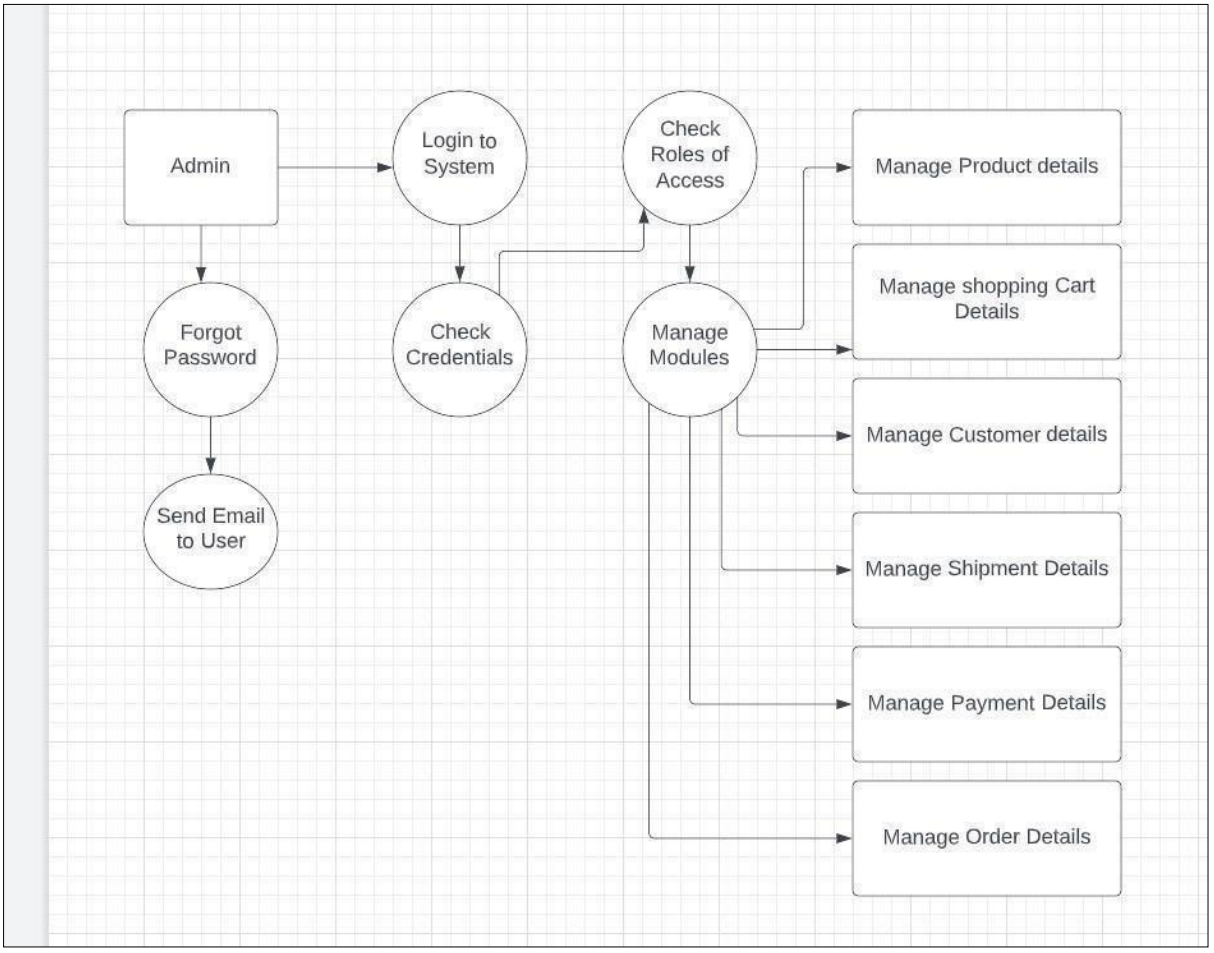
Level 0:



Level1:


Product Management
Shopping Cart Management
Shipment Management
Login Management
System User Management
M-commerce
Generate Product Report
Generate Shopping cart Report
Generate Shipment Report
Check User Login Details
Generate System USer Report

Level2:



CHAPTER 4
SYSTEM IMPLEMENTATION

M-Commerce consists of 4 modules:

They are

- Authentication and Validation module
- Category module
- Cart and payment module
- Review and Feedback Module

Authentication and Verification module:

- Authentication is done by Firebase Authentication SDK.
- The Firebase Authentication SDK provides methods to create and manage users that use their email addresses and passwords to sign in. Firebase Authentication also handles sending password reset emails.

Category module:

The category features in the app are Buying , Selling and Renting.

- The buying products are assured to be trustable products as the sellers are allowed to be upload products only if they provide any national Id.
- The renting products also assured as the lessor identification is validated with their national Id.
- The selling products must be assured such that the seller has to give the national Id.

Card and Payment module:

- Razorpay is a payment gateway in which the app is integrated.
- Razorpay is one of the most commonly used payment gateways in India and it enables to make payments through various payment modes such as debit/credit cards ,net banking ,UPI ,digital wallets etc.

Review and Feedback module:

- Each and every products in the app is valued through its review and feedback.
- The most positive review and feedback will make the product to sell at high rate through our recommended product lists.

CHAPTER 5
RESULTS AND DISCUSSION

5.1 TESTING

TEST CASE ID	TESTCASE/ ACTION TO BE PERFORMED	EXPECTED RESULT	ACTUAL RESULT	PASS/ FAIL
1.	Selecting "SIGNUP" button	Display signup page	Display signup page	Pass
2.	Selecting the "BECOME A VENDOR" button	Display vendor sign up page	Vendor sign up page is displayed	Pass
3.	Select "SIGN IN" Button	Display sign in box	Sign in page is displayed	Pass
4.	Selecting the "MOBILES" button	Enter into mobile product page	Enter into mobile product page	Pass
5.	Selecting "ELECTRONICS" Button	Enter into electronics product page	Enter into electronic product page	Pass
6.	Selecting the "UPLOAD" button	Uploads the details of the product	Uploads the details of the product	Pass
7.	Selecting "ADD PRODUCT" Button	Display the details should add for the products	Displays the details that should add for the product	Pass

Testcases and Report Table for DIMEMERCE

5.2 RESULT

Assessing the results of the E-Commerce (DIMEMERCE)involves examining various aspects of its performance and impact on the targeted beneficiaries. Here are some key results and outcomes associated with DIMEMERCE:

Increased financial security: DIMEMERCE has provided a source of regular income to millions of elderly individuals, widows, and persons with disabilities who were living below the poverty line. This has contributed to their financial security and helped them meet their basic needs.

Improved health outcomes: The financial assistance provided under DIMEMERCE has enabled beneficiaries to access healthcare services and essential medications, leading to improved health outcomes and wellbeing among the targeted population.

Reduction in vulnerability: By providing a safety net to vulnerable sections of society, DIMEMERCE has helped reduce their vulnerability to economic shocks, natural disasters, and other emergencies.

Promotion of financial inclusion: DIMEMERCE has facilitated financial inclusion by encouraging beneficiaries to open bank accounts and access other financial services, thereby promoting their economic empowerment and resilience.

Recognition of rights: DIMEMERCE has helped raise awareness about the rights of vulnerable groups and the importance of social security, contributing to efforts to protect and promote the rights within society.

5.3 DISCUSSION

Discussing the E-Commerce (DIMEMERCE) involves examining its objectives ,effectiveness, challenges, and potential for improvement. Here are some points to consider in a discussion about DIMEMERCE:

Objectives: DIMEMERCE aims to provide financial assistance and social security to vulnerable sections of society, including the elderly, widows, and persons with disabilities, who are living below the poverty line. It seeks to ensure a minimum standard of living and promote social inclusion among marginalized groups.

Effectiveness: DIMEMERCE has been successful in providing a safety net for millions of beneficiaries, offering them regular financial assistance to meet their basic needs. It has contributed to poverty alleviation efforts, improved health outcomes, and empowered women by providing them with financial independence.

Coverage and Reach: Despite its achievements, DIMEMERCE faces challenges related to coverage gaps and reaching all eligible beneficiaries, particularly in remote and marginalized areas. Efforts are needed to enhance outreach and ensure that all deserving individuals can access the benefits of the program.

Administrative Efficiency: Streamlining administrative processes and improving the efficiency of implementation is crucial for maximizing the impact of DIMEMERCE. This includes ensuring timely disbursal of payments, minimizing bureaucratic hurdles, and enhancing transparency and accountability in program management.

Financial Inclusion: Promoting financial inclusion among beneficiaries by facilitating access to banking services and promoting financial literacy can enhance their economic empowerment and resilience.

Sustainability: Ensuring the long-term sustainability of DIMEMERCE requires adequate funding, strategic planning, and regular monitoring and evaluation to assess its impact and effectiveness.

Partnerships and Collaboration: Collaborating with civil society organizations, community groups, and other stakeholders can strengthen the implementation of DIMEMERCE and improve its reach and impact.

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CHAPTER 6
CONCLUSION AND FUTURE WORK

CONCLUSION:

- In 2022, an increase of 3.4% was estimated of the generated e-waste globally, hitting 59.4Mt , which made the total unrecyclable e-waste on earth to 2022 is over 347 Mt.
- Most of the e-waste is generated due to unused product.
- We can able to convert most of the good condition unused product to useful product which makes reduces of 15-30% e-waste.
- This makes intermediate free , so that both Buyer and seller can able to get profitable. Thus it makes the economy upturn in local retail shops .

FUTURE ENHANCEMENTS

To make all types of products in a Single platform. The category page will also will have a category of price-drop product. Map implementation of all the shops in the entire location .To make the available product during flood or bad weather condition and reduce delivery time.

REFERENCES

1.Kai Fan*,Hui Li, Wei Jiang, Chengsheng Xiao, and Yintang Yang," Secure Authentication Protocol for Mobile Payment ",TSINGHUA SCIENCE AND TECHNOLOGY ISSNll1007-0214 09/10 pp610–620,Volume 23, Number 5, October 2018.

2.Ju Ouyang, and Xianping Chen ,"Personal Information Two-dimensional Code Encryption Technology in the Process of E-commerce Logistics Transportation ",SOUTH AFRICAN INSTITUTE OF ELECTRICAL ENGINEERS Vol.113 (1) March 2022.

3.Junyi He , Di Zhang , Ju Ren,YuezhiZhou,andYaoxueZhang,"Online Market Mechanism for Mobile Data Rate Trading With Temporal Constraints",IEEE INTERNET OF THINGS JOURNAL, VOL. 9, NO. 20, 15 OCTOBER 2022

4.Falah Y H Ahmed,Eizwan Bin Hazlan and Muhammad Irsyad Abdulla," Enhancement of MobileBased Application for Vehicle Rental",2021 IEEE 11th IEEE Symposium on Computer Applications & Industrial Electronics (ISCAIE), Penang, Malaysia, 03-04 April 2021.

5.Eric Hsueh-Chan Lu and Zhan-Qing Lin," Rental Prediction in Bicycle-Sharing System Using Recurrent Neural Network" ,IEEE ACCESS, Received April 12, 2020, accepted May 2, 2020, date of publication May 14, 2020, date of current version May 29, 2020.

6. Fumin Zhu , Chen Zhang , Zunxin Zheng and Sattam Al Otaib," Click Fraud Detection of Online Advertising–LSH Based Tensor Recovery Mechanism", IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS, VOL. 23, NO. 7, JULY 2022.

APPENDICES

A.1 SDG GOALS

The E-Commerce (DIMEMERCE) in India contributes to several Sustainable Development Goals

(SDGs) outlined by the United Nations. Here are some of the SDGs that DIMEMERCE aligns with:

GOAL 1: Decent Work and Economic Growth: By providing financial assistance, DIMEMERCE helps beneficiaries meet their basic needs and contributes to economic growth by stimulating local economies and reducing income inequality.

GOAL 2: Reduced Inequalities: DIMEMERCE aims to reduce inequalities by targeting vulnerable populations and providing them with marketed price and social security, thereby promoting social inclusion andequity.

GOAL 3: Peace, Justice, and Strong Institutions: DIMEMERCE contributes to SDG 16 by promoting social justice and strengthening institutions through its efforts to provide financial assistance and support to vulnerable populations, ensuring the rights and dignity are upheld.

A.2 SOURCE CODE

HOMEPAGE.DART

```
        import 'package:cached_network_image/cached_network_image.dart';
        import 'package:cloud_firestore/cloud_firestore.dart';
  import 'package:flutter/material.dart';           import
'package:carousel_slider/carousel_slider.dart';           import
'package:image_picker/image_picker.dart';     import
'package:m_commerce/pages/Post.dart';         import
'package:m_commerce/pages/home/drawer.dart';       import
'package:m_commerce/pages/home/Search.dart';       import
'package:m_commerce/pages/login/rent_splash.dart';
  import 'package:m_commerce/pages/viewproduct.dart';
  import '../category/seeAll.dart';
  import 'package:animated_background/animated_background.dart';

class Homepage extends StatefulWidget {   const
Homepage({super.key});

  @override
    State<Homepage>createState() => _HomepageState();
  }

  class _HomepageState extends State<Homepage> with TickerProviderStateMixin {
    List upl_image = [];
  getData() async {
  QuerySnapshotqn =
```

```
        await
FirebaseFirestore.instance.collection("upl_image").get();          for
(int i = 0; i<qn.docs.length; i++) {       setState(() {
  upl_image.add({
          "image": qn.docs[i]["image"],
          "PnameController": qn.docs[i]["pnameController"],
          "PdesController": qn.docs[i]["pdesController"],
          "MrpController": qn.docs[i]["mrpController"],
          "PpriceController": qn.docs[i]["ppriceController"],
          "AddrController": qn.docs[i]["addrController"],
          "categoryController": qn.docs[i]["categoryController"],
          "QuantityController": qn.docs[i]["QuantityController"]
        });
        // print(qn.docs[i]["image"]);
      });
    }
    return qn.docs;
  }

  @override
  void initState() {
  getData();
  super.initState();
  }

  Widget _buildCategory({required String name, required String photo}) {
    return Card(          shadowColor: Colors.grey,          elevation: 4,
      child: SizedBox(          height: 160,              width: 180,
child: Column(
  mainAxisAlignment: MainAxisAlignment.start,
       children: [ Container(
          height: 140,
width: 150,
          decoration: BoxDecoration(
color: Colors.deepPurple,                image:
DecorationImage(                  image:
AssetImage(
                    "images/$photo",
                  ),
                  fit: BoxFit.fill)),
        ),
  Text(
            name,
            style: const TextStyle(fontWeight: FontWeight.bold, fontSize: 16),
          )
        ],
      ),
    ),
  );
  }
```

```
    Widget _buildShop({required String photos}) {
      return Card(
color: Colors.white,
          shape: RoundedRectangleBorder(borderRadius:
BorderRadius.circular(25)),              elevation: 6,                child: Container(
              height: 100,                width: 100,              List icon = [
  Icons.person,
  Icons.email_rounded,
  Icons.location_on,
  Icons.phone_android_rounded,
  Icons.headset_mic
    ];

    List name = ["email Id", "Address", "Phone no.", "Help Center"];
  ImagePicker? image = ImagePicker();
Future getImage(ImageSource gallery) async {
      final image = await ImagePicker().pickImage(source:
ImageSource.gallery);       if (image == null) return;    setState(() {});
    }

    final data = ['1', '2'];    final
List<String>imgList = [
      'images/image1.jpeg',
      'images/image2.jpeg',
      'images/image3.jpg'
    ]
              ],
            ),
SingleChildScrollView(
scrollDirection: Axis.horizontal,
child: Row(                  children:
[                  _buildCategory(
photo: "electronics.jpg", name:
"Electronics"),
_buildCategory(photo:
"dresses.jpg", name: "Fashion"),
                _buildCategory(photo: "Furniture.jpeg", name: "Furniture"),
                _buildCategory(photo: "phone.webp", name: "Mobiles"),
                  _buildCategory(photo: "Grocery.png", name: "Grocery"),
                  _buildCategory(photo: "toys.jpeg", name: "Toys"),
                  _buildCategory(photo: "sports.jpg", name: "Sports"),
                  _buildCategory(photo: "Utensils.webp", name: "Home"),
                ],
              ),
            ),

            const Padding(
              padding: EdgeInsets.only(left: 16.0, top: 20),
child: Align(
```

```
                alignment: Alignment.topLeft, child: Text("Recommended")),
            ),

  SizedBox(
          height: 950,

                              children: [
  TextSpan(
                                 text:
                                   '\u{20B9}${upl_image[i]["MrpController"]}',
                                 style: const TextStyle(
decoration:
  TextDecoration.lineThrough,
  fontSize: 11,
                                    color: Colors.grey),
                               ),
  TextSpan(
                                  text:
                                    ' \u{20B9}${upl_image[i]["PpriceController"]}',
                                  style: const TextStyle(
  fontWeight: FontWeight.bold,          fontSize:
18)),
                                ],
                              ),
                            ),
                          )
                        ])),
                    ),
                ],
              ),
          ),
],
        ),
      ),
    ),
floatingActionButton: Row(
mainAxisAlignment: MainAxisAlignment.spaceAround,
      children: [
Padding(
            padding: const EdgeInsets.only(left: 30.0),
          child: FloatingActionButton.extended(
  heroTag: "btn1",
  focusColor: Colors.amber,
  backgroundColor:
Colors.black,                  icon:
const Icon(
  Icons.shopping_cart_checkout_rounded,
color: Colors.amber,
              ),
```

```
  onPressed: () {
  Navigator.push(context,
  MaterialPageRoute(builder: (context) => const Splash()));
                },
label: const Text(
"Rental Products",
                  style: TextStyle(color: Colors.amber),
                )),
            ),
  Padding(
              padding: const EdgeInsets.only(left: 35.0),
              child: FloatingActionButton.extended(
  heroTag: "btn2",
                elevation: 30,
                label: const Text(
                  "Upload",
                  style: TextStyle(color: Colors.white),
              ),
  backgroundColor: Colors.amber[600],
                icon: const Icon(
  Icons.add,
                  color: Colors.white,
                ),
  onPressed: () {
  Navigator.push(context,
  MaterialPageRoute(builder: (context) => const Post()));
                },
              ),
            ),
          ],
        ),
      );
    }
  }
```

CATEGORY.DART

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:carousel_slider/carousel_slider.dart';
import
'package:cached_network_image/cached_network_im
age.dart';
import 'package:flutter/material.dart';
import
'package:google_fonts/google_fonts.dart';
import '../viewproduct.dart';
```

```
class CategoryPage extends
StatefulWidget {
CategoryPage({this.category,
this.slider});   var category;   var
slider;
  @override
  State<CategoryPage>createState() => _CategoryPageState();
}

class _CategoryPageState extends State<CategoryPage> {
  @override
void
initState() {
    // TODO: implement initState
super.initState();
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
appBar: AppBar(
          leading: IconButton(
onPressed: () {
Navigator.of(context).pop();
            },
icon: Icon(
Icons.arrow_back_ios,
              color: Colors.black,
            )),
automaticallyImplyLeading:
false, toolbarHeight: 70,
centerTitle: true,
backgroundColor:
Colors.white,          elevation:
5,          title:
Text(widget.category,
style: GoogleFonts.poppins(
color: Colors.black, fontSize:
27,
fontWeight: FontWeight.w500,
            )),
        ),
        body: Column(children: [
Container(
           height: 200,
width: 410,
color: Colors.amber,
child: CarouselSlider(
items: widget.slider
.map<Widget>(
```

```
                (item) =>Container(
child: Padding(
                  padding: const EdgeInsets.symmetric(vertical: 8.0),
child: Center(
                   child: CachedNetworkImage(
imageUrl: item,
                    fit: BoxFit.cover,
width: 1000,
                  ),
                                image:
documentSnapshot['image'],
name: documentSnapshot[
'PnameController'],                                old:
documentSnapshot['MrpController'],
addr: documentSnapshot[
                                    'AddrController'],
                                ))),
child: Container(
decoration: BoxDecoration(
color: Colors.white,
borderRadius: BorderRadius.circular(13)),
                  child: Column(
                    children: [
Container(
                                height: 160,
color: Colors.white,
                                child: CachedNetworkImage(
imageUrl: documentSnapshot["image"],
                                )),
Container(
                              alignment: Alignment.center,
                              height: 75,
color: Colors.white,
child: Padding(
                                padding: const EdgeInsets.symmetric(
                                  horizontal: 4.0),
                                child: Text(
documentSnapshot["PnameController"]),
                              ),
                            ),
Expanded(
                              child: Container(
                                child: Text.rich(
TextSpan(
                                    children: [
TextSpan(
                                      text: '\u{20B9}' +
documentSnapshot[
```

```
                                        "MrpController"],
style: const TextStyle(
decoration: TextDecoration
.lineThrough,
fontSize: 11,
                                    color: Colors.grey),
                                ),
TextSpan(
                                text: '\u{20B9}' +
documentSnapshot[
                                        "PpriceController"],
style: TextStyle(
fontWeight: FontWeight.bold,
fontSize: 18)),
                                ],
                              ),
                            ),
                          ),
                        )
                      ],
                    ),
                  ));
              }
            },
          );
        }),
      )
    ]));
  }
}
```

PRODUCT.DART

```
import 'package:cached_network_image/cached_network_image.dart';
import
'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/material.dart';
import 'package:lottie/lottie.dart';
import 'package:m_commerce/pages/home/Search.dart';
import 'package:url_launcher/url_launcher.dart';
import 'package:velocity_x/velocity_x.dart';

class ViewProduct extends StatefulWidget {
```

```
  var
image;
var
name;
var
des;
var
old;
var
New;
var
addr;
var
quan;
ViewP
roduct
(

{this.New,
this.des,
this.addr,
this.image,
this.name,
this.old,
this.quan});

  @override
  State<ViewProduct>createState() => _ViewProductState();
}

class _ViewProductState extends
State<ViewProduct>     with
SingleTickerProviderStateMixin {   static
Future<void>openMAp(String addr) async {
    String googlemapUrl =
        "https://www.google.com/maps/search/?api=1&query=$addr";

    if (await canLaunch(googlemapUrl)) {
      await launch(googlemapUrl);
    } else {
      throw "Could not Open the Map";
    }
  }
  late AnimationController controller;
  List review = [
    "Video",
    "Reviews",
    "Privacy Policy",
    "Return Policy",
    "Support Policy"
```

```
 ];
 @override
void
initState() {
super.initSt
ate();
controller =
AnimationController(duration: Duration(seconds: 3),
vsync: this); controller.addStatusListener((status) async {
if (status == AnimationStatus.completed) {
Navigator.pop(context);
    }
  });
 }
 @override
void dispose()
{
controller.dis
pose();
super.dispose();
 }
 Future addtocart() async {
  final FirebaseAuth _auth = FirebaseAuth.instance;
  var currentUser = _auth.currentUser;
            ),
          ),
Padding(
            padding: const EdgeInsets.all(10.0),
            child: Row(children: [
Text.rich(
TextSpan(
                children: [
TextSpan(
                  text: '\u{20B9}${widget.old}',
style: const TextStyle(
                    decoration: TextDecoration.lineThrough,
fontSize: 13,
                    color: Colors.grey),
                ),
TextSpan(
                  text: ' \u{20B9}${widget.New}',
style: const TextStyle(
fontWeight: FontWeight.bold, fontSize: 18)),
                ],
              ),
            ),
          ]),
        ),
        10.heightBox,
Padding(
```

```
            padding: const EdgeInsets.symmetric(horizontal: 8),
child: Row(
mainAxisAlignment: MainAxisAlignment.spaceBetween,
children: [
ElevatedButton.icon(
onPressed: () {},
                    style: ButtonStyle(
                      elevation: const MaterialStatePropertyAll(10),
                      shape: MaterialStatePropertyAll(
RoundedRectangleBorder(
borderRadius:
BorderRadius.circular(20))),
backgroundColor:
MaterialStatePropertyAll(Colors.amber))
,                     icon:
Icon(Icons.message),
                    label: const Text("Message")),
ElevatedButton.icon(
onPressed: () {
openMAp(widget.addr);
                    },
                    style: ButtonStyle(
                      elevation:
MaterialStatePropertyAll(10),
shape: MaterialStatePropertyAll(                padding:
                const EdgeInsets.only(left: 18.0, right: 18, bottom: 40),
child: ListView.builder(
itemCount: review.length,
itemBuilder: ((context, index) {
return Padding(
padding: EdgeInsets.all(8),
                    child: ListTile(
contentPadding: EdgeInsets.all(3),
                      title: Text(
                        '${review[index]}',
                        style: TextStyle(
fontWeight: FontWeight.w600, fontSize: 18),
                      ),
                      trailing: Icon(
Icons.arrow_forward_outlined,
                        color: Colors.black,
                      ),
                    ),
                  );
                })),
            ))
          ],
        ),
      ),
    ),
```

```
floatingActionButton: StreamBuilder(
stream: FirebaseFirestore.instance
.collection("Favorite_item")
          .doc(FirebaseAuth.instance.currentUser!.email)
.collection("item")
.where("PnameController", isEqualTo: widget.name)
.snapshots(),
       builder: (BuildContext context, AsyncSnapshot<QuerySnapshot>
snapshot) {          try {             return Theme(                 data:
Theme.of(context).copyWith( floatingActionButtonTheme:
                    const FloatingActionButtonThemeData(
extendedSizeConstraints:
BoxConstraints.tightFor(
height: 50, width: 180))),                    child:
FloatingActionButton.extended(
                elevation: 10,
backgroundColor: Colors.amber, splashColor:
Colors.amber.shade800, onPressed: ()
=>addtocart(),                  icon: const
Icon(Icons.add_shopping_cart),
label: const Text("ADD TO CART")));
         } catch (e) {
print(e);
         }
         return Container();
       },
     ),
   );
  }
}
```

SEARCH.DART

```
import 'package:cached_network_image/cached_network_image.dart';
import
'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/material.dart';
import 'package:lottie/lottie.dart';
import
'package:m_commerce/pages/viewproduct.dart';
import 'package:velocity_x/velocity_x.dart';
class SearchPage extends StatefulWidget {
const SearchPage({super.key});
  @override
  State<SearchPage>createState() => _SearchPageState();
}
class _SearchPageState extends State<SearchPage> {
  String? _search;
  @override
```

```
  Widget build(BuildContext context) {     double
height = MediaQuery.of(context).size.height;
double width =
MediaQuery.of(context).size.width;     return
Scaffold( appBar: AppBar( backgroundColor:
Colors.amber, toolbarHeight: height * 0.09,
centerTitle: true, automaticallyImplyLeading:
false,
       title:     Row(mainAxisAlignment:     MainAxisAlignment.start,
children: [ IconButton( onPressed: () {
Navigator.of(context).pop();
            },
            icon: const Icon(Icons.arrow_back_ios)),
SizedBox(
          width: width * 0.75,
child: TextFormField(
              autofocus: true,
onChanged: ((value) {
setState(() {
                _search = value;
              });
             }),
             decoration: const
InputDecoration(                    filled:
true, fillColor: Colors.white,
prefixIcon: Icon(Icons.search),
hintText: "Search products",
labelStyle: TextStyle(
fontSize: 17,
                  color: Colors.black,
fontWeight: FontWeight.w400,
                ),
                border: OutlineInputBorder(
borderRadius: BorderRadius.all(Radius.circular(30))))),
         ),
       ]),
     ),
     body: Stack(children: [
StreamBuilder(
          stream: FirebaseFirestore.instance
.collection('Seller_req')
             .doc("A3YtV51DsJGf7ruoFV6x")
.collection("item")
.where('PnameController', isEqualTo: _search?.toLowerCase())
.snapshots(),
          builder:
             (BuildContext context, AsyncSnapshot<QuerySnapshot>
snapshot) {              if (!snapshot.hasData) {                 return const
Center(
               child: CircularProgressIndicator(),
```

```
                    );
                  } else if (_search != null) {
          return ListView.builder( itemCount:
          snapshot.data?.docs.length,
          itemBuilder: (context, index) {
          DocumentSnapshotdocumentSnapshot =
          snapshot.data!.docs[index];
                        String _name =
          snapshot.data?.docs[index]['PnameController'];
                        String img = snapshot.data?.docs[index]['image'];

                  return Padding(
                    padding: const EdgeInsets.all(5.0),
                    child: Card(
elevation: 3,                           child:
ListTile(                           title:
Text(_name),
leading: Container(
                          child: Image.network( img,
                           height: 100,
fit: BoxFit.cover,
width: 100,
                          ),
                         ), onTap:
() { Navigator.push(
                             context,
MaterialPageRoute(
                                builder: (context) =>ViewProduct(
                                    New: documentSnapshot[
                                       "PpriceController"],
addr: documentSnapshot[
                                       'AddrController'],
des: documentSnapshot[
'PdesController'],
                                    image: documentSnapshot['image'],
name: documentSnapshot[
'PnameController'],                                    old:
documentSnapshot[
                                       'MrpController'],
quan: documentSnapshot[
                                       "QuantityController"],
                                  )));
                        },
                      ),
                    ),
                  );
});              }
else {
              return Container();
            }
```

```
          }),
Center(
         child: LottieBuilder.network(
            "https://assets10.lottiefiles.com/packages/lf20_yhetm7ld.json"),
       ),
     ]),
   );
  }
}
```

ADD TO CART.DART

```
import 'package:cached_network_image/cached_network_image.dart';
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/material.dart'; import
'package:google_fonts/google_fonts.dart';
import 'package:m_commerce/pages/viewproduct.dart';

class Cart extends StatefulWidget {
  const Cart({super.key});

  @override
  State<Cart>createState() => _CartState();
}

class _CartState extends State<Cart> {
  @override
  Widget build(BuildContext context) {     double
height = MediaQuery.of(context).size.height;     double
width = MediaQuery.of(context).size.width;     int i =
0;
    double add = 0;

    return Scaffold( appBar:
AppBar(
automaticallyImplyLeading: false,
toolbarHeight: 80,
centerTitle: true, backgroundColor:
Colors.white,
       elevation: 5,         title:
Text("My Cart",             style:
GoogleFonts.poppins(
color: Colors.black, fontSize: 27,
fontWeight: FontWeight.w500,
          )),
     ),
```

```
     body: Stack(
       children: [ Center(
          child: Image.asset(
"images/cart1.png",
            color: Colors.white.withOpacity(0.3),

        style: TextStyle(fontWeight: FontWeight.w500, fontSize: 20),
       ));
   return Scaffold(
appBar: AppBar(
        title: Text("Product Upload Page"),
       ),
       body: SingleChildScrollView(
child: Container(            margin:
EdgeInsets.all(20),            child:
Column(
            children: [
TextField(
               controller: SnameController,
decoration: const InputDecoration(
prefixIcon: Icon(Icons.person),
hintText: "Seller Name", labelText:
"Seller Name", labelStyle:
TextStyle(
fontSize: 17,
                    color: Colors.black, fontWeight:
FontWeight.w400,
                  ),
                  border: OutlineInputBorder()), keyboardType:
TextInputType.name,
textInputAction: TextInputAction.done,
             ),
Padding(
               padding: const EdgeInsets.only(top: 14.0),
               child: TextField(
controller: PnoController,
                 decoration: const InputDecoration(
prefixIcon: Icon(Icons.phone_android_outlined),
hintText: "Phone Numer", labelText: "phone
Number", labelStyle: TextStyle(
fontSize: 17,
                    color: Colors.black,
fontWeight: FontWeight.w400,
                  ),
                  border: OutlineInputBorder()),
keyboardType: TextInputType.number, maxLength:
10,
textInputAction: TextInputAction.done,
               ),
             ),
```

```
Padding(
              padding: const EdgeInsets.only(bottom: 15.0),
              child: TextField(
controller: Gstcontroller,
decoration: const InputDecoration( prefixIcon:
Icon(Icons.content_paste_sharp),
hintText: "GST Number", labelText:
"GST Number", labelStyle:
TextStyle(
fontSize: 17,
                    color: Colors.black,
fontWeight: FontWeight.w400,
                  ),
                  border: OutlineInputBorder()), keyboardType:
TextInputType.name,
textInputAction: TextInputAction.done,
               ),
             ),
TextFormField(
              controller: emailcontroller,
decoration: const InputDecoration(
prefixIcon: Icon(Icons.email_rounded),
hintText: "email address", labelText: "email
address", labelStyle: TextStyle(
fontSize: 17,
                  color: Colors.black, fontWeight:
FontWeight.w400,
                ),
                border: OutlineInputBorder()), keyboardType:
TextInputType.text,
textInputAction: TextInputAction.done,
             ),
Padding(
              padding: EdgeInsets.only(top: 14.0),
child: TextFormField(                  controller:
AddrController,                  decoration: const
InputDecoration( prefixIcon:
Icon(Icons.location_on), hintText: "Address",
labelText: "Address", labelStyle: TextStyle(
fontSize: 17,
                    color: Colors.black,
fontWeight: FontWeight.w400,
                  ),
                  border: OutlineInputBorder()),
keyboardType: TextInputType.name, maxLines:
3,
textInputAction: TextInputAction.done,
               ),
             ),
Padding(
```

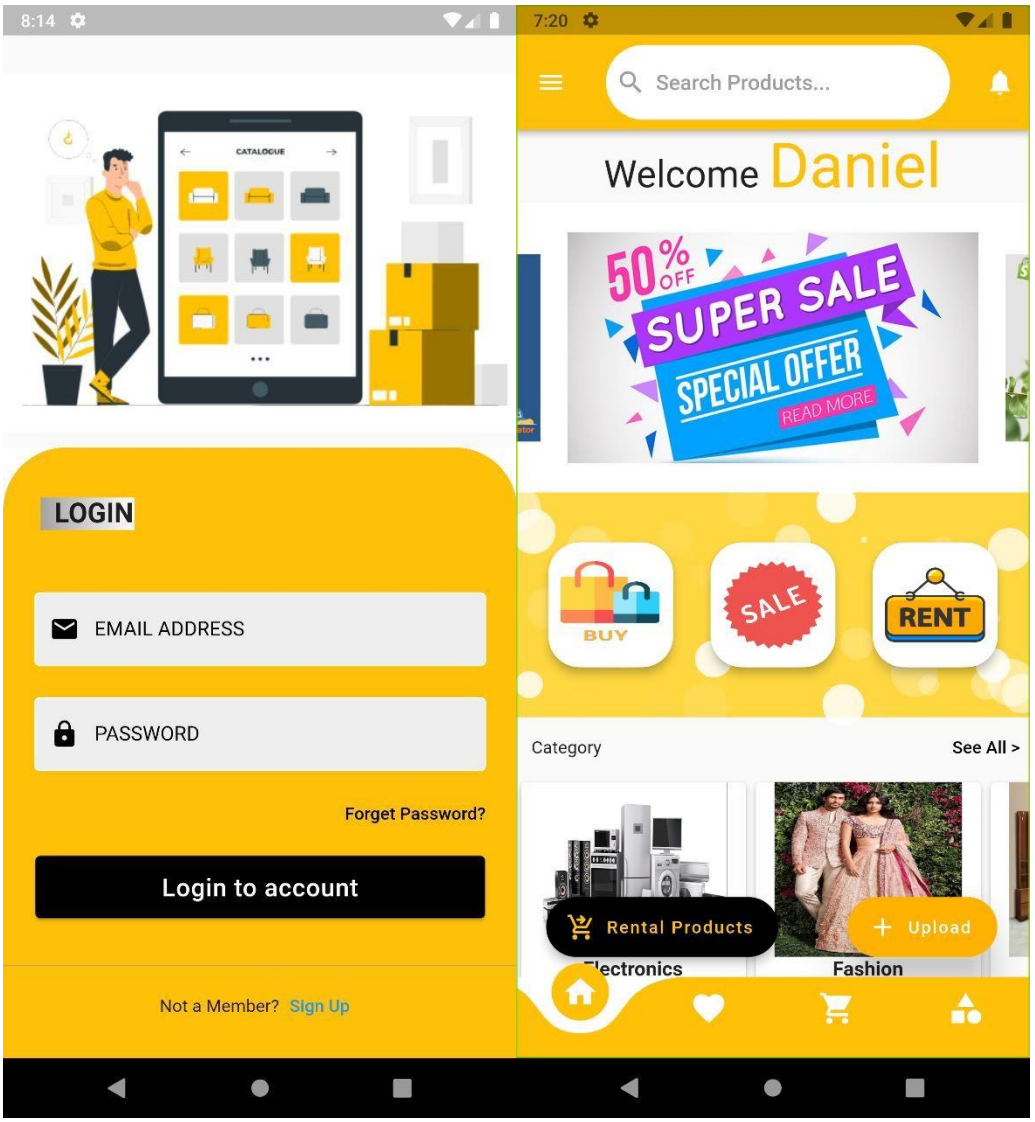
```
            padding: const EdgeInsets.only(top: 14.0),
            child: Container(
decoration: BoxDecoration(
border: Border.all(width: 1), borderRadius:
BorderRadius.circular(10)),
child: Column(children: [
const Align(
                  alignment: Alignment.centerLeft,
                  child: Text( "
Location",
                    style: TextStyle(fontSize: 15),
                  )),
Padding(
                 padding: const EdgeInsets.all(8.0),
child: CSCPicker(
                  layout: Layout.vertical,
defaultCountry: CscCountry.India,
disableCountry: true,
onCountryChanged: (Country) {},
onStateChanged: (state) { setState(() {
this.state = state;
                    });
                  },
onCityChanged: (city) {
setState(() { this.city =
city;
                    });
                  },
stateDropdownLabel: "State",
cityDropdownLabel: "City",
                ),
              ),
            ]),
          ),
        ),

                    color: Colors.black,
fontWeight: FontWeight.w400,
                  ),
                  border: OutlineInputBorder()),
keyboardType: TextInputType.number, maxLength:
6),
          ),
Padding(
            padding: const EdgeInsets.only(top: 14.0, right: 60),
child: TextField(                  controller: PpriceController,
decoration: const InputDecoration(                  //
prefixIcon: Icon(Icons.shopping_cart),                  icon:
Icon(Icons.currency_rupee_sharp),
```

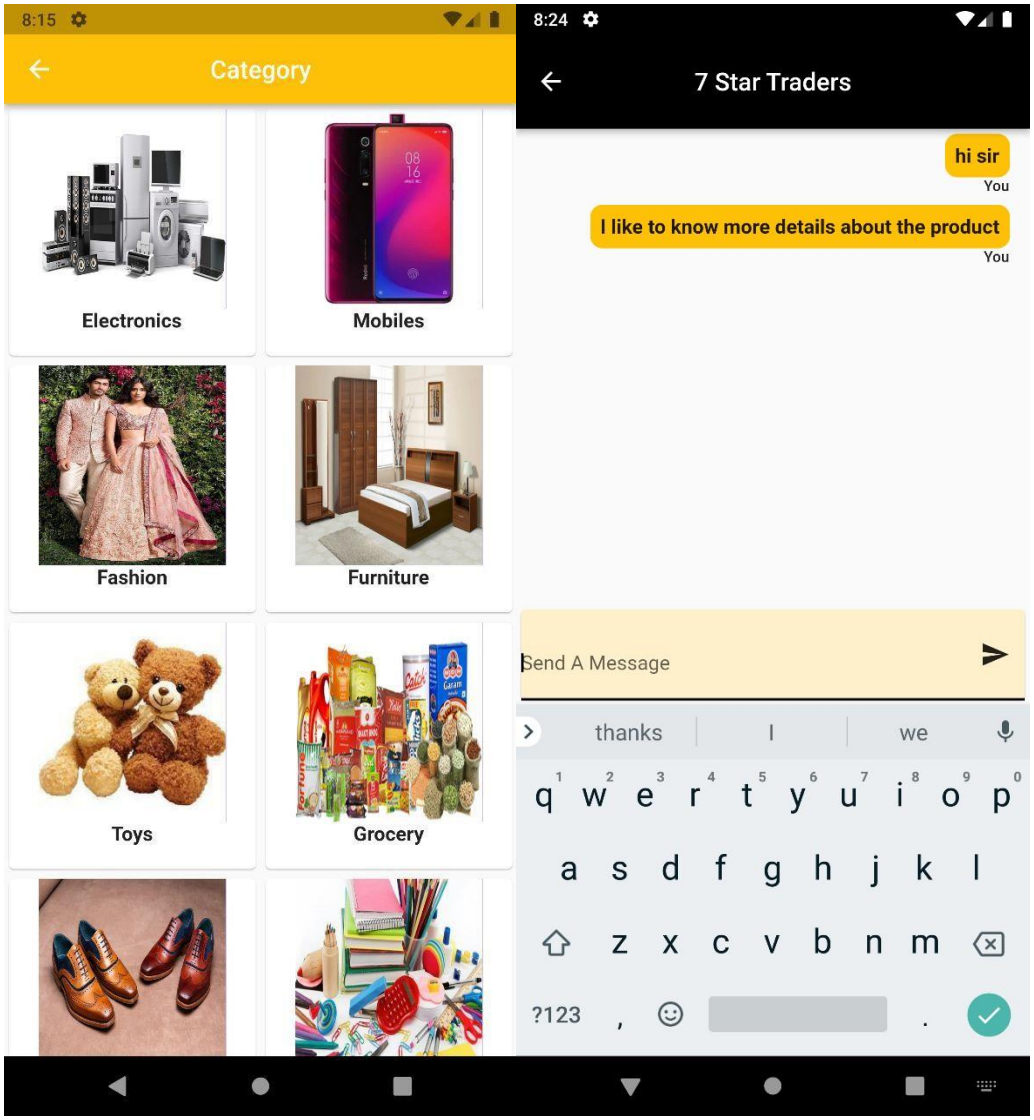
```
hintText: "Product Price", labelText:
"Product Price", labelStyle:
TextStyle(
fontSize: 17,
                    color: Colors.black,
fontWeight: FontWeight.w400,
                  ),
                  border: OutlineInputBorder()),
keyboardType: TextInputType.number, maxLength:
6),
            ),
ElevatedButton(
onPressed: () { senddata();
                },
                child: const Text("Upload"))
          ],
        ),
      ),
    ));
  }

getcam() async {
   // ignore: deprecated_member_use
   var img = await image.getImage(source: ImageSource.camera); setState(()
{
     file = File(img!.path);
   });
}
getgal() async {
   // ignore: deprecated_member_use
   var img = await image.getImage(source: ImageSource.gallery); setState(()
```

A.3 SCREENSHOT



Login Screen Home Page



Category Page

Chat Box

Application logo

Application Icon

PLAGIARISM REPORT

An Approach For Enhancement Of Retail Shops And Rental System

by Daniel George S

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An Approach For Enhancement Of Retail Shops And Rental System

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Abstract --- M-commerce is a rapidly growing trend that offers many benefits for both businesses and customers. It is convenient, secure, and allows businesses to reach more customers than ever before. As technology advances, M-commerce will become even more integrated into our lives. The future of mobile commerce is bright, and businesses should take advantage of this opportunity to reach more customers and increase sales. By taking the time to create a mobile-friendly website and leveraging the latest technologies, businesses can ensure a successful m-commerce experience for their customers .The main purpose is to take measure to reduce the interaction of agent between Buyer and Seller which makes profit to the third party agent. The existing system results in downturn in economy of retail shops as well as middle level family. The Proposed System will make more interaction between Buyer and Seller by making chat box to communicate Seller for more details. This also makes Profit to Retail shops and make a enhancement in Rental system in E-commerce.

Key Words: M-commerce, chat box, retail shops, Rental system, Flutter, Firebase ,E-waste.

I. INTRODUCTION

Mobile commerce offers many benefits to both consumers and businesses. For consumers, it provides a convenient and easy way to shop online, them to browse and purchase products from anywhere at any time. For businesses, it opens up new opportunities to reach customers and increase sales, as well as providing valuable insights into customer behaviour and preferences. Mobile commerce can take many forms, including mobile websites, mobile apps, and mobile payments. Mobile websites are optimized for viewing on mobile devices and allow users to shop online using their mobile browser. Mobile apps are dedicated applications that can be downloaded and installed on mobile devices, providing a more seamless shopping experience. Mobile payments enable users to make purchases using their mobile devices, often through digital wallets or mobile payment platforms.

Firebase is a cloud-based platform for developing mobile and web applications. Firebase simplifies the development process by providing easy-to-use tools and services that allow developers to focus on building their application's features rather than managing infrastructure. The Existing system contains agents between buyer and seller . Also, the existing system results in downturn in economy of retail shops as well as middle level family. This existing system makes maximum profit to the third party agent. This makes retail shoppers to become economically unstable.

The Proposed System will make profit to the both buyer and seller as well as to make retail shop and middle level family to become economically stable. Chat box will be between the buyer and seller for making better interaction. This also makes profit to the retail shops and also additional to that rental system is included in this system which makes to reduce the useless product.

II. LITERATURE SURVEY

Kai Fan* et.al[1] explained about issues in authentication of mobile commerce. For

enhancement in authentication in payment ,they came up with Secure Mutual Authentication Protocol (SMAP) which is based on the Universal 2nd Factor (U2F) protocol for mobile payment .This enhances security of user's account and improve payment through very less time consumption.

Ju Ouyang, and Xianping Chen[2] proposed a way to avoid a data leakage of customers in E-commerce .They introduced two dimensional code in encryption system for logistics service. They used QR code scanner for verification of details .this is the one time scanner details which can't be used for second time.

Junyi He et.al[3] explained the existing system contains only data size. so, they explained about the parameters of data rate and temporal requirements. they classified the parameters on two basis, Homogeneous request model and a Heterogeneous request model. Both the auction satisfy the desired properties and it also shows efficiency of proposed system.

Falah Y H Ahmed ET.AL[4] developed an application in in Malaysia for Vehicle Rental System named as EZGO. This application allows the user to rent a car for their own purposes without the need to purchase and own for themselves. This project is based on an agile approach for the design and development of mobile apps, developed UML diagrams for the car rental system, and they performed a survey of prospective customers using questionnaires.

Eric Hseuh-Chan Lu and Zhan-Qing Lin[5] developed a Bicycle-Sharing System (BSS) which is one of the thriving applications of smart transportation system. It allows users to rent the bicycle from any Automatic rental station. This research uses the concept of Recurrent Neural Network (RNN) to predict the rental from users.

Fumin Zhu ET.AL[6] developed a model to detect fault clicks on Pay per Click (PPC) dynamically and interpreting data based on Machine Learning. The proposed tensor transformation algorithm with locality-sensitive hashing (LSH) is tested by extensive experiments using real-world data.

TOLULOPE OLAGUNJU ET.AL[7] developed a model to understand the key issues affecting African mobile ecommerce applications by performing sentiment analysis of users reviews from seven top African mobile ecommerce applications. It implemented two sentiment analysis approaches, which are Linguistic Inquiry Word Count (LIWC) and Machine Learning (ML), to classify user reviews into positive or negative sentiment polarity to reveal various business, legal and technology issues, as well as positive factors such as ease of use, fast delivery time and affordable items.

JUN LI ET.AL[8] developed a model to investigate the effects of a user's risk perception, perceived ease of use, perceived usefulness and attitude on a user's willingness to use Alipay, by using an extended version of the Technology Acceptance Model (TAM). This model was tested with the use of Structural Equation Modeling (SEM) and the data was collected from 491 users in China. The results show that perceived ease of use and perceived usefulness has a significant effect on user's attitudes and intentions to use Alipay and the risk perception has a negative effect on perceived ease of use and perceived usefulness.

YANJIE JI et.al[9] explained about bike rental system. they described in 3 stages of bike surplus, bike deficient and updating the stages. They can able to balance the bike rental system in that region. They used monetary incentive mechanism to find the region of renting the bike.

Yexin Li and Yu Zheng[10] predicted about bike usage in the city. They also predicted about bike usage in upcoming period. They used Gaussian process regressor for the prediction. A Transition based Inference (TINF) used to inform the return demand of rented bike. They used 3 level hierarchal model for calculation. they used the parameter of check in time, checkout time , time the ride was taken.

III. PROPOSED SYSTEM

The Proposed System is to make the Web and mobile App for renting and buying the product. The App will be developed by Flutter Framework using Dart language integrated with Firebase Database for authentication and storing the data.Flutter is an open-source UI toolkit developed by Google that allows developers to build high-quality, natively compiled applications for mobile, web and desktop from a single codebase. Dart is the programming language used for building Flutter applications.

Firebase is a mobile and web application development platform that provides developers with a suite of tools and services to build and manage cloud-hosted applications. Firebase offers features such as real-time database, authentication, hosting, storage, and more.

Flutter and Firebase are often used together to build robust, scalable, and feature-rich mobile applications. With Flutter's widgets and Firebase's services, developers can quickly create and deploy mobile applications with minimal coding efforts.

Consist of chat box for customer and Seller to enhance security. By our project, The Proposed System will also contain Retail shops so that customer can able to identify the product they needed in their surrounding. The customer can able to get the product directly to the retail shops through the location of shops during tight spot. . Our motto is also to make the unused product bring to the useful action. So, the proposed will also consist of Rental system .The Product will be given to Rental based to customer by providing valid id number.

This system makes profit to both buyer and seller and also to the retail shops. So, this idea makes Retail shops to earn profit in digital system also .So, that Retail shoppers life will be enhanced which makes customer to know the original cost and quality of Product

A. Architecture Diagram

Customer needs to sign up and login in the app. after that he can able to select whether he is came for buying, selling or renting the product. If Customer tries to buy or Getting product in rent, they can chat with seller directly for getting additional information of product. If seller tries to sell the product, seller should upload product details along with photo and when product is sold. He/she should update the product quantity as they stored in shop. If customer gets product, they will have an option of giving feedback to the product they bought

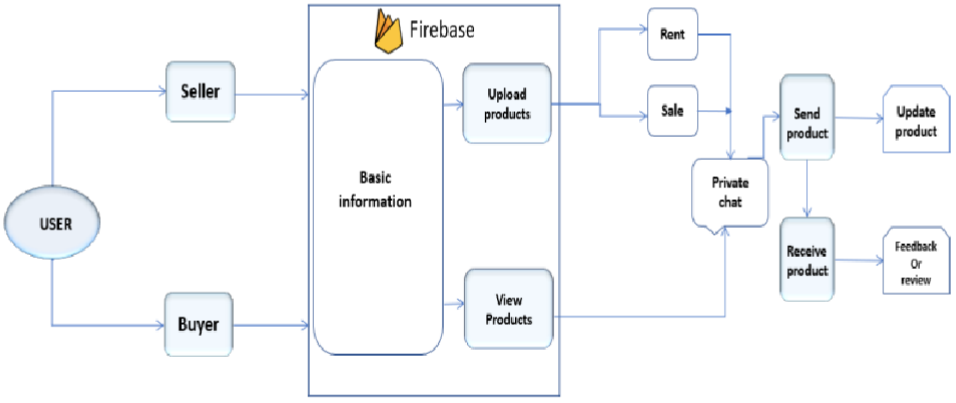

Fig3.1

B. MODULES

1. User

The user can be a Seller or Buyer .When the Buyer login the app, he needs to give the Basic information and can view the products . Meanwhile ,the Seller needs to give his information to upload the products.

2. Information

For the Buyer the information details is simple ,just his name and stuff like that. But for the Seller the details are like GST number, his address , phone number and more and more specific details such as the product details.

3. Upload Products

After the Seller give his personnel details and the details of the product to be uploaded, the product is uploaded to the app and it can be viewed by the buyer. The upload section consists of two part Rent and Sale and the Seller has to select the particular section to upload his product.

4. View Products

The buyer can view the products which he was searching for his need in the app. If the product satisfies his needs he can proceed for order.

5. Private Chat

The Buyer can chat with the seller to know more about the product details. The Seller can send more details to the buyer by sending more images of the products ,etc. It makes the Buyer to feel trustworthy to buy the products.

6. Send Product

After the order is confirmed by the Buyer , the seller sends the product order buy the Buyer.

7. Receive Product

The product sent from the Seller is received by the Buyer.

8. Product Update

After the product has been sent , the seller has to update the availability of the products.

9. Feedback

After the product received by the Buyer, he has to give the feedback about the experience and the product usage.

IV. RESULT AND DISCUSSION

The result shows the Mobile app interface of the m-commerce app

A. Login Page

Figure 1.1 shows the login page of the app where the user login the app by giving his email address and its password. If he do not have an account, sign up for new account by giving email address , name and password .

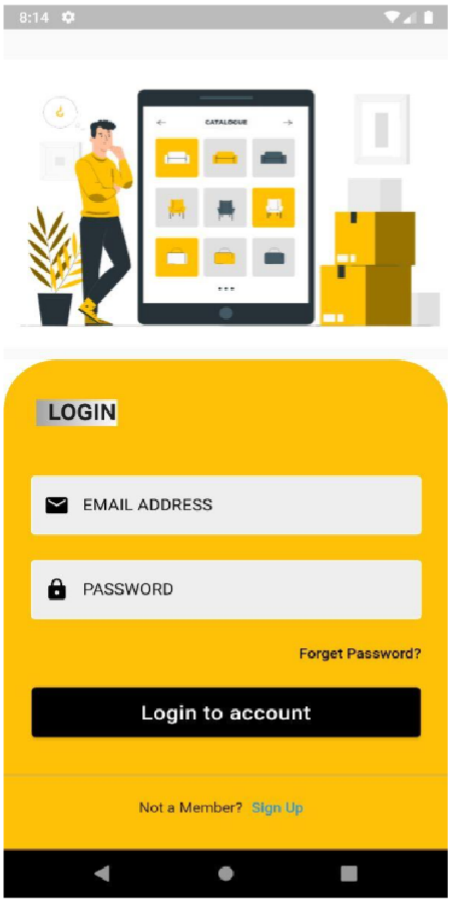

Fig 4.1

B. Home Page

Figure 1.2 shows the Home page of the app where we can search for the require products to be ordered or search for availability of the product in nearby shops. Or we can upload the products to the app by clicking the upload button. It redirect to the page of the product details where we have to give the details of the product.

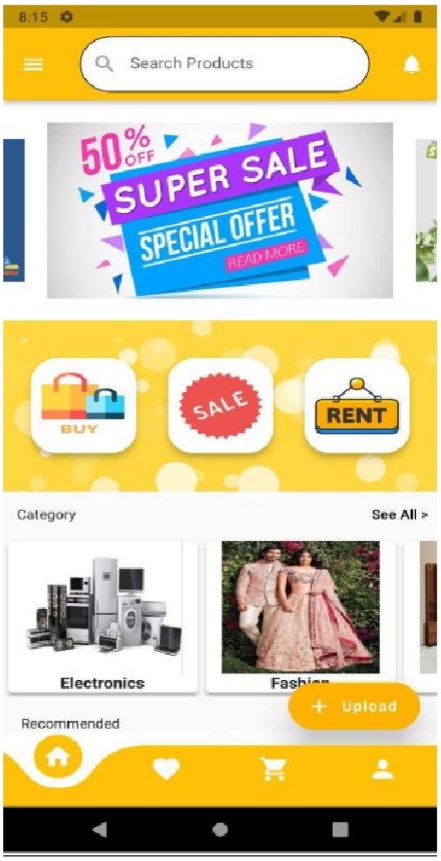

Fig 4.2

C. Category

Figure 1.3 shows the category page of the app where it shows the category of products available in the app. The buyer can view the products based on the category they need in this page. By clicking the category, eg. Electronics it redircts to the Electronics page where the buyer can able to view the products based on electronics.

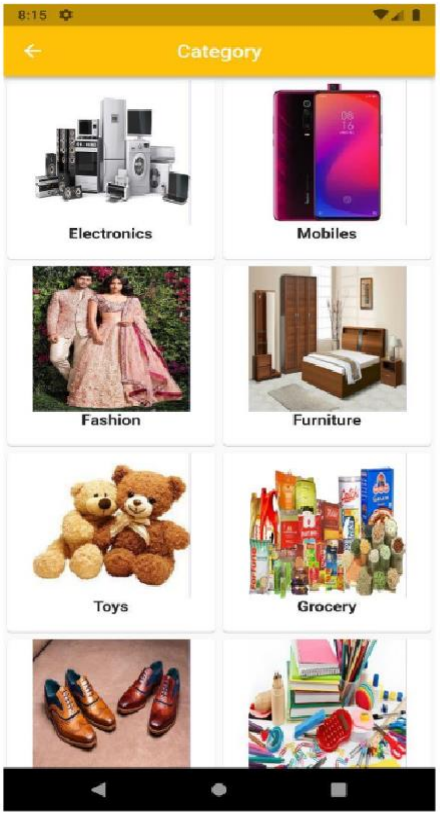

Fig 4.3

D. Chat Box

Figure 1.4 shows the chat between the Seller and Buyer. Here the Buyer can send messages to Sender to know more details about the product.

Fig 4.4

V. CONCLUSION

As a conclusion, this mcommerce application will make upturn in profit to both buyer and seller and provide better interaction between buyer and seller. This leads to the upturn in economy of Retail shop's. Moreover , this application leads the growth of rental product in this digital world. Thus by using rental products , the world will step into the e-waste rerduction . Thus this application gives enhancement to the economy of Retail shops and it makes the people to use the Rental system which it leads to e-waste reduction.

REFERENCE

1.Kai Fan* Hui Li, Wei Jiang, Chengsheng Xiao, and Yintang Yang,"Secure Authentication Protocol for Mobile Payment",TSINGHUA SCIENCE AND TECHNOLOGY ISSNll1007-0214 09/10 pp610–620,Volume 23, Number 5, October 2018.

2.Ju Ouyang, and Xianping Chen,"Personal Information Two-dimensional Code Encryption Technology in the Process of E-commerce Logistics Transportation",SOUTH AFRICAN INSTITUTE OF ELECTRICAL ENGINEERS Vol.113 (1) March 2022.

3.Junyi He , Di Zhang , Ju Ren,Yuezhi Zhou,and Yaoxue Zhang,"Online Market Mechanism for Mobile Data Rate Trading With Temporal Constraints" IEEE INTERNET OF THINGS JOURNAL, VOL. 9, NO. 20, 15 OCTOBER 2022

4.Falah Y H Ahmed,Eizwan Bin Hazlan and Muhammad Irsyad Abdulla," Enhancement of Mobile-Based Application for Vehicle Rental", 2021 IEEE 11th IEEE Symposium on Computer Applications & Industrial Electronics (ISCAIE), Penang, Malaysia, 03-04 April 2021.

5.Eric Hsueh-Chan Lu and Zhan-Qing Lin," Rental Prediction in Bicycle-Sharing System Using Recurrent Neural Network",IEEE ACCESS, Received April 12, 2020, accepted May 2, 2020, date of publication May 14, 2020, date of current version May 29, 2020.

6.Fumin Zhu , Chen Zhang , Zunxin Zheng and Sattam Al Otaib," Click Fraud Detection of Online Advertising–LSH Based Tensor Recovery Mechanism", IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS, VOL. 23, NO. 7, JULY 2022.

7.TOLULOPE OLAGUNJU, OLADAPO OYEBODE , AND RITA ORJ,"Exploring Key Issues Affecting African Mobile eCommerce Applications Using Sentiment and Thematic Analysis",IEEE ACCESS volume8,Received April 28, 2020, accepted May 27, 2020, date of publication June 4, 2020, date of current version July 1, 2020.

8.JUN LI , JING WANG , SHANYONG WANGh , AND YU ZHOU,"Mobile Payment With Alipay: An Application of Extended Technology Acceptance Model", IEEE ACCESS volume 7,Received January 14, 2019, accepted January 29, 2019, date of publication March 25, 2019, date of current version April 26, 2019.

9.YANJIE JI ,XUE JIN,XINWEI MA AND SHUICHAO ZHANG,"How Does Dockless Bike-Sharing System Behave by Incentivizing Users to Participatein Rebalancing?",IEEE XPLORE,Received February 27, 2020, accepted March 12, 2020, date of publication March 23, 2020, date of current version April 7, 2020. Digital Object Identifier 10.1109/ACCESS.2020.2982686.

10.Yexin Li and Yu Zheng,"Citywide Bike Usage Prediction in a Bike-Sharing System" IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING, VOL. 32, NO. 6, JUNE

An Approach For Enhancement Of Retail Shops And Rental System

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An Approach for Enhancement of Retail Shops and Rental System

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Abstract—This M-commerce is a rapidly growing trend that offers many benefits for both businesses and customers. It is convenient, secure, and allows businesses to reach more customers than ever before. As technology advances, M-commerce will become even more integrated into our lives.The future of mobile commerce is bright, and businesses should take advantage of this opportunity to reach more customers and increase sales. By taking the time to create a mobile-friendly website and leveraging the latest technologies, businesses can ensure a successful m-commerce experience for their customers .The main purpose is to take measure to reduce the interaction of agent between Buyer and Seller which makes profit to the third party agent. The existing system results in downturn in economy of retail shops as well as middle level family. The Proposed System will make more interaction between Buyer and Seller by making chat box to communicate Seller for more details. This also makes Profit to Retail shops and make a enhancement in Rental system in E-commerce.

Index Terms— M-commerce, chat box, retail shops, Rental system, Flutter, Firebase ,E-waste.

I. INTRODUCTION

This Mobile commerce offers many benefits to both consumers and businesses. For consumers, it provides a convenient and easy way to shop online, them to browse and purchase products from anywhere at any time. For businesses, it opens up new opportunities to reach customers and increase sales, as well as providing valuable insights into customer behaviour and preferences. Mobile commerce can take many forms, including mobile websites, mobile apps, and mobile payments. Mobile websites are optimized for viewing on mobile devices and allow users to shop online using their mobile browser. Mobile apps are dedicated applications that can be downloaded and installed on mobile devices, providing a more seamless shopping experience. Mobile payments enable users to make purchases using their mobile devices, often through digital wallets or mobile payment platforms.

Firebase is a cloud-based platform for developing mobile and web applications. Firebase simplifies the development process by providing easy-to-use tools and services that allow developers to focus on building their application's features rather than managing infrastructure. The Existing system contains agents between buyer and seller . Also, the existing system results in downturn in economy of retail shops as well as middle level family. This existing system makes maximum profit to the third party agent. This makes retail shoppers to become economically unstable.

The Proposed System will make profit to the both buyer and seller as well as to make retail shop and middle level family to become economically stable. Chat box will be between the buyer and seller for making better interaction. This also makes profit to the retail shops and also additional to that rental system is included in this system which makes to reduce the useless product.

II. RELATED WORK

The Kai Fan* et.al[1] explained about issues in authentication of mobile commerce. For enhancement in authentication in payment ,they came up with Secure Mutual Authentication Protocol (SMAP) which is based on the Universal 2nd Factor (U2F) protocol for mobile payment .This enhances security of user's account and improve payment through very less time consumption.

Ju Ouyang, and Xianping Chen[2] proposed a way to avoid a data leakage of customers in E-commerce .They introduced two dimensional code in encryption system for logistics service.They used QR code scanner for verification of details .this is the one time scanner details which can't be used for second time.

Junyi He et.al[3] explained the existing system contains only data size. so,they explained about the parameters of data rate and temporal requirements. they classified the parameters on two basis,Homogeneous model and a Heterogeneous model. Both the auction satisfy the desired properties and it also shows efficiency of proposed system.

Falah Y H Ahmed ET.AL[4] developed an application in in Malaysia for Vehicle Rental System named as EZGO. This application allows the user to rent a car for their own purposes without the need to purchase and own for themselves.Using questionnaries ,they performed a survey of perpective customers and design and development of mobile apps,UML diagrams for the card rental system they used agile approach.

Eric Hseuh-Chan Lu and Zhan-Qing Lin[5] developed a Bicycle-Sharing System (BSS) which allows users to rent the bicycle from any Automatic rental station placed in the city. This research uses the concept of Recurrent Neural Network (RNN) to predict the rental from users.

Fumin Zhu ET.AL[6] developed a model to detect fault clicks on Pay per Click(PPC) dynamically and interpreting data based on Machine Learning. The proposed tensor transformation algorithm with locality-sensitive hashing(LSH) is tested by extensive experiments using real-world data.

TOLULOPE OLAGUNJU ET.AL[7] conducted a study to investigate the factors influencing African mobile ecommerce applications by analyzing user reviews from the top seven applications. The researchers employed sentiment analysis using two approaches: Linguistic Inquiry Word Count (LIWC) and Machine Learning (ML). By categorizing user reviews into positive or negative sentiment polarity, the study aimed to uncover positive factors such as ease of use and the variety of business offerings..

JUN LI ET.AL[8] proposed a model to explore how a user's risk perception, perceived ease of use, perceived usefulness, and attitude influence their willingness to use Alipay, using an extended version of the Technology Acceptance Model (TAM). The researchers employed Structural Equation Modeling (SEM) to test the model, collecting data from 491 users in China. The study's findings revealed that perceived ease of use and perceived usefulness significantly impacted users' attitudes and intentions to use Alipay. Additionally, the research demonstrated that risk perception had a negative influence on perceived ease of use and perceived usefulness.

YANJIE JI et.al[9] explained about bike rental system. they described in 3 stages of bike surplus, bike deficient and updating the stages. They can able to balance the bike rental system in that region. They used monetary incentive mechanism to find the region of renting the bike.

Yexin Li and Yu Zheng[10] predicted about bike usage in the city. They also predicted about bike usage in upcoming period. They used Gaussian process regress or for the prediction. A Transition based Inference (TINF) used to inform the return demand of rented bike. They used 3 level hierarchal model for calculation. they used the parameter of check in time, checkout time , time the ride was taken.

Suvarna HiremathET.AL[11] developed a project to investigate about the most important retail techniques and the way they implemented in modern and traditional retail . The motto of this project is to estimate the importance of various retail marketing strategies such as pricing,growth,promotional. They concludes that both traditional and modern retail pattern follow different marketing strategy to influence the customers.

AmeyThakur[12]developed a website for Car Rental System to reserve car from any location in the world. The consumer creates an account by giving his necessary details asked in the website. Its gives is best to match the requirements of the consumer in the car they need. He used DBMS,XAMPP,PHP,PHPMYADMIN concept for the backend database.

Rana MostaghelET.AL[13] explained about the development of the retail industry in the current world. They says that this pace difference is due to Covid-19 crisis. They focused on the retail business innovation , how digitalization impacts to retail business and identify the areas for future research to enhance .

Shan Du and Hua Li[14] developed a project on Mobile Commerce by applying three types of knowledge such as cluster view timezone view and timeline view. They used the strength of citation bursts to analyze keywords and put result into the I-Modelwhich they made a set of knowledge maps to show the future trend of Mobile commerce and analyze results based on I-model.

Ruofei Chen Et.AL[15] authored a journal article focused on the application of augmented reality (AR) in retail settings. The study aimed to explore the existing areas of academic research within this domain. There are 3 major research avenues and theoretical bases emerged. AR adoption , AR user experience and AR shopping experience are the three factors.

KujtimHameli[16] explained about relationship between Retailing sector and business retail sector. the retailing sector are divided into two types: in store and out of store. The in store consist of characteristics like ownership, merchandise and price. whereas out of store consist of direct selling, direct marketing and automatic venging selling

Alexios Vasileiadis[17] proposed about customer's view on perceived risk and trust of e-commerce. He suggested that developers and tester to enhance security and online vendors should increase the transparency level and law makers should enhance the laws for online vendors.

MáriaOleárová and Richard Fedorko[18] explained about deepen knowledge of business in e commerce. They introduced a business strategy in m commerce by acquiring knowledge on previous records.

Patsy Perry and Rosy Boardman et.al[19] proposed a new idea of implementing Augmented Reality in retail shops. it is mainly play major roles in the HCI/marketing and management which is a new initiative in augmented reality.

Saqib Saeed and Hina Gull et.al[20] explained the security enhancement in Saudi Arabia.They enhanced the security of online shopping based on three aspects: trust worthiness, Consumer rating and credit card security. It was introduced when the covid crisis starts and people gone for online shopping exponentially.

III. PROPOSED WORK

The Proposed System is to make the Web and mobile App for renting and buying the product.The App will be developed by Flutter Framework using Dart language integrated with Firebase Database for authentication and storing the data.Flutter is an open-source UI for developing of Application which can be accessed in all types of platform. Flutter is a cross platform

which has more package and function. Flutter is comparatively faster than other Application development language like C, java, etc.,

Firebase is a mobile and web application development platform that provides developers with a suite of tools and services to build and manage cloud-hosted applications. Firebase offers features such as real-time database, authentication, hosting, storage, and more.

Flutter and Firebase are often used together to build robust, scalable, and feature-rich mobile applications. With Flutter's widgets and Firebase's services, developers can quickly create and deploy mobile applications with minim.

The Proposed System is to make the Web and mobile App for renting and buying the product. The App will be developed by Flutter Framework using Dart language integrated with Firebase Database for authentication and storing the data. Flutter is the only place where Front end and back end can be easily integrated. Dart is the programming language used for building Flutter applications.

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Flutter and Firebase are often used together to build robust, scalable, and feature-rich mobile applications. With Flutter's widgets and Firebase's services, developers can quickly create and deploy mobile applications with minimal coding efforts.

Consist of chat box for customer and Seller to enhance security. By our project, The Proposed System will also contain Retail shops so that customer can able to identify the product they needed in their surroundings. The customer can able to get the product directly to the retail shops through the location of shops during tight spot. . Our motto is also to make the unused product bring to the useful action. So, the proposed will also consist of Rental system .The Product will be given to Rental based to customer by providing valid id number.

This system makes profit to both buyer and seller and also to the retail shops. So, this idea makes Retail shops to earn profit in digital system also .So, that Retail shoppers life will be enhanced which makes customer to know the original cost and quality of Product.

A. Architecture Diagram

Customer needs to sign up and login in the app. after that he can able to select whether he is came for buying, selling or renting the product. If Customer tries to buy or Getting product in rent, they can chat with seller directly for getting additional information of product. If seller tries to sell the product, seller should upload product details along with photo and when product is sold. He/she should update the product quantity as they stored in shop. If customer gets product, they will have an option of giving feedback to the product they bought.

Fig 3.1 Architecture Diagram

B. User

The user can be a Seller or Buyer .When the Buyer login the app, needs to give the Basic information and can view the products . Meanwhile ,the Seller needs to give his information to upload the products.

C. Information

For the Buyer the information details is simple ,just his name and stuff like that. But for the Seller the details are like GST number, his address , phone number and more and more specific details such as the product details.

D. Upload Products

After the Seller give his personnel details and the details of the product to be uploaded, the product is uploaded to the app and it can be viewed by the buyer. The upload section consists of two part Rent and Sale and the Seller has to select the particular section to upload his product

E. View Products

The buyer can view the products which he was searching for his need in the app. If the product satisfies his needs he can proceed for order. The Buyer can chat with the seller to know more about the product details. The Seller can send more details to the buyer by sending more images of the products ,etc. It makes the Buyer to feel trustworthy to buy the products. Send Product, After the order is confirmed by the Buyer , the seller sends the product order buy the Buyer. Receive Product, The product sent from the Seller is received by the Buyer. Product Update, After the product has been sent, the seller has to update the availability of the products. Feedback, After the product received by the Buyer, he has to give the feedback about the experience and the product usage.

IV. RECOMMENDED WORK

The result shows the Mobile app interface of the m-commerce app

A. Login Page

The login page of the app where the user login the app by giving his email address and its password.

Fig4.1 Login Page

Fig 4.1 Shows the login credential page of the application. If he do not have an account, sign up for new account by giving email address , name and password .

B. Home Page

An upload the products to the app by clicking the upload button. It redirect to the page of the product details where we have to give the details of the product.

Fig 4.2 Home Page

Figure 4.2 shows the Home page of the app where we can search for the require products to be ordered or search for availability of the product in shops.

C. Category

The buyer can view the products based on the category they need in this page. By clicking the category,.Electronics it redirects to the Electronics page where the buyer can able to view the products based on electronics.

Fig 4.3 Category

Figure 4.3 shows the product category page of the app where it shows the category of products available in the app.

D. Chat Box

Here the Buyer can send messages to Sender to know more details about the product.

Fig 4.4 Chat Box

Figure 4.4 shows the chat between the Seller and Buyer.

E. Rent Home Page

Rent Home Page where we can navigate to rent's favourite page, buying page and my products page.

Fig 4.5 Rent Home page

Figure 4.5 shows the Rent Home page between the Seller and Buyer. user may be get benefitted by direct interaction from the user.

F. My Cart

The Cart page of buying products page which will lead us to the buying page.

Fig 4.6 My Cart

Fig 4.6 shows the cart of the Application and user may add the product in the cart for latter performance.

G. Favorite Page

Favorite page of the buying products page which the favorite products are shown in this page.

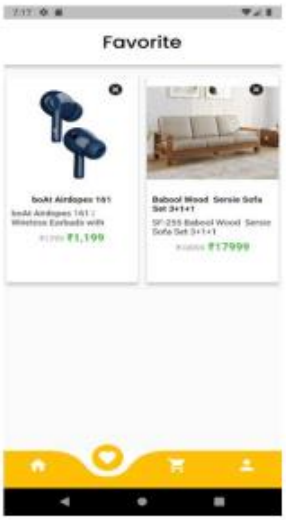

Fig. 4.7. Favorite Page

Figure 4.7 shows the favorite page of the user after the application may closed.

H. Product upload and page Rent Category Page

The Rent Category Page of the Rental products in the app, where certain category of products which are available are shown.

Fig 4.8 Product upload

shows the Product upload page for buying the products in the app, which need certain identification such as GST Number.

I. Rent Product Upload page

Rent Product Upload page for rental products in the app, which also need the same identification GST Number.