**SVKM's NMIMS**

**Mukesh Patel School of Technology Management & Engineering (Mumbai Campus)**

**Computer Engineering Department (BTI Sem VIII)**

**Database Management System**

**Project Report**

| | | |
|---|---|---|
| Program | BTI Computer Engineering | |
| Semester | VIII | |
| Name of the Project: | Online Sports Gear Store | |
| | | |
| Details of Project Members | | |
| Batch | Roll No. | Name |
| D2 | C182 | Jeeval Shah |
| D2 | C173 | Sachi Mane |
| D2 | C161 | Chahak Daga |
| Date of Submission: 06/04/25 | | |

**Contribution of each project Members:**

| Roll No. | Name | Contribution |
|---|---|---|
| C182 | Jeeval Shah | EER, Normalisation, Complex Queries, Backend |
| C173 | Sachi Mane | EER, Schema Reduction, Frontend |
| C161 | Chahak Daga | EER, Schema Reduction, Frontend |

**Rubrics for the Project evaluation:**

| | |
|---|---|
| First phase of evaluation:<br>Innovative Ideas (5 Marks)<br>Design and Partial implementation (5 Marks) | 7 marks (3M for EER, 4M for 15 tables, 10 rows in each , DDL command implemented, should include all constraints , all types of attributes, ISA and disjoint should be present) |
| Final phase of evaluation<br>(Implementation, presentation and viva, Self-Learning and Learning Beyond classroom) | 8 marks (Complex queries, nested queries, aggregate, implementation, normalised database) |

# Project Report

# Online Sports Gear Store

**by**

**Jeeval Shah, C182**

**Sachi Mane, C173**

**Chahak Daga, C161**

**Course: DBMS**

**AY: 2024-25**

**Table of Contents**

# I. Storyline

In today’s digitally connected world, the demand for niche e-commerce platforms is rising rapidly. This project envisions an Online Sports Gear Store that brings together buyers and sellers across India onto a unified digital platform.

The core idea is to provide customers with easy access to high-quality sports gear, ranging from winter trekking equipment to professional athletics gear & enabling small and large-scale sellers to reach a wider audience. The business model is marketplace-based, where multiple sellers manage their own storefronts under the umbrella of the main platform.

To efficiently run this online store, a robust and scalable relational database is essential. The system must capture and manage critical information across various components of the business including:

1) Users (Customers and Sellers): Their details and login credentials.
2) Sellers and their Stores: Each seller runs a store that operates in a specific city and state. Stores are uniquely identified and connected to the seller.
3) Products: Each store offers a variety of sports gear products. Products belong to different categories (like Winter Gear, Water Sports, Fitness Equipment, etc.) and come with details like price, description, and available quantity.
4) Orders and Payments: Customers can place orders which are linked to specific stores and products. Payment details including card information, expiry dates, and payment status must be securely managed.
5) Categories: Products are grouped under categories to enable efficient browsing and filtering.
6) Shopping Cart: Customers can add items to their cart before purchase.
7) Order Status: The system should track whether an order is placed, packed, shipped, or delivered.

This storyline forms the foundation of the database design. We aim is to mimic real-world complexities while ensuring normalized data storage, referential integrity, and easy retrieval of information through SQL queries.

Through this project, we not only simulate the backend of a real e-commerce business but also learn how structured data helps streamline operations, enhance user experience, and support decision-making.

# II. Components of Database Design

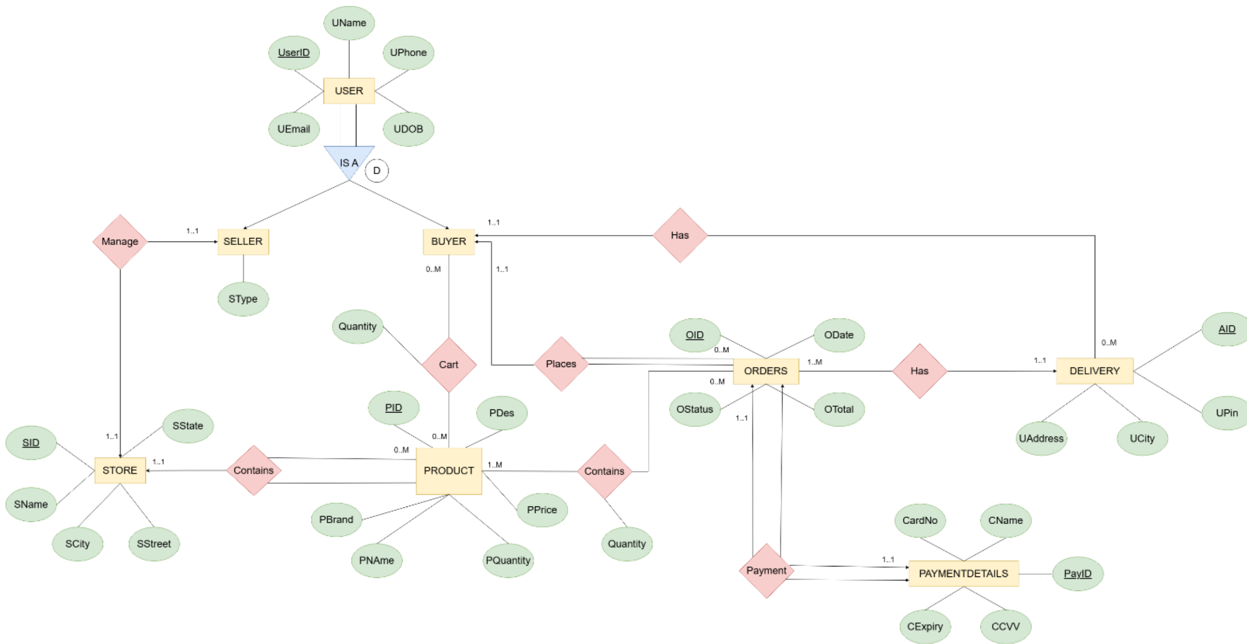
Entity Set With Attributes

| Name | Type | Primary Attributes | Non – Primary Attributes |
|---|---|---|---|
| USER | Strong | UserID | UName, UPhone, UDOB, UEmail |
| BUYER | Strong | UserID | UName, UPhone, UDOB, UEmail |
| SELLER | Strong | UserID | UName, UPhone, UDOB, UEmail, SType |
| STORE | Strong | SID | SName, SStreet, SCity, SState |
| PRODUCT | Strong | PID | PName, PBrand, PDes, PPrice, PQuantity |
| ORDERS | Strong | OID | ODate, OTotal, OStatus |
| DELIVERY | Strong | AID | UPin, UCity, UAddress |
| PAYMENTDETAILS | Strong | PayID | CardNo, CName, CCVV, CExpiry |

Relationship Set

| Relationship | Between | Cardinality | Participation |
|---|---|---|---|
| IS A | USER -> BUYER, SELLER | 1 to 1 | Disjoint Total Participation |
| Manage | SELLER - STORE | 1 to 1 | Partial Participation |
| Cart | BUYER - PRODUCT | M to M | Partial Participation |
| Contains | PRODUCT - STORE | M to 1 | Total Participation for Product |
| Places | BUYER – ORDER | 1 to M | Total Participation for ORDER |
| Has | BUYER – DELIVERY | 1 to M | Partial Participation |
| Has | ORDERS – DELIVERY | M to 1 | Partial Participation |
| Contains | PRODUCT - ORDER | M to M | Partial Participation |
| Payment | PAYMENTDETAILS – ORDER | 1 to 1 | Total Participation for both entities |

# III. Entity Relationship Diagram



# IV. Relational Model

Using the above relational & entity sets, we have 7 Strong Entities whose attributes will be as per the table.

To resolve the relations, one – by – one we: -

1. IS A – Since, it is a Disjoin Total Participation we only take its children (BUYER & SELLER) into account.

2. Manage – It is a 1 to 1 partial participation relationship between SELLER & STORE. Hence, they receive each other's primary key as foreign key.

3. Cart – A Many to Many Relationship between BUYER & PRODUCT. Hence, it has its own separate table with a composite primary key (PID, UserID) & attribute Quantity

4. Contains – It is a 1 to Many Relationship between STORE & PRODUCT with PRODUCT's Total participation. Hence, PRODUCT takes SID as foreign key.

5. Places - It is a 1 to Many relationship between BUYER & ORDER. Hence, ORDER takes UserID as foreign key.

6. Has – It is a 1 to Many Relationship between BUYER & DELIVERY. Hence, DELIVERY gets UserID from BUYER as foreign key.

7. Has – It is a Many to 1 relationship between ORDERS & DELIVERY. Hence, ORDERS receives AID as foreign key.

8. Contains – It is a Many to Many Relationship between ORDERS & PRODUCTS. Hence, we create a separate table & it also has Quantity

9. Payment – It is a Total participation 1 to 1 Relationship between ORDERS & PAYMENTDETAILS. Hence, we add the primary keys of each other as foreign keys.

After doing all this, we get:

BUYER(UserID, UName, UPhone, UEmail, UDOB)

SELLER(UserID, UName, UPhone, UEmail, UDOB, SType, SID)

STORE(SID, SState, SCity, SStreet, SName, UserID)

Cart(UserID, PID, Quantity)

PRODUCT(PID, PDes, PPrice, PName, PBrand, PQuantity, SID)

ORDERS(OID, ODate, OStatus, OTotal, AID, UserID, PayID)

Contains(PID, OID, Quantity)

PAYMETNDETAILS(PayID, CardNo, CName, CExpiry, CCVV, OID)

DELIVERY(AID, UPin, Ucity, UAddress, UserID)

# V. Normalization

**First Normal Form (1NF)** - Elimination of Multi – Valued Attributes:

There are no multi-valued attributes in any of the given tables. Hence, they meet 1NF requirements

BUYER(UserID, UName, UPhone, UEmail, UDOB)

SELLER(UserID, UName, UPhone, UEmail, UDOB, SType, SID)

STORE(SID, SState, SCity, SStreet, SName, UserID)

Cart(UserID, PID, Quantity)

PRODUCT(PID, PDes, PPrice, PName, PBrand, PQuantity, SID)

ORDERS(OID, ODate, OStatus, OTotal, AID, UserID, PayID)

Contains(PID, OID, Quantity)

PAYMETNDETAILS(PayID, CardNo, CName, CExpiry, CCVV, OID)

DELIVERY(AID, UPin, Ucity, UAddress, UserID)

**Second Normal Form (2NF)** – Elimination of partial dependencies

BUYER(UserID, UName, UPhone, UEmail, UDOB) – It is already in 2NF since there is a single priamry key (UserID)

SELLER(UserID, UName, UPhone, UEmail, UDOB, SType, SID) – It is already in 2NF since there is a single primary key (UserID)

STORE(SID, SState, SCity, SStreet, SName, UserID) - It is already in 2NF since there is a single primary key (SID)

Cart(UserID, PID, Quantity) – It is in 2NF with a composite primary key (SID, UserID)

PRODUCT(PID, PDes, PPrice, PName, PBrand, PQuantity, SID) - The primary key is PID, and all other attributes are fully functionally dependent on it.

ORDERS(OID, ODate, OStatus, OTotal, AID, UserID, PayID) – The primary key is OID, and all other attributes are fully functionally dependent on it.
Contains(PID, OID, Quantity) – It is in 2NF with a composite primary key (PID, OID)

PAYMETNDETAILS(PayID, CardNo, CName, CExpiry, CCVV, OID) – The primary key is PayID, and all other attributes are fully functionally dependent on it.

DELIVERY(AID, UPin, Ucity, UAddress, UserID) – The primary key is AID, and all other attributes are fully functionally dependent on it.

Hence, the above tables are in 2NF

**Third Normal Form (3NF) –** Eliminating Transitive Dependencies

BUYER(UserID, UName, UPhone, UEmail, UDOB) – No non-prime attribute depends on another non-prime attribute — 3NF is satisfied.

SELLER(UserID, UName, UPhone, UEmail, UDOB, SType, SID) – No non-prime attribute depends on another non-prime attribute — 3NF is satisfied.

STORE(SID, SState, SCity, SStreet, SName, UserID) - No non-prime attribute depends on another non-prime attribute — 3NF is satisfied.

Cart(UserID, PID, Quantity) – No transitive dependencies — 3NF is satisfied

PRODUCT(PID, PDes, PPrice, PName, PBrand, PQuantity, SID) - No transitive dependencies — 3NF is satisfied

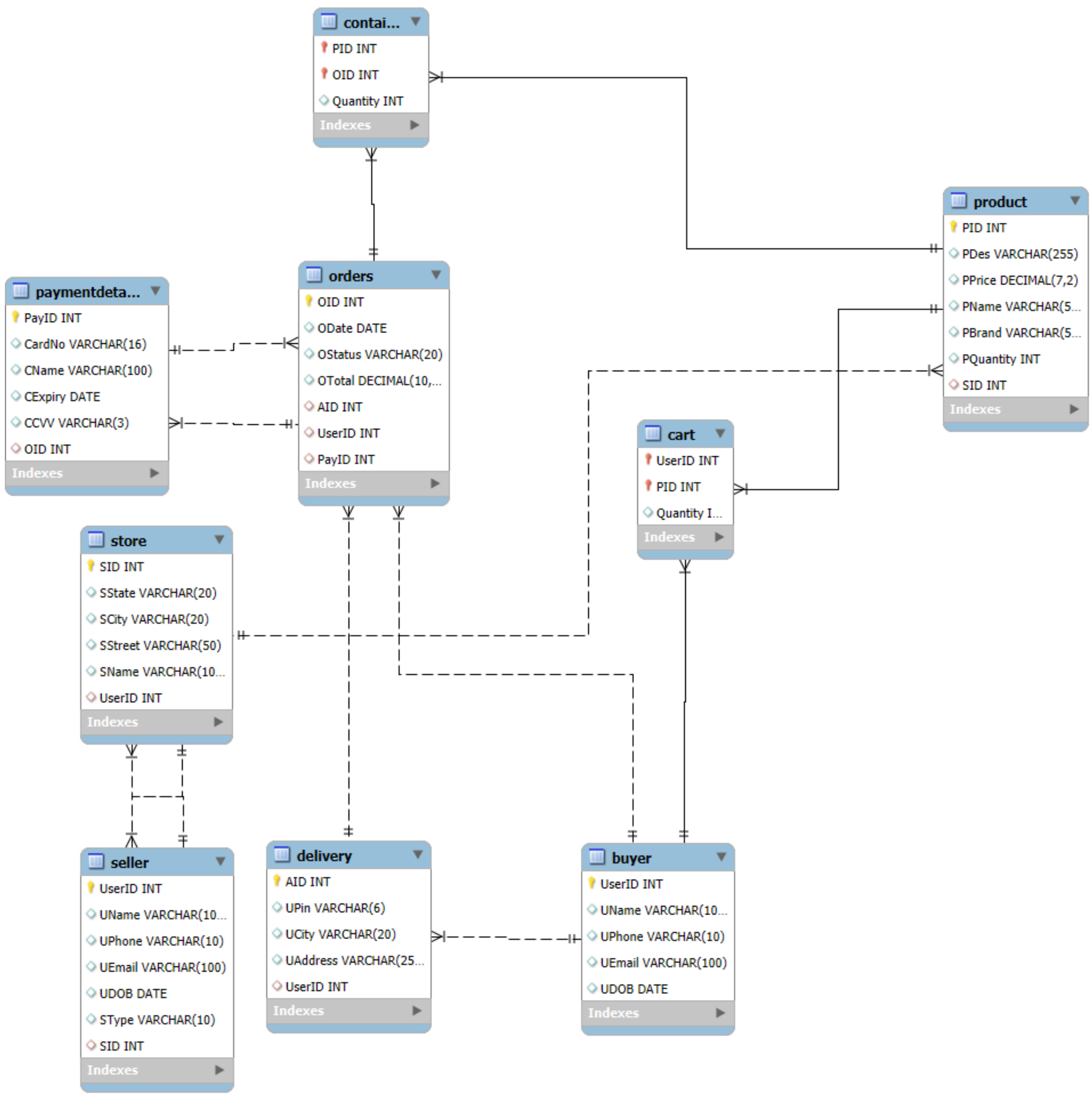
ORDERS(OID, ODate, OStatus, OTotal, AID, UserID, PayID) – No transitive dependencies — 3NF is satisfied.

Contains(PID, OID, Quantity) – No transitive dependencies — 3NF is satisfied

PAYMETNDETAILS(PayID, CardNo, CName, CExpiry, CCVV, OID) – No transitive dependencies — 3NF is satisfied

DELIVERY(AID, UPin, Ucity, UAddress, UserID) – No transitive dependencies — 3NF is satisfied

Hence, the above tables have been normalized till 3NF




Schema Representation of the database

# VI. SQL Queries

Creation of the tables – https://github.com/JeevalShah/Online-Sports-Gear-Store

Insertion of Tuples – https://github.com/JeevalShah/Online-Sports-Gear-Store

```
USE DBMS;

-- 1. Total number of orders per buyer
SELECT b.UserID, b.UName, COUNT(o.OID) AS TotalOrders
FROM BUYER b
LEFT OUTER JOIN ORDERS o ON b.UserID = o.UserID
GROUP BY b.UserID, b.UName;
```

| UserID | UName | TotalOrders |
|---|---|---|
| 1 | Jeeval Shah | 2 |
| 2 | Aarav Sharma | 2 |
| 3 | Priya Patel | 2 |
| 4 | Ravi Desai | 2 |
| 5 | Ananya Reddy | 2 |
| 6 | Arjun Kumar | 1 |
| 7 | Aisha Khan | 1 |
| 8 | Vikram Singh | 1 |
| 9 | Neha Mehta | 1 |
| 10 | Dev Joshi | 1 |
| 11 | Radhika Iyer | 0 |

```
-- 2. Total amount spent by each buyer
SELECT b.UserID, b.UName, SUM(o.OTotal) AS TotalSpent
FROM BUYER b
NATURAL JOIN ORDERS o
GROUP BY b.UserID, b.UName;
```

| UserID | UName | TotalSpent |
|---|---|---|
| 1 | Jeeval Shah | 321.73 |
| 2 | Aarav Sharma | 184.49 |
| 3 | Priya Patel | 184.98 |
| 4 | Ravi Desai | 269.98 |
| 5 | Ananya Reddy | 349.98 |
| 6 | Arjun Kumar | 199.99 |
| 7 | Aisha Khan | 79.49 |
| 8 | Vikram Singh | 129.99 |
| 9 | Neha Mehta | 219.49 |
| 10 | Dev Joshi | 59.99 |

```sql
-- 3. Most expensive product per brand
SELECT PBrand, MAX(PPrice) AS MaxPrice
FROM PRODUCT
GROUP BY PBrand;
```

Result Grid | Filter Rows:

| PBrand | MaxPrice |
|---|---|
| NorthFace | 120.99 |
| Columbia | 89.50 |
| The Heat Co. | 25.75 |
| Oakley | 49.99 |
| Burton | 299.99 |
| Patagonia | 18.49 |
| Smartwool | 12.99 |
| Arc'teryx | 99.99 |
| HotHands | 15.99 |
| Osprey | 149.99 |
| Smith | 134.95 |
| Leki | 45.99 |
| Under Armour | 35.99 |
| MSR | 199.99 |
| Black Diamond | 79.99 |

```sql
-- 4. Products sold more than 2 times
SELECT p.PID, p.PName, SUM(c.Quantity) AS TotalSold
FROM PRODUCT p
JOIN CONTAINS c ON p.PID = c.PID
GROUP BY p.PID, p.PName
HAVING SUM(c.Quantity) > 2;
```

Result Grid | Filter Rows:

| PID | PName | TotalSold |
|---|---|---|
| 300 | Ski Jacket | 5 |
| 302 | Winter Gloves | 4 |
| 311 | Ski Poles | 3 |
| 314 | Gore-Tex Gloves | 3 |

```sql
-- 5. Sellers and their product counts
SELECT s.UserID, s.UName, COUNT(p.PID) AS ProductCount
FROM (SELLER s
JOIN STORE st ON s.UserID = st.UserID)
JOIN PRODUCT p ON st.SID = p.SID
GROUP BY s.UserID, s.UName;
```

Result Grid | Filter Rows:

| UserID | UName | ProductCount |
|---|---|---|
| 100 | Ishaan Gupta | 3 |
| 101 | Sneha Verma | 2 |
| 102 | Karan Rao | 2 |
| 103 | Pooja Joshi | 2 |
| 104 | Rajesh Nair | 1 |
| 105 | Amit Trivedi | 2 |
| 106 | Meera Sharma | 1 |
| 107 | Rohan Mehta | 1 |
| 108 | Divya Kapoor | 1 |

```
-- 6. Top 5 most purchased products
SELECT p.PID, p.PName, SUM(c.Quantity) AS PurchasedQty
FROM PRODUCT p
JOIN CONTAINS c ON p.PID = c.PID
GROUP BY p.PID, p.PName
ORDER BY PurchasedQty DESC
LIMIT 5;
```

Result Grid | Filter Rows:

| PID | PName | PurchasedQty |
|---|---|---|
| 300 | Ski Jacket | 5 |
| 302 | Winter Gloves | 4 |
| 311 | Ski Poles | 3 |
| 314 | Gore-Tex Gloves | 3 |
| 301 | Snow Boots | 2 |

```
-- 7. Out of stock products
SELECT PID, PName
FROM PRODUCT
WHERE PQuantity = 0;
```

Result Grid

| PID | PName |
|---|---|
| NULL | NULL |

```
-- 8. Revenue per product
SELECT p.PID, p.PName, SUM(c.Quantity * p.PPrice) AS Revenue
FROM PRODUCT p
JOIN CONTAINS c ON p.PID = c.PID
GROUP BY p.PID, p.PName;
```

Result Grid Filter Rows:

| PID | PName | Revenue |
|---|---|---|
| 300 | Ski Jacket | 604.95 |
| 301 | Snow Boots | 179.00 |
| 302 | Winter Gloves | 103.00 |
| 303 | Ski Goggles | 49.99 |
| 306 | Thermal Socks | 25.98 |
| 307 | Ski Pants | 199.98 |
| 309 | Ski Backpack | 149.99 |
| 310 | Helmet | 134.95 |
| 311 | Ski Poles | 137.97 |
| 312 | Thermal Shirt | 35.99 |
| 313 | Snowshoes | 199.99 |
| 314 | Gore-Tex Glo... | 239.97 |

```
-- 9. Average order value per buyer
SELECT b.UserID, b.UName, AVG(o.OTotal) AS AvgOrderValue
FROM BUYER b
JOIN ORDERS o ON b.UserID = o.UserID
GROUP BY b.UserID, b.UName;
```

Result Grid Filter Rows:

| UserID | UName | AvgOrderValue |
|---|---|---|
| 1 | Jeeval Shah | 160.865000 |
| 2 | Aarav Sharma | 92.245000 |
| 3 | Priya Patel | 92.490000 |
| 4 | Ravi Desai | 134.990000 |
| 5 | Ananya Reddy | 174.990000 |
| 6 | Arjun Kumar | 199.990000 |
| 7 | Aisha Khan | 79.490000 |
| 8 | Vikram Singh | 129.990000 |
| 9 | Neha Mehta | 219.490000 |
| 10 | Dev Joshi | 59.990000 |

```
-- 10. Products in more than 3 orders
SELECT c.PID, p.PName, COUNT(DISTINCT c.OID) AS OrderCount
FROM CONTAINS c
JOIN PRODUCT p ON c.PID = p.PID
GROUP BY c.PID, p.PName
HAVING COUNT(DISTINCT c.OID) > 3;
```

Result Grid Filter Rows:

| PID | PName | OrderCount |
|---|---|---|
| 300 | Ski Jacket | 4 |

```sql
-- 11. Orders with buyer and address
SELECT o.OID, b.UName, d.UAddress, o.OTotal
FROM ORDERS o
JOIN BUYER b ON o.UserID = b.UserID
JOIN DELIVERY d ON o.AID = d.AID;
```

Result Grid | Filter Rows: | Export:

| OID | UName | UAddress | OTotal |
|---|---|---|---|
| 500 | Jeeval Shah | 101 Marine Drive | 146.74 |
| 501 | Aarav Sharma | 55 Connaught Place | 89.50 |
| 502 | Priya Patel | 77 MG Road | 49.99 |
| 503 | Ravi Desai | 22 Park Street | 99.99 |
| 504 | Ananya Reddy | 15 Anna Salai | 149.99 |
| 505 | Arjun Kumar | 9 Banjara Hills | 199.99 |
| 506 | Aisha Khan | 48 CG Road | 79.49 |
| 507 | Vikram Singh | 88 FC Road | 129.99 |
| 508 | Neha Mehta | 12 Marine Drive | 219.49 |
| 509 | Dev Joshi | 6 MG Road | 59.99 |
| 510 | Jeeval Shah | 101 Marine Drive | 174.99 |
| 511 | Aarav Sharma | 55 Connaught Place | 94.99 |
| 512 | Priya Patel | 10 Cyber Hub Road | 134.99 |
| 513 | Ravi Desai | 22 Park Street | 169.99 |
| 514 | Ananya Reddy | 88 Model Town | 199.99 |

```sql
-- 12. Sellers without products
SELECT s.UserID, s.UName
FROM SELLER s
LEFT JOIN STORE st ON s.UserID = st.UserID
LEFT JOIN PRODUCT p ON st.SID = p.SID
WHERE p.PID IS NULL;
```

Result Grid | Filter Rows:

| UserID | UName |
|---|---|
| 109 | Suresh Yadav |

```sql
-- 13. Recent Orders and Buyers
SELECT o.OID, o.ODate, b.UName
FROM ORDERS o
JOIN BUYER b ON o.UserID = b.UserID
ORDER BY o.ODate DESC;
```

Result Grid | Filter Rows:

| OID | ODate | UName |
|---|---|---|
| 509 | 2025-04-30 | Dev Joshi |
| 508 | 2025-04-27 | Neha Mehta |
| 507 | 2025-04-25 | Vikram Singh |
| 505 | 2025-04-20 | Arjun Kumar |
| 506 | 2025-03-22 | Aisha Khan |
| 504 | 2025-03-19 | Ananya Reddy |
| 503 | 2025-03-17 | Ravi Desai |
| 502 | 2025-03-15 | Priya Patel |
| 501 | 2025-03-12 | Aarav Sharma |
| 514 | 2025-03-12 | Ananya Reddy |
| 500 | 2025-03-10 | Jeeval Shah |
| 513 | 2025-03-10 | Ravi Desai |
| 512 | 2025-03-07 | Priya Patel |
| 511 | 2025-03-05 | Aarav Sharma |
| 510 | 2025-03-02 | Jeeval Shah |

-- 14. Orders placed each month
SELECT DATE_FORMAT(ODate, '%Y-%m') AS Month, COUNT(OID) AS OrderCount
FROM ORDERS
GROUP BY DATE_FORMAT(ODate, '%Y-%m');

Result Grid | Filter Rows:

| Month | OrderCount |
|---|---|
| 2025-03 | 11 |
| 2025-04 | 4 |

-- 15. Revenue by Each Store
SELECT s.SID, s.SName, SUM(p.PPrice * c.Quantity) AS Revenue
FROM STORE s
JOIN PRODUCT p ON s.SID = p.SID
JOIN CONTAINS c ON p.PID = c.PID
GROUP BY s.SID, s.SName;

Result Grid | Filter Rows:

| SID | SName | Revenue |
|---|---|---|
| 200 | European Winter Gear | 886.95 |
| 201 | Nordic Sports Store | 49.99 |
| 202 | Alpine Traders | 25.98 |
| 203 | Everest Outfitters | 199.98 |
| 204 | Polar Gear | 149.99 |
| 205 | Ice Peak Gear | 272.92 |
| 206 | Glacier Sports | 35.99 |
| 207 | North Pole Traders | 199.99 |
| 208 | Frozen Expedition | 239.97 |

-- 16. Products above average price
SELECT PID, PName, PPrice
FROM PRODUCT
WHERE PPrice > (SELECT AVG(PPrice) FROM PRODUCT);

Result Grid | Filter Rows:

| PID | PName | PPrice |
|---|---|---|
| 300 | Ski Jacket | 120.99 |
| 304 | All-Mountain Snowboard | 299.99 |
| 307 | Ski Pants | 99.99 |
| 309 | Ski Backpack | 149.99 |
| 310 | Helmet | 134.95 |
| 313 | Snowshoes | 199.99 |
| NULL | NULL | NULL |

```
-- 17. Payment methods used and count
SELECT CardNo, COUNT(*) AS TimesUsed
FROM PAYMENTDETAILS
GROUP BY CardNo;
```

Result Grid | Filter Rows:

| CardNo | TimesUsed |
|---|---|
| 1234567812345678 | 1 |
| 2345678923456789 | 1 |
| 3456789034567890 | 1 |
| 4567890145678901 | 1 |
| 5678901256789012 | 1 |
| 6789012367890123 | 1 |
| 7890123478901234 | 1 |
| 8901234589012345 | 1 |
| 9012345690123456 | 1 |
| 1234901234901234 | 1 |
| 2345012345012345 | 1 |
| 3456123456123456 | 1 |
| 4567234567234567 | 1 |
| 5678345678345678 | 1 |
| 6789456789456789 | 1 |

```
-- 18. Count of Deliveries to Cities
SELECT UCity, COUNT(*) AS DeliveryCount
FROM DELIVERY
GROUP BY UCity
ORDER BY DeliveryCount DESC;
```

Result Grid | Filter Rows:

| UCity | DeliveryCount |
|---|---|
| Chennai | 2 |
| Hyderabad | 2 |
| Mumbai | 1 |
| New Delhi | 1 |
| Bangalore | 1 |
| Kolkata | 1 |
| Ahmedabad | 1 |
| Pune | 1 |
| Kochi | 1 |
| Thiruvananthapuram | 1 |
| Gurgaon | 1 |
| Jalandhar | 1 |
| Jaipur | 1 |
| Bhubaneswar | 1 |
| Jammu | 1 |

```
-- 19. Quantity of items per order
SELECT OID, SUM(Quantity) AS TotalItems
FROM CONTAINS
GROUP BY OID
ORDER BY TotalItems DESC;
```

Result Grid | Filter Rows:

| OID | TotalItems |
|---|---|
| 506 | 3 |
| 507 | 3 |
| 513 | 3 |
| 500 | 2 |
| 505 | 2 |
| 508 | 2 |
| 509 | 2 |
| 514 | 2 |
| 501 | 1 |
| 502 | 1 |
| 503 | 1 |
| 504 | 1 |
| 510 | 1 |
| 511 | 1 |
| 512 | 1 |

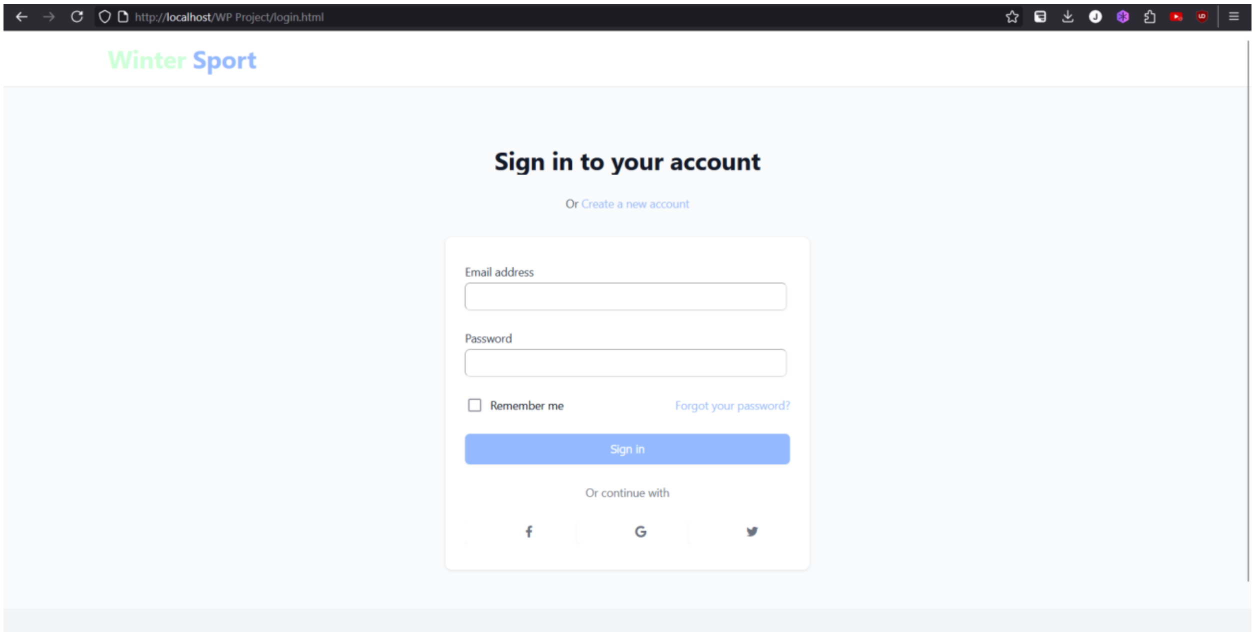
```
-- 20. Value of Items in Buyer's Cart
SELECT b.UserID, b.UName, SUM(p.PPrice * c.Quantity) AS CartValue
FROM BUYER b
JOIN CART c ON b.UserID = c.UserID
JOIN PRODUCT p ON c.PID = p.PID
GROUP BY b.UserID, b.UName;
```

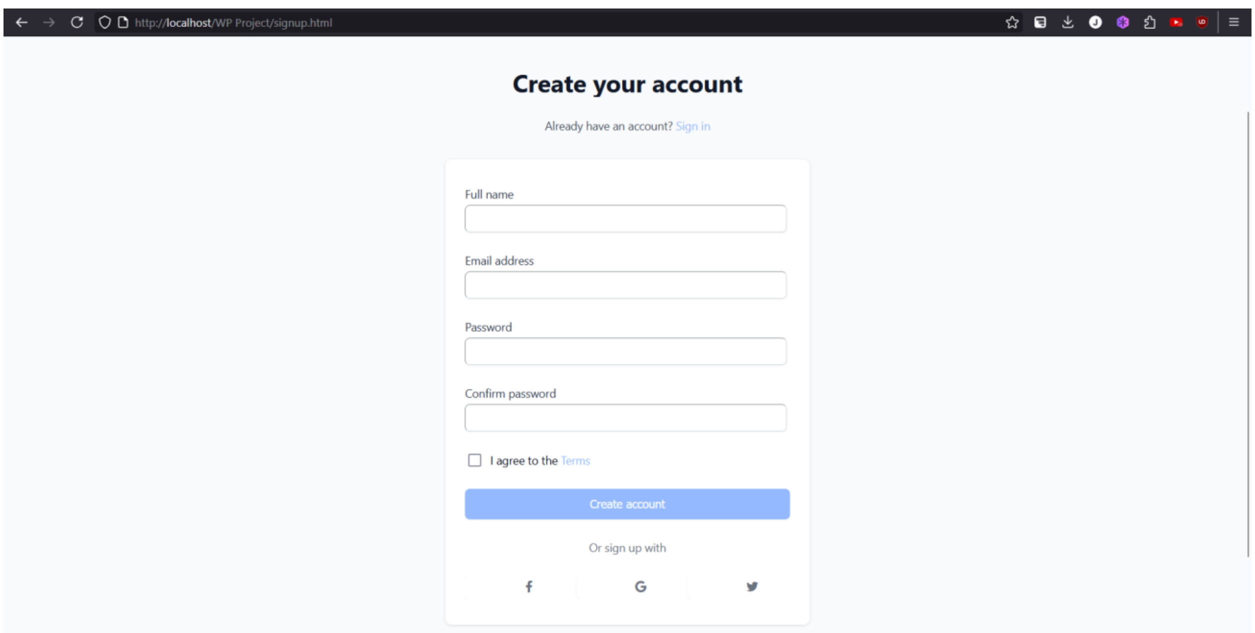
Result Grid | Filter Rows:

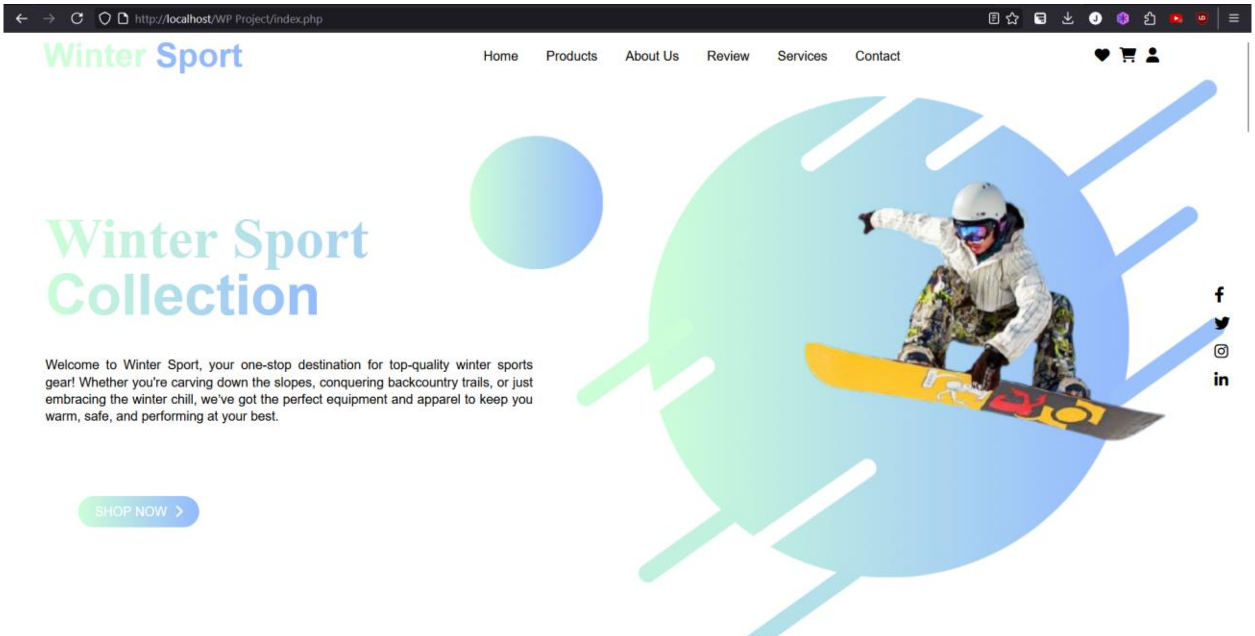
| UserID | UName | CartValue |
|---|---|---|
| 1 | Jeeval Shah | 196.73 |
| 2 | Aarav Sharma | 689.48 |
| 3 | Priya Patel | 36.98 |
| 4 | Ravi Desai | 265.95 |
| 5 | Ananya Reddy | 488.94 |
| 6 | Arjun Kumar | 15.99 |
| 7 | Aisha Khan | 449.97 |
| 8 | Vikram Singh | 269.90 |

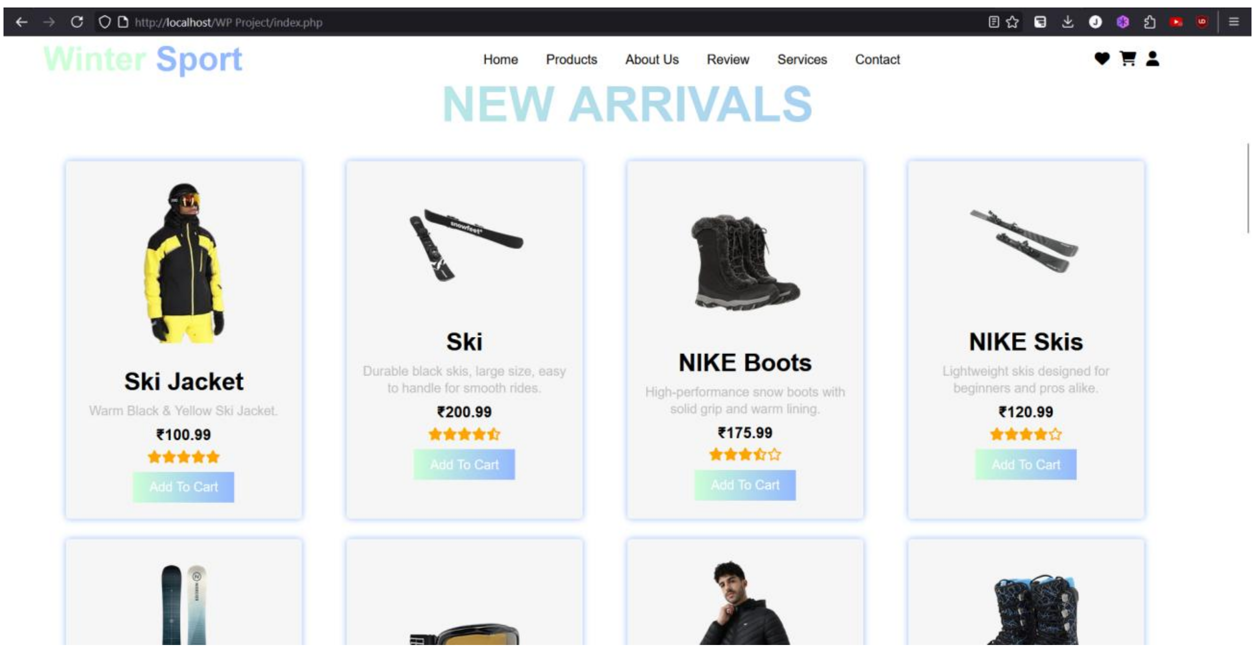
# VI. Project demonstration

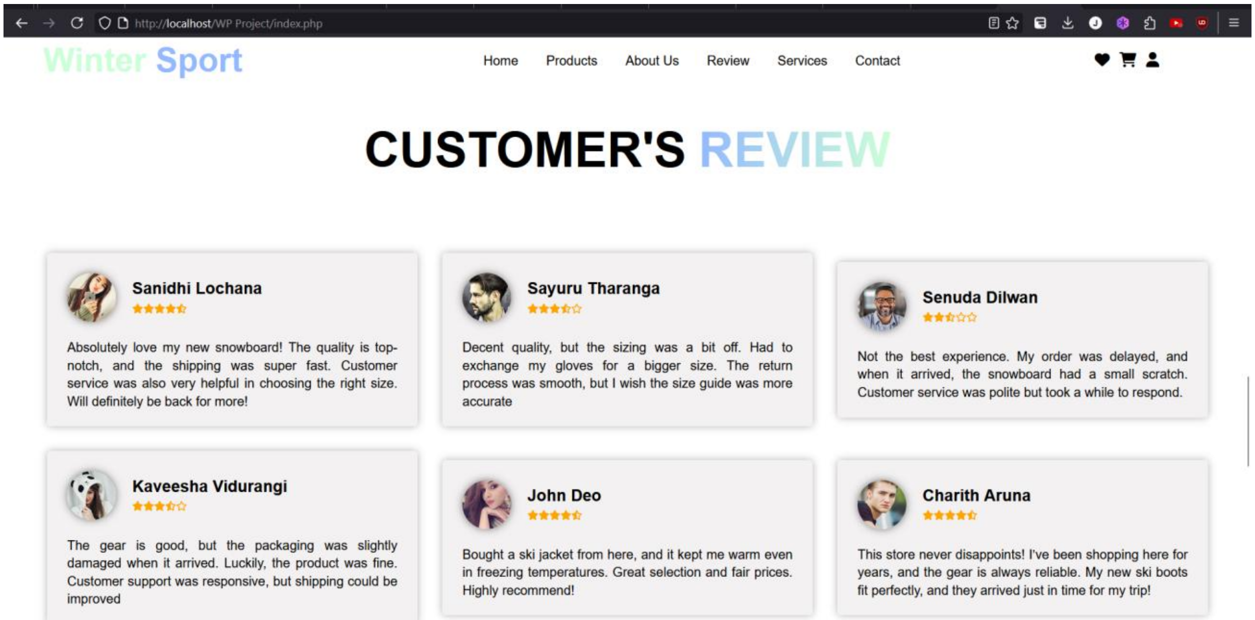
Project Demonstration: GitHub Link: https://github.com/JeevalShah/WP-Project

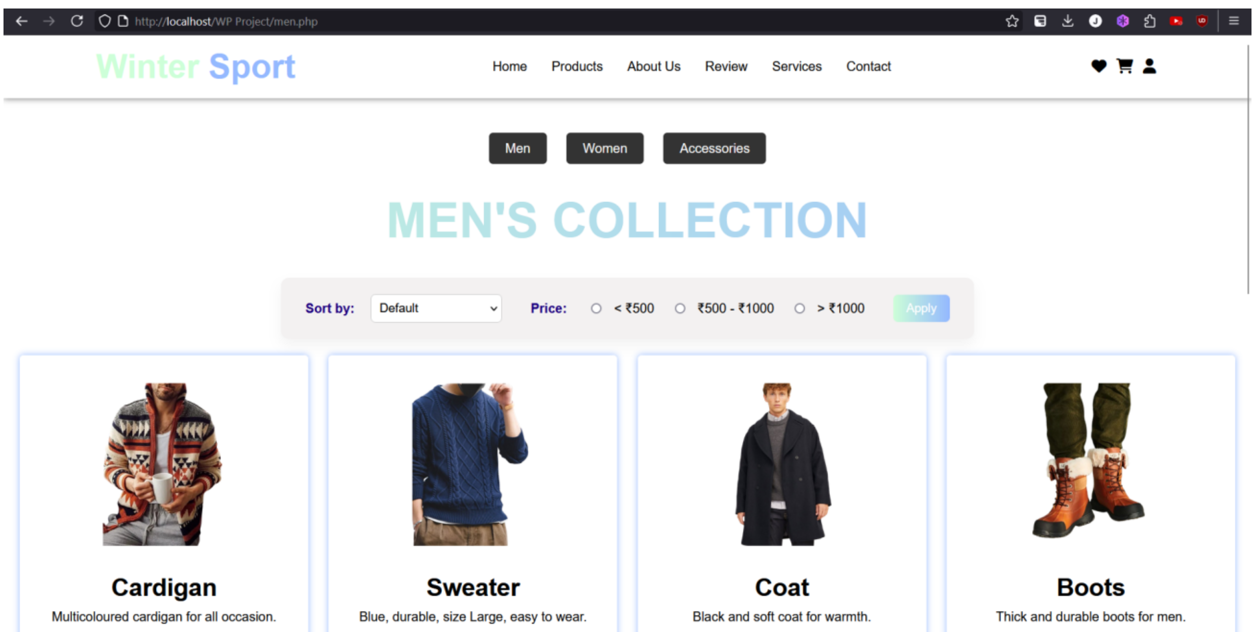


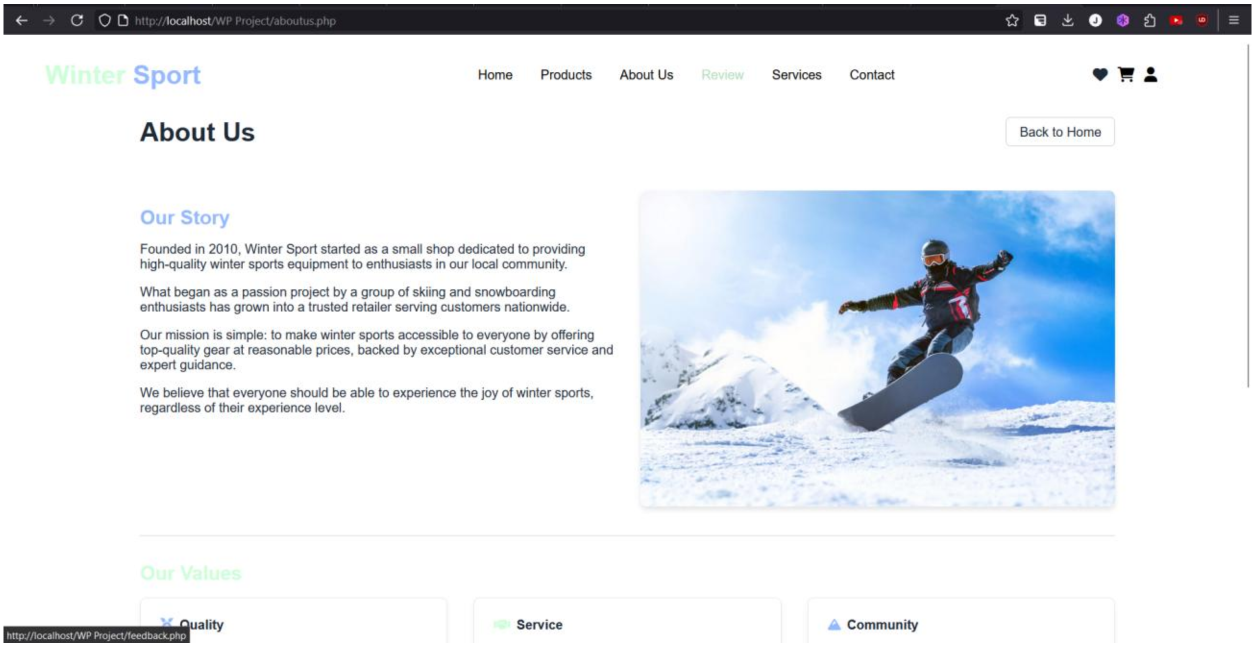



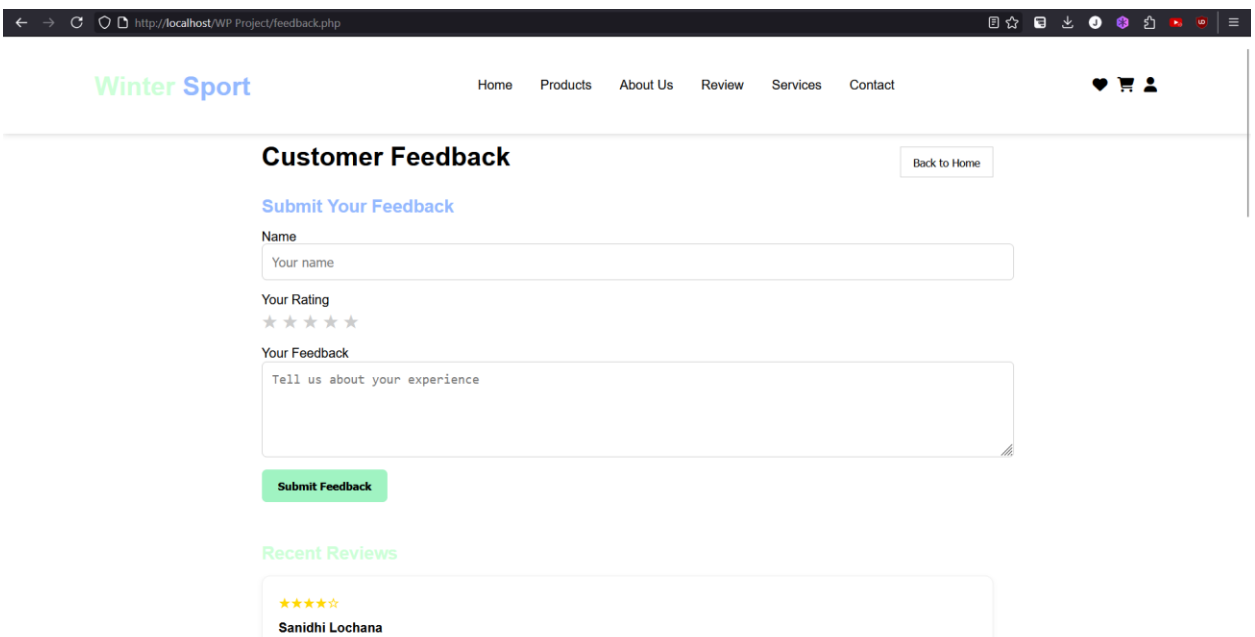

http://localhost/WP Project/index.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
Winter Sport
Collection
Welcome to Winter Sport, your one-stop destination for top-quality winter sports gear! Whether you're carving down the slopes, conquering backcountry trails, or just embracing the winter chill, we've got the perfect equipment and apparel to keep you warm, safe, and performing at your best.
SHOP NOW

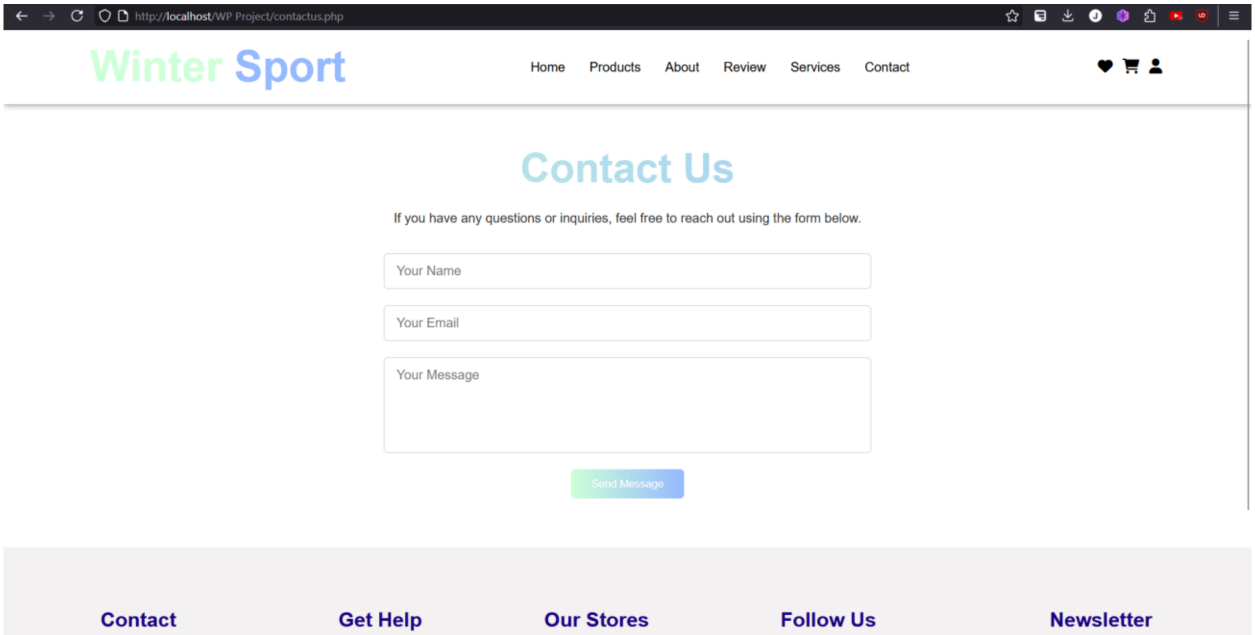

http://localhost/WP Project/index.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
NEW ARRIVALS
Ski Jacket
Warm Black & Yellow Ski Jacket.
₹100.99
Add To Cart
Ski
Durable black skis, large size, easy to handle for smooth rides.
₹200.99
Add To Cart
NIKE Boots
High-performance snow boots with solid grip and warm lining.
₹175.99
Add To Cart
NIKE Skis
Lightweight skis designed for beginners and pros alike.
₹120.99
Add To Cart

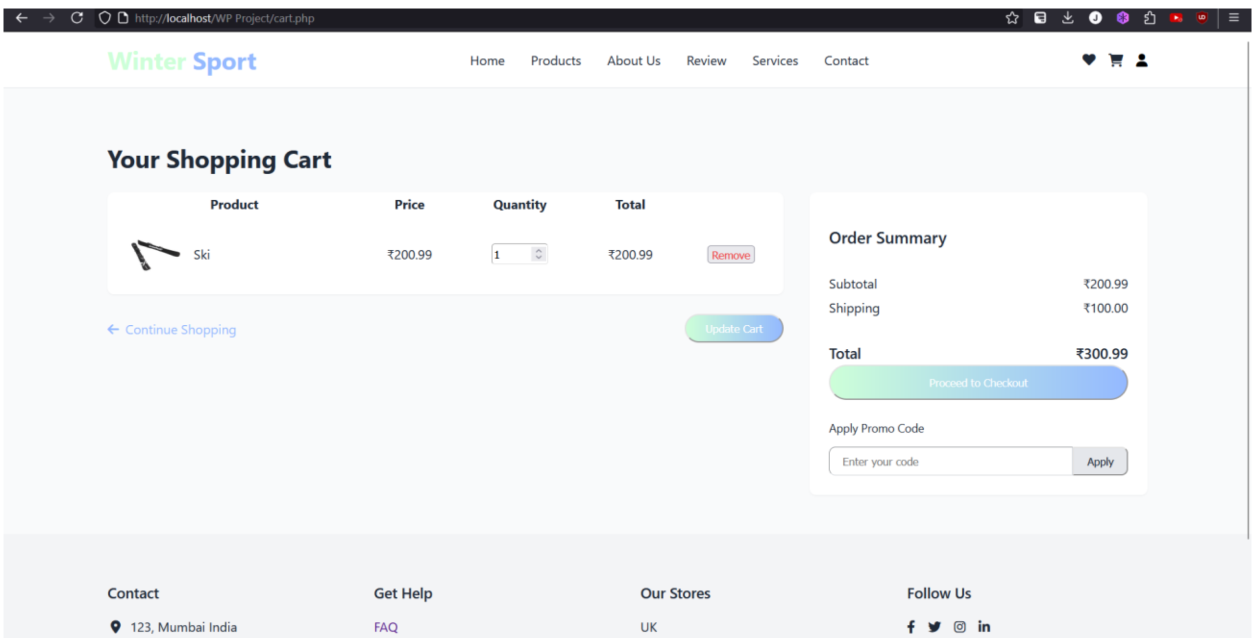

http://localhost/WP Project/index.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
CUSTOMER'S REVIEW
Sanidhi Lochana
Absolutely love my new snowboard! The quality is top-notch, and the shipping was super fast. Customer service was also very helpful in choosing the right size. Will definitely be back for more!
Sayuru Tharanga
Decent quality, but the sizing was a bit off. Had to exchange my gloves for a bigger size. The return process was smooth, but I wish the size guide was more accurate
Senuda Dilwan
Not the best experience. My order was delayed, and when it arrived, the snowboard had a small scratch. Customer service was polite but took a while to respond.
Kaveesha Vidurangi
The gear is good, but the packaging was slightly damaged when it arrived. Luckily, the product was fine. Customer support was responsive, but shipping could be improved
John Deo
Bought a ski jacket from here, and it kept me warm even in freezing temperatures. Great selection and fair prices. Highly recommend!
Charith Aruna
This store never disappoints! I've been shopping here for years, and the gear is always reliable. My new ski boots fit perfectly, and they arrived just in time for my trip!

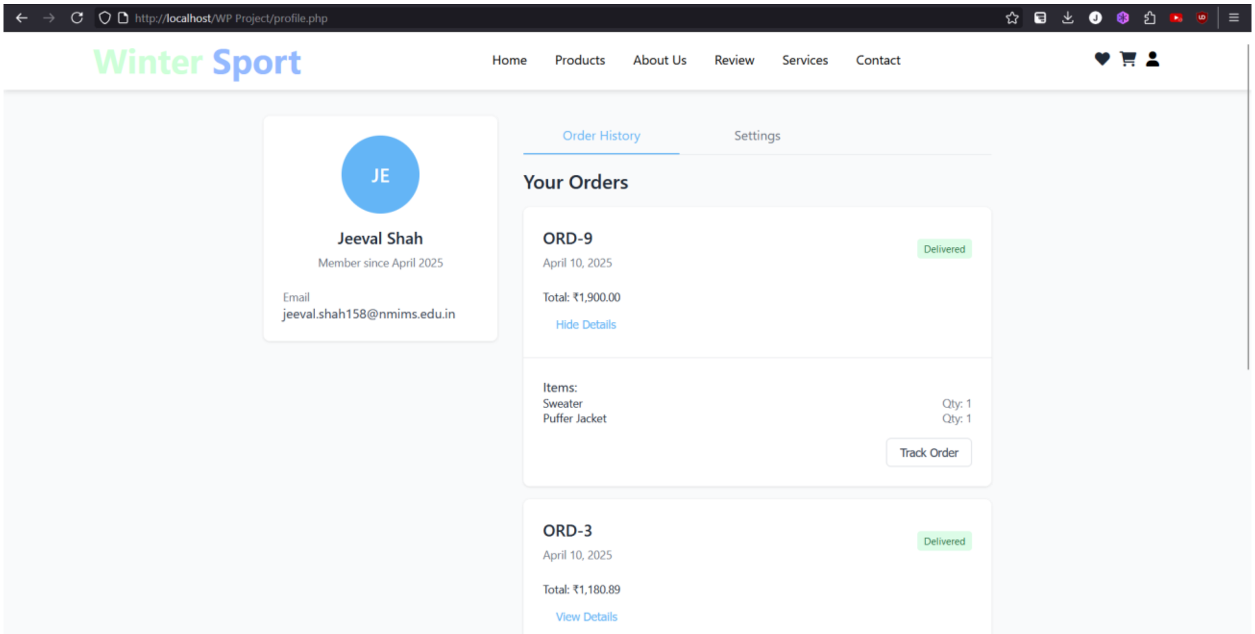

http://localhost/WP Project/men.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
Men
Women
Accessories
MEN'S COLLECTION
Sort by:
Default
Price:
< ₹500
₹500 - ₹1000
> ₹1000
Apply
Cardigan
Multicoloured cardigan for all occasion.
₹1000.00
Sweater
Blue, durable, size Large, easy to wear.
₹1100.00
Coat
Black and soft coat for warmth.
₹1200.00
Boots
Thick and durable boots for men.
₹1500.00

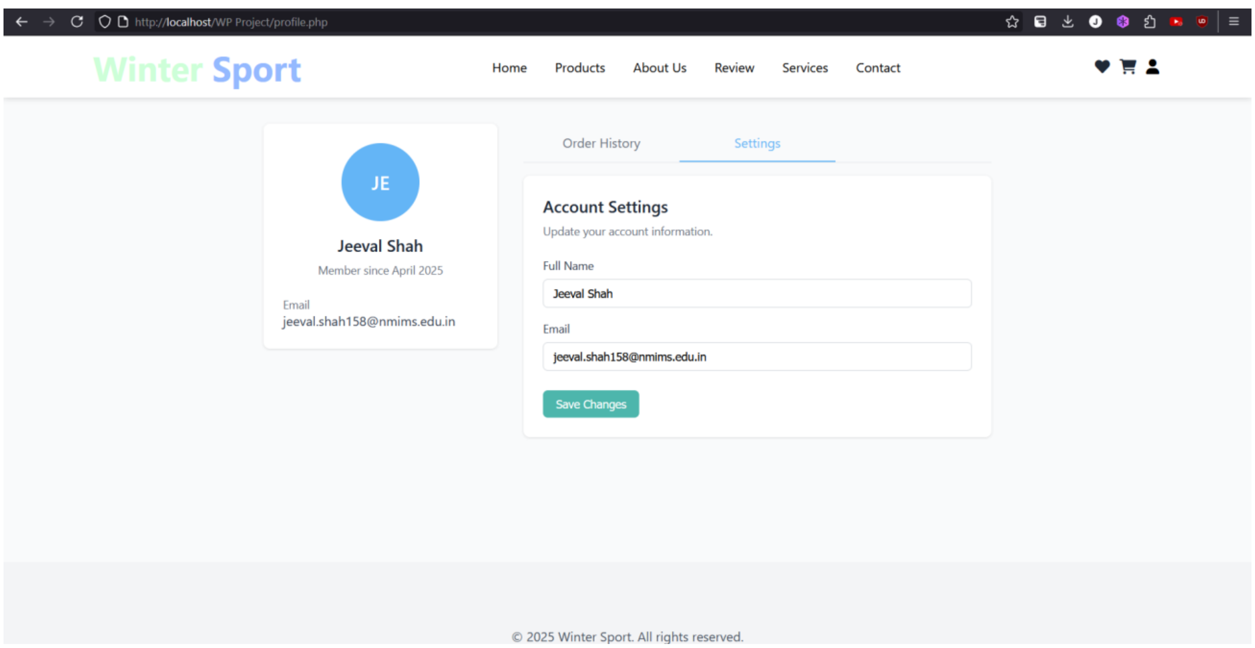

http://localhost/WP Project/aboutus.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
About Us
Back to Home
Our Story
Founded in 2010, Winter Sport started as a small shop dedicated to providing high-quality winter sports equipment to enthusiasts in our local community.
What began as a passion project by a group of skiing and snowboarding enthusiasts has grown into a trusted retailer serving customers nationwide.
Our mission is simple: to make winter sports accessible to everyone by offering top-quality gear at reasonable prices, backed by exceptional customer service and expert guidance.
We believe that everyone should be able to experience the joy of winter sports, regardless of their experience level.
Our Values
Quality
Service
Community
http://localhost/WP Project/feedback.php


http://localhost/WP Project/feedback.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
Customer Feedback
Back to Home
Submit Your Feedback
Name
Your name
Your Rating
Your Feedback
Tell us about your experience
Submit Feedback
Recent Reviews
Sanidhi Lochana


http://localhost/WP Project/contactus.php
Winter Sport
Home
Products
About
Review
Services
Contact
Contact Us
If you have any questions or inquiries, feel free to reach out using the form below.
Your Name
Your Email
Your Message
Send Message
Contact
Get Help
Our Stores
Follow Us
Newsletter


http://localhost/WP Project/cart.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
Your Shopping Cart
Product
Price
Quantity
Total
Ski
₹200.99
1
₹200.99
Remove
Continue Shopping
Update Cart
Order Summary
Subtotal
₹200.99
Shipping
₹100.00
Total
₹300.99
Proceed to Checkout
Apply Promo Code
Enter your code
Apply
Contact
123, Mumbai India
Get Help
FAQ
Our Stores
UK
Follow Us


http://localhost/WP Project/profile.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
JE
Jeeval Shah
Member since April 2025
Email
jeeval.shah158@nmims.edu.in
Order History
Settings
Your Orders
ORD-9
Delivered
April 10, 2025
Total: ₹1,900.00
Hide Details
Items:
Sweater
Qty: 1
Puffer Jacket
Qty: 1
Track Order
ORD-3
Delivered
April 10, 2025
Total: ₹1,180.89
View Details


http://localhost/WP Project/profile.php
Winter Sport
Home
Products
About Us
Review
Services
Contact
JE
Jeeval Shah
Member since April 2025
Email
jeeval.shah158@nmims.edu.in
Order History
Settings
Account Settings
Update your account information.
Full Name
Jeeval Shah
Email
jeeval.shah158@nmims.edu.in
Save Changes
© 2025 Winter Sport. All rights reserved.

# VII. Self -Learning beyond classroom

While working on the DBMS mini-project, I went beyond classroom teachings to explore several new concepts and tools. I learned how to design an efficient ER diagram and convert it into a normalized relational schema, ensuring data consistency and avoiding redundancy.

I also learned how to write complex SQL queries, including nested subqueries, aggregate functions, and joins to retrieve meaningful insights from the database.

Additionally, I experimented with frontend-database integration using tools like PHP and MySQL Workbench, which was not covered in class but added a practical edge to the project.

This process of self-learning allowed me to better understand real-world database applications and strengthened my ability to work independently, debug efficiently, and approach problems with a logical mindset.

# VIII. Learning from the Project

This project significantly enhanced my understanding of how database systems work in real-world applications. I gained hands-on experience in designing ER diagrams, normalizing data, and converting conceptual designs into structured relational schemas.

It also improved my skills in SQL query writing, including the use of joins, aggregate functions, subqueries, and constraints to manage and retrieve data efficiently. Implementing triggers and stored procedures gave me practical insight into how business logic can be embedded directly within the database.

Beyond technical skills, this project helped me improve my problem-solving abilities, collaboration skills, and attention to detail while debugging. I also learned the importance of planning a clear schema early in the development process to avoid complications later.

Overall, the project bridged the gap between theoretical concepts learned in class and their practical implementation, preparing me better for industry-level database work.

# IX. Challenges Faced

During the course of this project, we encountered several challenges. One of the initial hurdles was in the designing phase of the ER diagram — ensuring all entities, relationships, and attributes were captured correctly and logically without redundancy.

Another challenge was in normalizing the database without losing any critical information. Striking a balance between reducing data redundancy and maintaining query performance took time and several iterations.

We also faced difficulties in writing complex SQL queries, especially involving nested subqueries and multi-table joins. Additionally, implementing constraints and triggers required a deep understanding of database rules to ensure data integrity without restricting necessary operations.

On the frontend side, one of the major difficulties was in connecting the user interface with the database. Ensuring smooth data flow from form inputs to the backend required proper handling of requests, responses, and SQL execution. Creating intuitive UI/UX components, validating user inputs, and displaying results or errors clearly was also time-consuming. Styling the frontend to make it user-friendly while keeping the code manageable added another layer of challenge.
Finally, coordinating as a team, especially while managing frontend-backend integration and version control, required effective communication and regular testing to avoid conflicts and ensure everything worked smoothly.

# X. Conclusion

This DBMS project has been a valuable learning experience, blending theory with real-world implementation. Our key takeaways include:

- A solid understanding of database design and normalization principles
- Proficiency in writing efficient and optimized SQL queries
- The importance of planning and organizing data logically
- Improved teamwork, communication, and debugging skills

Overall, the project gave us a deeper appreciation of how structured data management forms the backbone of most software systems and how crucial database design is to building scalable applications.