

# **Electronic Device Recommendation System**

*A*

*DBMS Project Report*

*Submitted in partial fulfilment of the  
Requirements for the award of the Degree of*

**BACHELOR OF ENGINEERING**

**IN**

**INFORMATION TECHNOLOGY**

**By**

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**Department of Information Technology**

**Vasavi College of Engineering(Autonomous)**

**ACCREDITED BY NAAC WITH 'A++' GRADE**

**(Affiliated to Osmania University and Approved by AICTE)**

**Ibrahimbagh, Hyderabad-31**

**2024**

**Vasavi College of Engineering (Autonomous)**

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**AICTE) Hyderabad-500031**

**Department of Information Technology**



**DECLARATION BY THE CANDIDATE**

We **Karthik, Chanakya** bearing hall ticket numbers **1602-22-737-317, 1602-22-737-137** hereby declare that the project report entitled “**Electronic Device Recommendation System**” is submitted in partial fulfillment of the requirement for the award of the degree of **Bachelor of Engineering in Information Technology**.

This is a record of bonafide work carried out by us and the results embodied in this project report have not been submitted to any other university or institute for the award of any other degree or diploma.

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(Head, Dept of IT)

## **ACKNOWLEDGMENT**

We extend our sincere thanks to Dr. S. V. Ramana, Principal, Vasavi College of Engineering for his encouragement.

We express our sincere gratitude to Dr. K. Ram Mohan Rao, Professor & Head, Department of Information Technology, Vasavi College of Engineering, for introducing the Mini-Project module in our curriculum, and also for his suggestions, motivation, and co-operation for the successful completion of our Mini Project.

We also want to thank and convey our gratitude towards our DBMS Faculty, SreeLakshmi for guiding us in understanding the process of project development & giving us timely suggestions at every phase.

## **ABSTRACT**

In today's fast-paced consumer electronics market, selecting the right device has become increasingly complex due to numerous options. Electronic device recommendation systems have emerged to help consumers make informed decisions by leveraging machine learning and data analytics. These systems utilize user preferences, product specifications, reviews, and expert opinions to generate personalized recommendations.

Key components of these systems include data collection, feature extraction, similarity computation, and recommendation generation.

These recommendation systems are widely used in e-commerce, online retail, and consumer electronics stores, enhancing user experience, increasing customer satisfaction, and driving sales. By offering tailored recommendations, they simplify the decision-making process, helping users find products that best match their preferences.

# Introduction:

In the rapidly evolving landscape of consumer electronics, selecting the most suitable device has become a daunting task for consumers, overwhelmed by the sheer variety and complexity of available options. The explosion of technological advancements and the burgeoning consumer electronics market have further compounded this challenge. To navigate this vast array of choices, electronic device recommendation systems have emerged as essential tools, leveraging sophisticated machine learning and data analytics techniques to aid consumers in making well-informed decisions.

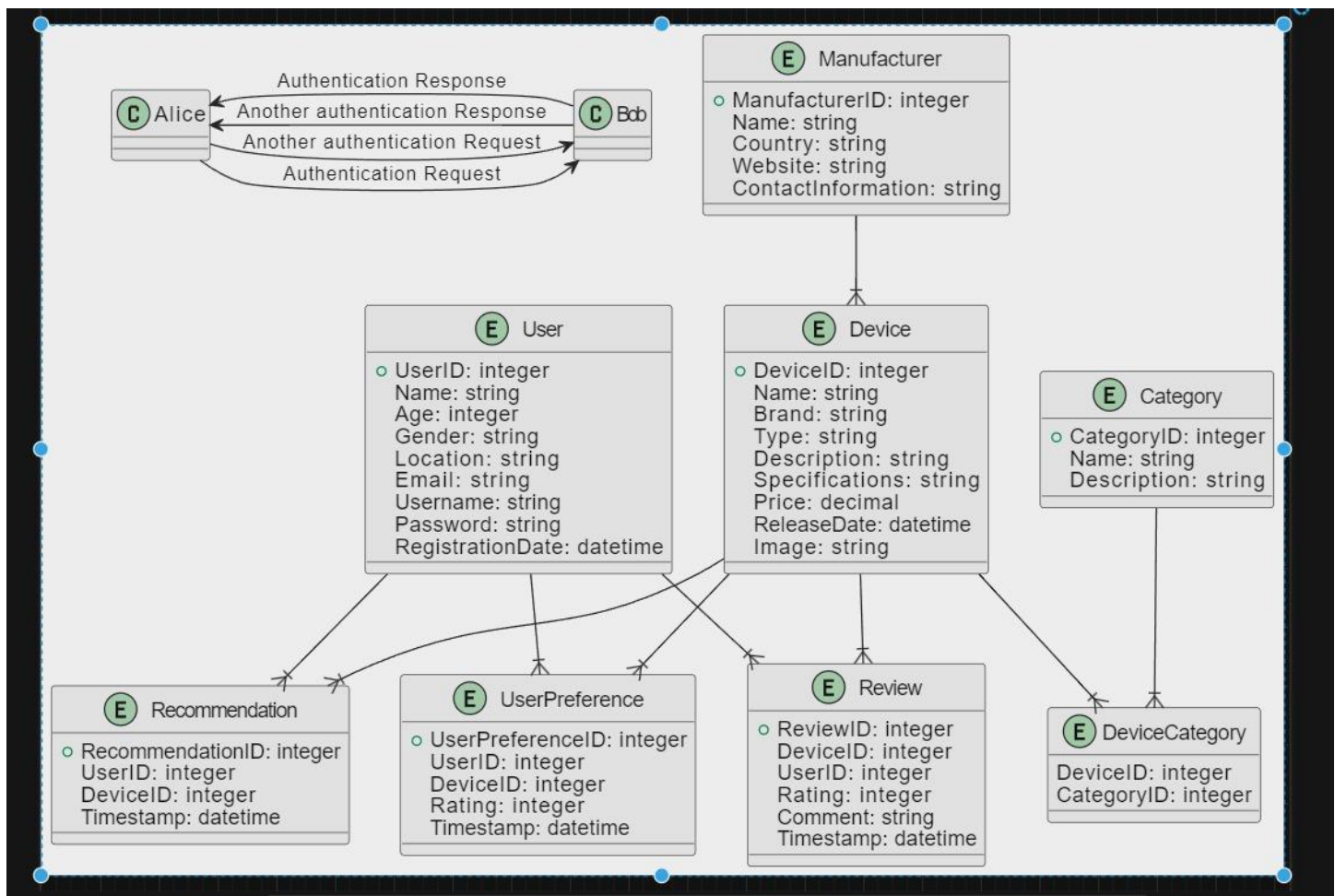
This project report delves into the significance, methodologies, and applications of electronic device recommendation systems. These systems harness diverse data sources, including user preferences, product specifications, reviews, and expert opinions, to generate personalized recommendations tailored to individual needs and preferences. By integrating advanced algorithms such as collaborative filtering, content-based filtering, and hybrid approaches, these systems analyze user data and accurately predict preferences. Additionally, the incorporation of natural language processing techniques allows for the extraction of valuable insights from textual reviews, further refining the quality of recommendations.

The report explores the key components of recommendation systems, including data collection, feature extraction, similarity computation, and recommendation generation. It also highlights how advancements in deep learning have enhanced the ability to discern intricate patterns in large-scale datasets, resulting in more precise and personalized recommendations.

Electronic device recommendation systems are not only pivotal in e-commerce and online retail but also in physical consumer electronics stores, significantly enhancing the shopping experience by providing users with recommendations that align with their specific preferences. Ultimately, these systems facilitate informed purchasing decisions, increase customer satisfaction, and drive sales.

This project report aims to provide a comprehensive overview of electronic device recommendation systems, emphasizing their role in simplifying the decision-making process for consumers inundated with choices in the electronics market. Through the integration of cutting-edge machine learning and data analytics techniques, these systems offer invaluable assistance in navigating the complex landscape of consumer electronics.

## ER Diagram :-



## Implementation:-

```
<!DOCTYPE html>
<html>

<head>
  <!-- Basic -->
  <meta charset="utf-8" />
  <meta http-equiv="X-UA-Compatible" content="IE=edge" />
  <!-- Mobile Metas -->
  <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
  <!-- Site Metas -->
  <meta name="keywords" content="" />
  <meta name="description" content="" />
  <meta name="author" content="" />

  <title>DBMS</title>

  <!-- bootstrap core css -->
  <link rel="stylesheet" type="text/css" href="css/bootstrap.css" />
```

```
<link href="https://fonts.googleapis.com/css?family=Poppins:400,700&display=swap" rel="stylesheet">
<!-- Custom styles for this template -->
<link href="css/style.css" rel="stylesheet" />
<!-- responsive style -->
<link href="css/responsive.css" rel="stylesheet" />
</head>
```

```
<body>
<div class="hero_area">
  <!-- header section strats -->
  <header class="header_section">
    <div class="container-fluid">
      <nav class="navbar navbar-expand-lg custom_nav-container">
        <a class="navbar-brand" href="index.html">
          
          <span>
            ElectroRec
          </span>
        </a>
        <button class="navbar-toggler" type="button" data-toggle="collapse" data-
target="#navbarSupportedContent" aria-controls="navbarSupportedContent" aria-expanded="false" aria-
label="Toggle navigation">
          <span class="navbar-toggler-icon"></span>
        </button>

        <div class="collapse navbar-collapse" id="navbarSupportedContent">
          <ul class="navbar-nav">
            <li class="nav-item active">
              <a class="nav-link" href="index.html">Home <span class="sr-only">(current)</span></a>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="index.html"> About</a>
            </li>

            <li class="nav-item">
              <a class="nav-link" href="index.html"> Category </a>
            </li>
          </ul>
          <div class="user_option">
            <a href="login.HTML">
              <span>
                Login
              </span>
            </a>
            <form class="form-inline my-2 my-lg-0 ml-0 ml-lg-4 mb-3 mb-lg-0">
              <button class="btn my-2 my-sm-0 nav_search-btn" type="submit"></button>
            </form>
          </div>
        </div>
```

```

</div>
<div>
  <div class="custom_menu-btn ">
    <button>
      <span class=" s-1">

      </span>
      <span class="s-2">

      </span>
      <span class="s-3">

      </span>
    </button>
  </div>
</div>

</nav>
</div>
</header>
<!-- end header section -->
<!-- slider section -->
<section class="slider_section ">
  <div class="carousel_btn-container">
    <a class="carousel-control-prev" href="#carouselExampleIndicators" role="button" data-slide="prev">
      <span class="sr-only">Previous</span>
    </a>
    <a class="carousel-control-next" href="#carouselExampleIndicators" role="button" data-slide="next">
      <span class="sr-only">Next</span>
    </a>
  </div>
  <div id="carouselExampleIndicators" class="carousel slide" data-ride="carousel">
    <ol class="carousel-indicators">
      <li data-target="#carouselExampleIndicators" data-slide-to="0" class="active">01</li>
      <li data-target="#carouselExampleIndicators" data-slide-to="1">02</li>
      <li data-target="#carouselExampleIndicators" data-slide-to="2">03</li>
    </ol>
    <div class="carousel-inner">
      <div class="carousel-item active">
        <div class="container-fluid">
          <div class="row">
            <div class="col-md-5 offset-md-1">
              <div class="detail-box">
                <h1>
                  Electronic<br>
                  Device <br>
                  Recommandation <br>
                  System
                </h1>

```



<p>  
"Empowering Choices: Our Electronic Device Recommendation System harnesses cutting-edge algorithms to provide personalized suggestions, enhancing your tech experience."  
</p>

</div>  
</div>  
<div class="offset-md-1 col-md-4 img-container">  
 <div class="img-box">  
   
 </div>  
</div>  
</div>  
</div>  
</div>  
</div>

<!-- about section -->

<section class="about\_section layout\_padding">  
 <div class="container">  
 <div class="row">  
 <div class="col-md-10 col-lg-9 mx-auto">  
 <div class="img-box">  
   
 </div>  
 </div>  
 </div>  
 <div class="detail-box">  
 <h2>  
 About ElectroRec  
 </h2>  
 <p>

Welcome to Electronic Device Recommendation System, where we simplify the world of technology. Our innovative recommendation system analyzes your preferences to suggest the perfect electronic devices for you, whether it's a smartphone, laptop, tablet, or smartwatch. With our user-friendly platform, we empower you to make informed decisions and enhance your tech experience. Join us as we revolutionize the way you discover and choose electronic devices.

</p>  
<a href="">  
 Read More  
</a>  
</div>  
</div>  
</section>

<!-- end about section -->

<!-- category section -->

```
<section class="category_section layout_padding">
  <div class="container">
    <div class="heading_container">
      <h2>
        Category
      </h2>
    </div>
    <div class="category_container">
      <div class="box">
        <div class="img-box">
          
        </div>
        <div class="detail-box">
          <h5>
            Mobile
          </h5>
        </div>
      </div>
      <div class="box">
        <div class="img-box">
          
        </div>
        <div class="detail-box">
          <h5>
            Head Phone
          </h5>
        </div>
      </div>
      <div class="box">
        <div class="img-box">
          
        </div>
        <div class="detail-box">
          <h5>
            Laptop
          </h5>
        </div>
      </div>
      <div class="box">
        <div class="img-box">
          
        </div>
        <div class="detail-box">
          <h5>
            TWS
          </h5>
        </div>
      </div>
    </div>
  </div>
</section>
```

```
<div class="box">
  <div class="img-box">
    
  </div>
  <div class="detail-box">
    <h5>
      Watch
    </h5>
  </div>
</div>
<div class="box">
  <div class="img-box">
    
  </div>
  <div class="detail-box">
    <h5>
      Tablet
    </h5>
  </div>
</div>
</div>
</div>
</section>
```

```
<!-- end category section -->
```

```
<!-- freelance section -->
```

```
<section class="freelance_section ">
  <div id="accordion">
    <div class="container-fluid">
      <div class="row">
        <div class="col-md-5 offset-md-1">
          <div class="detail-box">
            <div class="heading_container">
              <h2>
                choose Your product
              </h2>
            </div>
            <div class="tab_container">
              <div class="t-link-box" data-toggle="collapse" data-target="#collapseOne" aria-expanded="true" aria-
controls="collapseOne">
                <div class="img-box">
                  
                </div>
                <div class="detail-box">
                  <h5>
```

```
        </h5>
        <h3>
            Mobiles
        </h3>
    </div>
</div>
<div class="t-link-box collapsed" data-toggle="collapse" data-target="#collapseTwo" aria-
expanded="false" aria-controls="collapseTwo">
    <div class="img-box">
        
    </div>
    <div class="detail-box">
        <h5>

        </h5>
        <h3>
            Laptops
        </h3>
    </div>
</div>
<div class="t-link-box collapsed" data-toggle="collapse" data-target="#collapseThree" aria-
expanded="false" aria-controls="collapseThree">
    <div class="img-box">
        
    </div>
    <div class="detail-box">
        <h5>

        </h5>
        <h3>
            smartwatches
        </h3>
    </div>
</div>
<div class="t-link-box collapsed" data-toggle="collapse" data-target="#collapseFour" aria-
expanded="false" aria-controls="collapseFour">
    <div class="img-box">
        
    </div>
    <div class="detail-box">
        <h5>

        </h5>
        <h3>
            headphone
        </h3>
    </div>
</div>
```

```

        </div>
    </div>
</div>
<div class="col-md-6">
    <div class="collapse show" id="collapseOne" aria-labelledby="headingOne" data-parent="#accordion">
        <div class="img-box">
            <a href="file:///C:/Users/naama/OneDrive/Desktop/Final_DBMS/mobile-store/index.html#"
target="_blank">
                </a>
            </div>
        </div>
        <div class="collapse" id="collapseTwo" aria-labelledby="headingTwo" data-parent="#accordion">
            <div class="img-box">
                <a href="file:///C:/Users/naama/OneDrive/Desktop/Final_DBMS/Laptop-store/index.html#"
target="_blank">
                    </a>
                </div>
            </div>
            <div class="collapse" id="collapseThree" aria-labelledby="headingThree" data-parent="#accordion">
                <div class="img-box">
                    <a href="file:///C:/Users/naama/OneDrive/Desktop/Final_DBMS/Smartwatch-store/index.html#"
target="_blank">
                        </a>
                    </div>
                </div>
                <div class="collapse" id="collapseFour" aria-labelledby="headingfour" data-parent="#accordion">
                    <div class="img-box">
                        <a href="file:///C:/Users/naama/OneDrive/Desktop/Final_DBMS/Headphone-store/index.html#"
target="_blank">
                            </a>
                        </div>
                    </div>
                </div>
            </div>
        </div>
    </div>
</section>

```

<!-- end freelance section -->

<!-- client section -->

```

<section class="client_section layout_padding">
    <div class="container">
        <div class="row">
            <div class="col-lg-9 col-md-10 mx-auto">
                <div class="heading_container">
                    <h2>
                        Reviews
                    </h2>
                </div>
            </div>
        </div>
    </div>
</section>

```

```
</h2>
</div>
<div id="carouselExampleControls" class="carousel slide" data-ride="carousel">
  <div class="carousel-inner">
    <div class="carousel-item active">
      <div class="detail-box">
        <h4>
          user1
        </h4>
        <p>
          Rating: [5/5]</br>

```

Impressed by Laptop recommended by ElectroRec. Sleek design, powerful performance, and seamless user experience. Highly recommend it to all tech enthusiasts!

```
</p>
  
</div>
</div>
<div class="carousel-item">
  <div class="detail-box">
    <h4>
      user2
    </h4>
    <p>
      Rating: [4.7/5]</br>

```

Impressed by Laptop recommended by ElectroRec. Sleek design, powerful performance, and seamless user experience. Highly recommend it to all tech enthusiasts!

```
</p>
  
</div>
</div>
<div class="carousel-item">
  <div class="detail-box">
    <h4>
      user3
    </h4>
    <p>
      Rating: [4.5/5]</br>

```

Impressed by Laptop recommended by ElectroRec. Sleek design, powerful performance, and seamless user experience. Highly recommend it to all tech enthusiasts!

```
</p>
  
</div>
</div>
</div>
<a class="carousel-control-prev" href="#carouselExampleControls" role="button" data-slide="prev">
  <span class="sr-only">Previous</span>

```

```
    </a>
    <a class="carousel-control-next" href="#carouselExampleControls" role="button" data-slide="next">
      <span class="sr-only">Next</span>
    </a>
  </div>
</div>
</div>
</div>
</section>
```

```
<!-- end client section -->
```

```
<!-- info section -->
```

```
<section class="info_section ">
  <div class="info_container layout_padding-top">
    <div class="container">
      <div class="info_top">
        <div class="info_logo">
          
          <span>
            ElectroRec
          </span>
        </div>
        <div class="social_box">
          <a href="#">
            
          </a>
          <a href="#">
            
          </a>
          <a href="#">
            
          </a>
          <a href="#">
            
          </a>
          <a href="#">
            
          </a>
        </div>
      </div>
    </div>
  </div>
```

```
<!-- footer section -->
```

```
<footer class="container-fluid footer_section ">
  <div class="container">
    <p>
```

```
&copy; <span id="displayDate"></span> All Rights Reserved By  
<a href="https://html.design/">Karthik  
</a>  
  </p>  
</div>  
</footer>  
<!-- end footer section -->  
  
<script src="js/jquery-3.4.1.min.js"></script>  
<script src="js/bootstrap.js"></script>  
<script src="js/custom.js"></script>  
  
</body>  
</body>  
  
</html>
```

## Server.js

```
const express = require('express');  
const mongoose = require('mongoose');  
const cors = require('cors');  
  
const app = express();  
app.use(cors());  
  
mongoose.connect('mongodb://localhost:27017/smartwatch_store', {  
  useNewUrlParser: true,  
  useUnifiedTopology: true  
});  
  
const phoneSchema = new mongoose.Schema({  
  name: String,  
  price: Number,  
  category: String,  
  image: String,  
  specs: String  
});  
  
const Phone = mongoose.model('Phone', phoneSchema);  
  
app.get('/phones', async (req, res) => {  
  const phones = await Phone.find();  
  res.json(phones);  
});  
  
app.listen(5000, () => {  
  console.log('Server is running on port 5000');  
});
```



# Database

MongoDB Compass - localhost:27017/smartwatch\_store.phones

Connect Edit View Collection Help

localhost:27017

My Queries Performance Databases Search

admin config dbms\_project electronic\_store ems game\_store bill phones users headphone\_store laptop\_store local mobile\_store smartwatch\_store phones

localhost:27017 > smartwatch\_store > phones

Documents 7 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#)

EXPLAIN RESET FIND Options

ADD DATA EXPORT DATA UPDATE DELETE

1 - 7 of 7

	_id ObjectId	name String	price Int32	category String	image String	specs String
1	ObjectId('66503dd78f99e6b...')	"l,11"	500	"android"	"images/boat.jpg"	"https://amzn.i..."
2	ObjectId('66503dd78f99e6b...')	"Samsung"	999	"ios"	"images/samsung.jpg"	"https://amzn.i..."
3	ObjectId('66503dd78f99e6b...')	"Rolex"	888	"windows"	"images/rolex.jpg"	"https://amzn.i..."
4	ObjectId('66503dd78f99e6b...')	"Noise"	699	"android"	"images/noise.jpg"	"https://amzn.i..."
5	ObjectId('66503dd78f99e6b...')	"Apple watch ultra"	1099	"windows"	"images/Apple.jpg"	"https://amzn.i..."
6	ObjectId('66503dd78f99e6b...')	"Fire Bolt"	599	"ios"	"images/firebolt.jpg"	"https://amzn.i..."
7	ObjectId('66559c8a87c708c...')	"fastrack"	100	"android"	"https://m.media-amazon.c..."	"https://www.am..."

> MONGOOSH

28°C Partly cloudy

Search

ENG IN 20:49 09-06-2024

MongoDB Compass - localhost:27017/mobile\_store.laptops

Connect Edit View Collection Help

localhost:27017

My Queries Performance Databases Search

admin config dbms\_project electronic\_store ems game\_store bill phones users headphone\_store laptop\_store local mobile\_store laptops phones phones!

localhost:27017 > mobile\_store > laptops

Documents 4 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#)

EXPLAIN RESET FIND Options

ADD DATA EXPORT DATA UPDATE DELETE

1 - 4 of 4

```
{ "_id": ObjectId('664f90df20230eff9dcdcdf6'),  
  "name": "Asus vivobook 15 pro",  
  "price": 57000,  
  "category": "android",  
  "image": "images/vivobook.jpg",  
  "specs": Object,  
  "rating": Object  
}
```

```
{ "_id": ObjectId('664f90df20230eff9dcdcdf7'),  
  "name": "Hp vitus",  
  "price": 60000,  
  "category": "ios",  
  "image": "images/vitus.jpg",  
  "specs": Object,  
  "rating": Object  
}
```

```
{ "_id": ObjectId('664f90df20230eff9dcdcdf8'),  
  "name": "Mac",  
  "price": 80000,  
  "category": "windows",  
  "image": "images/mac.jpg",  
  "specs": Object,  
  "rating": Object  
}
```

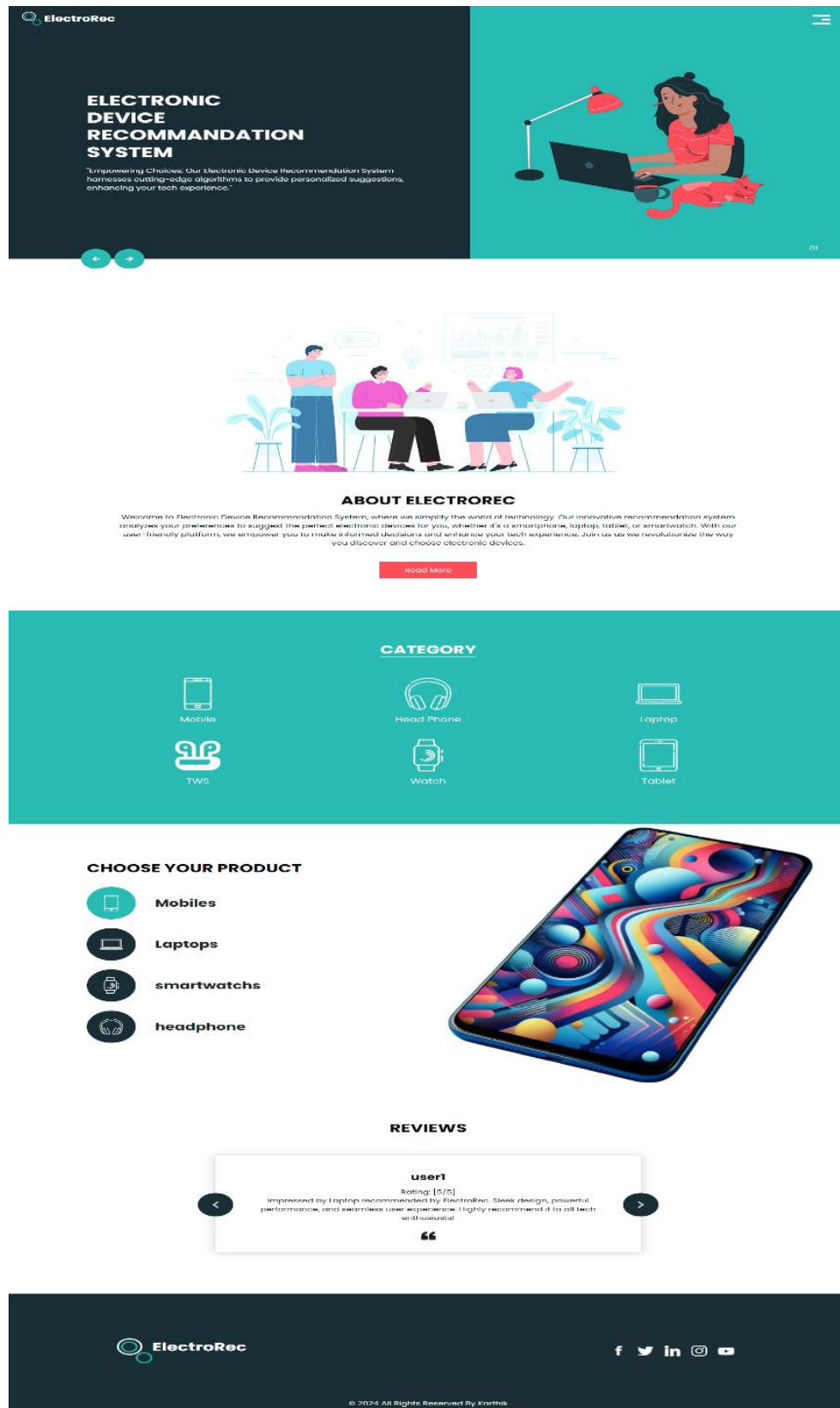
> MONGOOSH

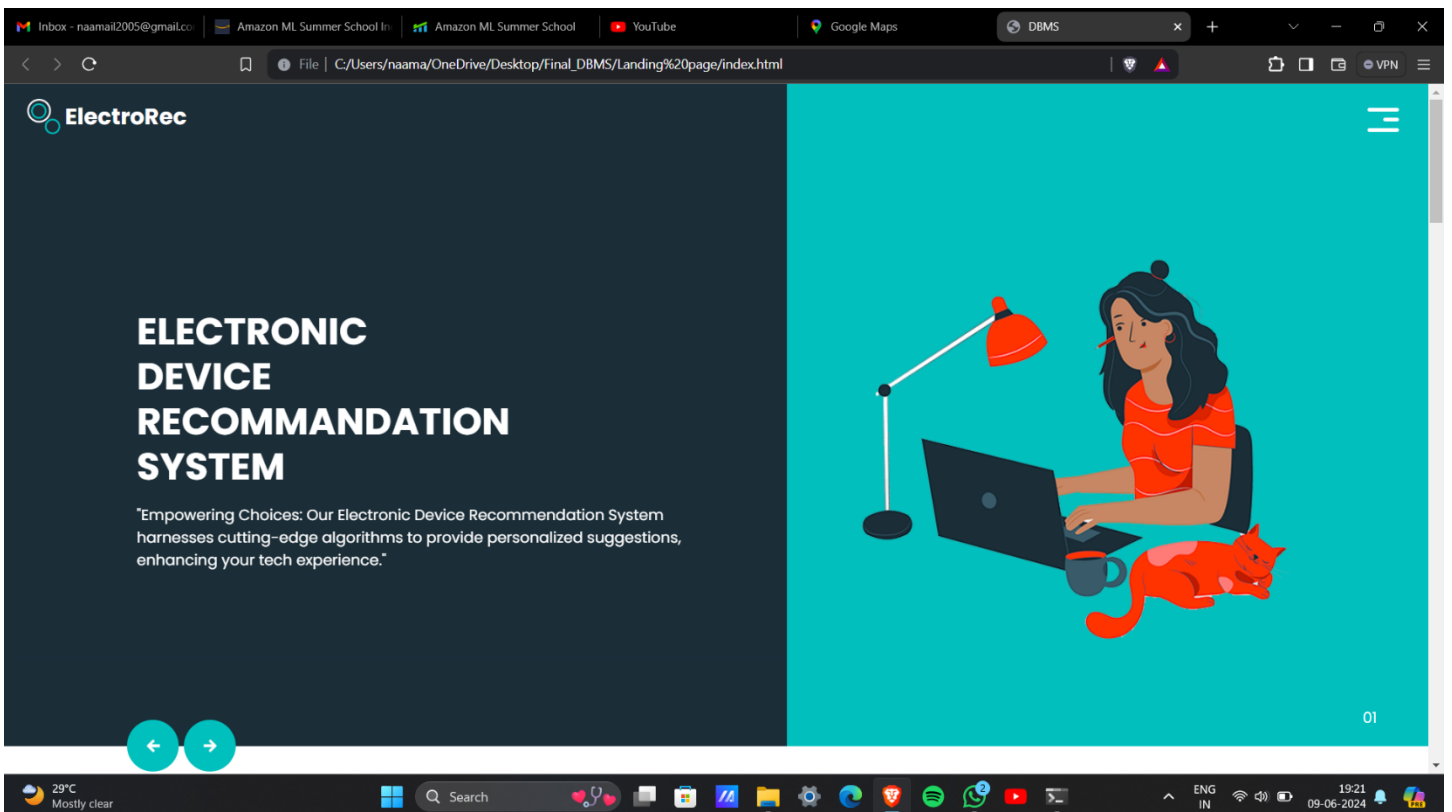
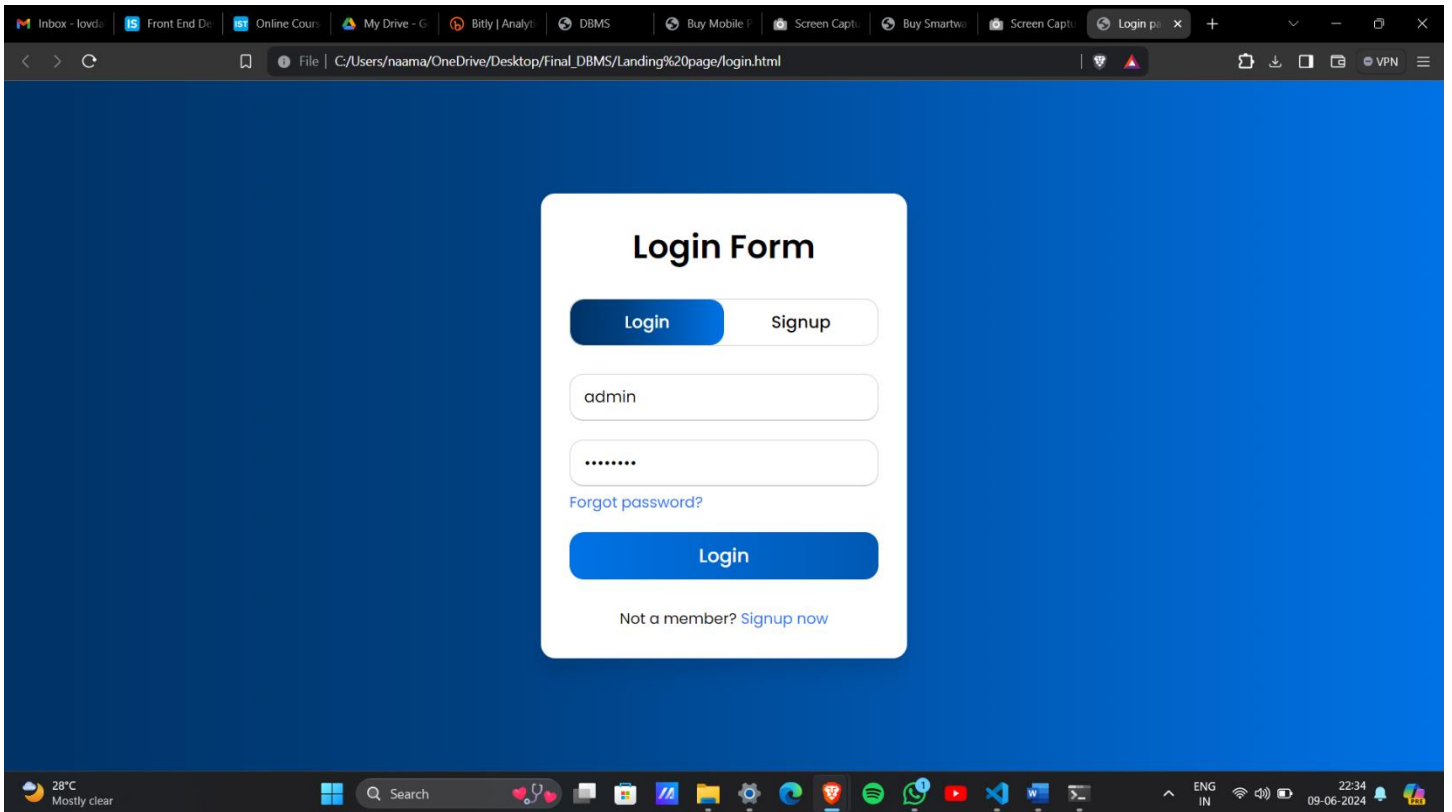
28°C Partly cloudy

Search

ENG IN 20:50 09-06-2024

# Output






Inbox - naAmazon MAmazon MYouTubeGoogle MaDBMSBuy LaBuy MobilScreen CapscreencaptExtensionsExtensions+


File | C:/Users/naama/OneDrive/Desktop/Final\_DBMS/Laptop-store/index.html#VPN

Laptop Store


AllStudentEditingGaming




**Asus vivobook 15 pro**  
Price: \$57000  
Specs:  
16 inch OLED,1080P, 70kmAh, 16GB/512GB, Ryzeen 5 5600H



**Hp vitus**  
Price: \$60000  
Specs:  
16 inch ipc,720P, 80kmAh, 16GB/512GB, Ryzeen 7 5800H



**Mac**  
Price: \$80000  
Specs:  
2k retina,1080P, 50000mAh, 8GB/256GB, M3



**Lenovo LOQ**  
Price: \$70000  
Specs:  
16 inches ips,480P, 4150 mAh, 32GB/1TB, Intel i9

29°C Mostly clear

Search


ENG IN19:25 09-06-2024

Inbox - rAmazonAmazonYouTubeGoogle MaDBMSBuy xBuy SmBuy LapBuy MolScreen CscreenExtensioExtensio+


File | C:/Users/naama/OneDrive/Desktop/Final\_DBMS/Headphone-store/index.html#VPN

Headphone Store


AllWiredTWSHeadPhones




**Nothing**  
Price: \$799




**Boat**  
Price: \$999




**Logitech**  
Price: \$499



**JBL**  
Price: \$699



**Air buds**  
Price: \$1099



**Zebronics**  
Price: \$599

29°C Mostly clear

Search


ENG IN19:26 09-06-2024

Inbox - naamAmazon MLAmazon MLYouTubeGoogle MapsDBMSBuy MoScreen CaptuscreecapturExtensionsExtensionsVPN

FileC:/Users/naama/OneDrive/Desktop/Final\_DBMS/mobile-store/index.html#


Mobile Phone Store

AllBest CameraBest GamingBest Display




**Samsung Galaxy S24 ultra**

Specs:  
6.2 inch AMOLED, 108 MP, 4000 mAh, 8GB RAM, Snapdragon 888




**iPhone 15 pro**

Specs:  
6.1 inch Super Retina XDR, 12 MP, 2815 mAh, 4GB RAM, A14 Bionic




**Google Pixel 8**

Specs:  
6.0 inch OLED, 16 MP, 4080 mAh, 8GB RAM, Snapdragon 765G




**iPhone 16**

Specs:  
6.1 inch Super Retina XDR, 12 MP Triple, 2815 mAh, 6GB RAM, A14 Bionic



**Asus ROG**

Specs:  
5.96 inch AMOLED, 16 MP, 4150 mAh, 4GB RAM, Snapdragon 820



**Nokia**

Specs:  
5.2 inch AMOLED, 20 MP, 3000 mAh, 3GB RAM, Snapdragon 808

29°C Mostly clear


Search

ENG IN

19:25 09-06-2024


Smartwatch Store

AllBest callingBest DisplayBest Design




**I, II**

Price: \$500




**Samsung**

Price: \$999




**Rolex**

Price: \$888




**Noise**

Price: \$699




**Apple watch ultra**

Price: \$1099



**Fire Bolt**

Price: \$599



**fastrack**

Price: \$100

THANK YOU