E-commerce Application on IBM Cloud Foundry

Phase 5 : Documentation and Submission

PHASE – 1

PROBLEM STATEMENT:

- Building an artisanal e-commerce platform to connect skilled artisans with a global audience
- This application showcases their handmade products.
- Provides features like secure shopping carts, payment gateways, and an intuitive checkout process
- Adding features which enhances Platform Design, Product Showcase.
- User Authentication, Shopping Cart and Checkout, Payment Integration, and User Experience.

DESIGN THINKING :

- Understand the needs of both customers and businesses in the e-commerce space.
- Clearly define the problem, considering scalability, security, integration, and customization challenges and brainstorm innovative solutions to address these challenges.
- Continuously refine and improve the application based on user feedback and emerging market trends.
- Prioritize user experience and ensure the application aligns with user expectations and design a scalable architecture.
- Engage potential users to test prototypes and refine the design based on their input
- Create rapid prototypes of the application's key features to test ideas and gather feedback.
- Adopt an agile development approach to flexibly adapt to changing requirements and market dynamics throughout the project.

By applying these principles of design thinking, the e-commerce application on IBM Foundry can be developed with a strong focus on user needs, innovation, and adaptability, ultimately leading to a more successful application.

PHASE -2

INNOVATION :

- First we plan the overall design of the application like position of the search bar, products, profile etc.
- First step is to design a login page for the application with privacy.
- It consists of email id and password.
- Next we design the elements that should be maintained in the user's profile like phone number
- The opening page consist of search bar and below it all the offers and live sale details will be displayed.
- When scrolling it down all other products options will be in display with trending products that is sold fast.

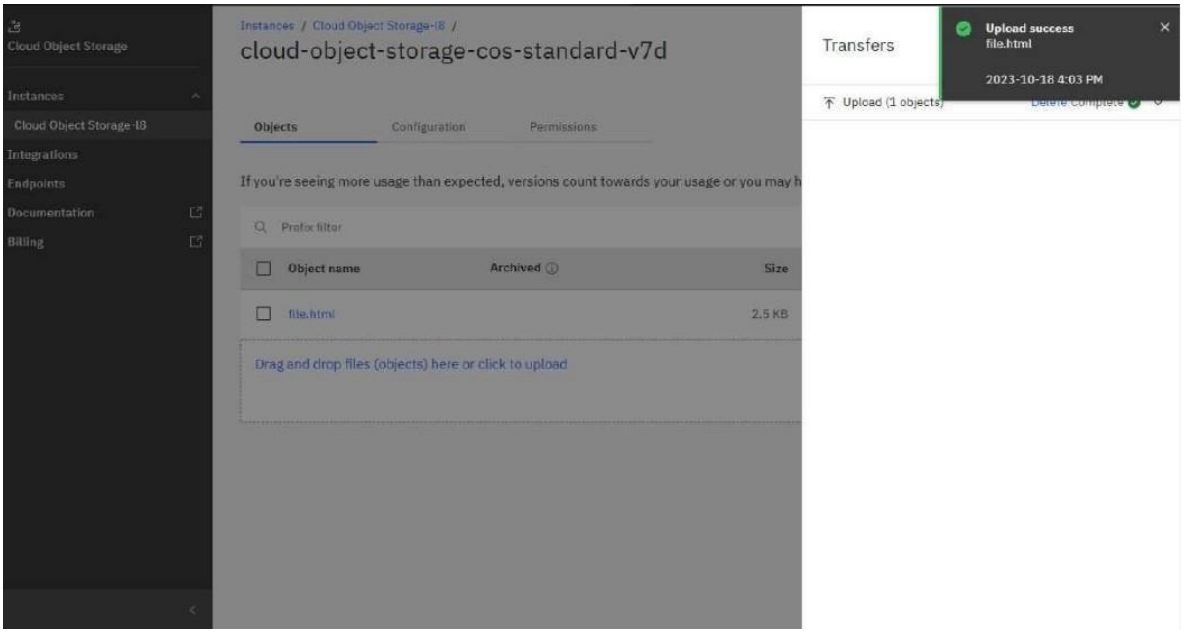
- The product buying page consist of all payment methods that include EMI and cash on delivery with available card offers.

- It also consist of the date on which the product will be delivered with tracking.

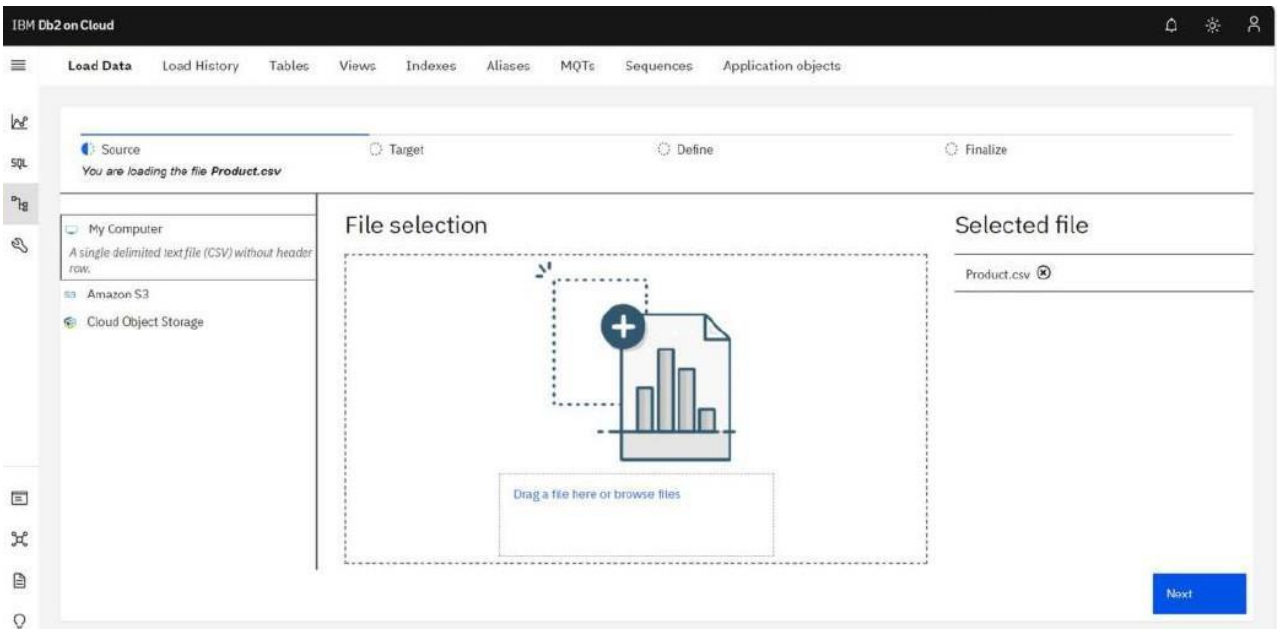
PHASE-3

- In this phase we have to create a login page and upload the data about E-commerce. Step by step process of creating and databases .

CREATING A LOGIN PAGE OR HOME PAGE



SSTYI


IBM Db2 on Cloud
Load Data
Load History
Tables
Views
Indexes
Aliases
MQTs
Sequences
Application objects
Source
Target
Define
Finalize
You are loading the file Product.csv
My Computer
A single delimited text file (CSV) without header row.
Amazon S3
Cloud Object Storage
File selection
Drag a file here or browse files
Selected file
Product.csv
Next


"zws19489",
"-p",
"nBtr13esbhB5TRim",
"--ssl",
"--sslCAFile",
"1dd14d0c-1b52-4f63-a606-53ecba28771d",
"--authenticationDatabase",
"admin",
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FFQkFRVUFBNE1CRHd8d2dnRUtBb0lCQVFEb0ZFNGQ6SGdOeXZMUVIwR3gKQTB0amRXQnM4NVBjTDNyRStjN1R3K2diRUdQSUxJU0VZV3o4Y1g1TG1XQk0rY
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abase admin --host ea286ace-86c7-4d5b-8580-3fbfa46b1c66.bs2io90108kqb1od81cg.databases.appdomain.cloud:31505"
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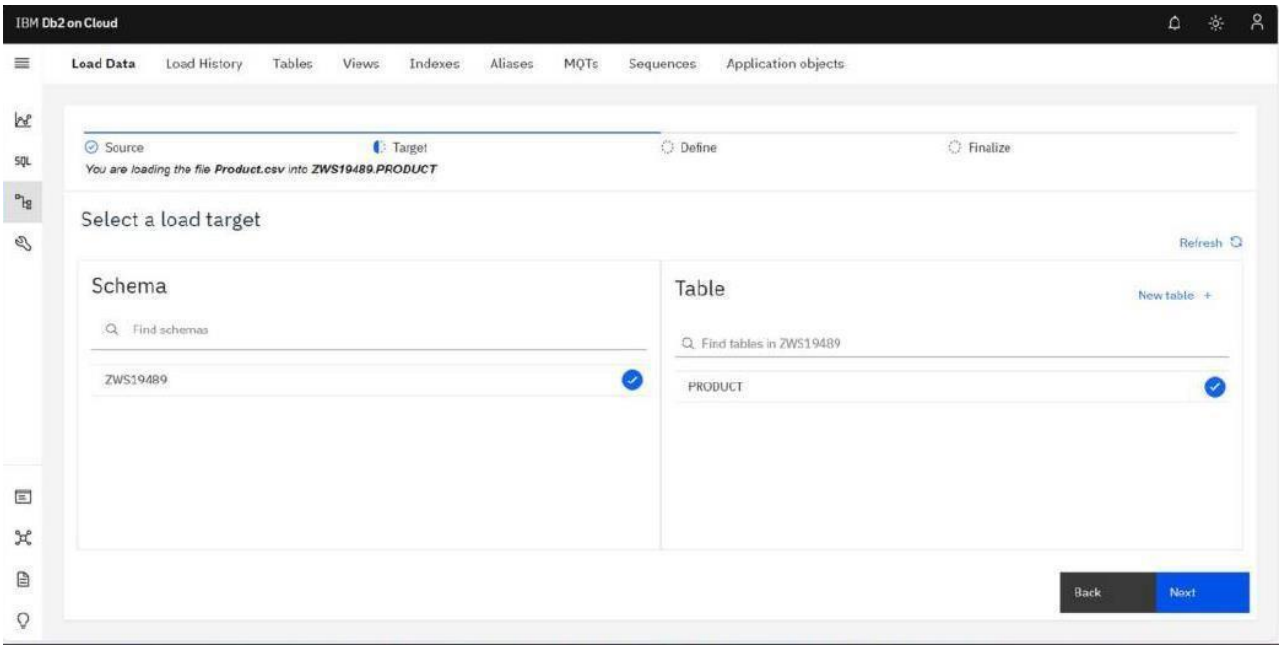
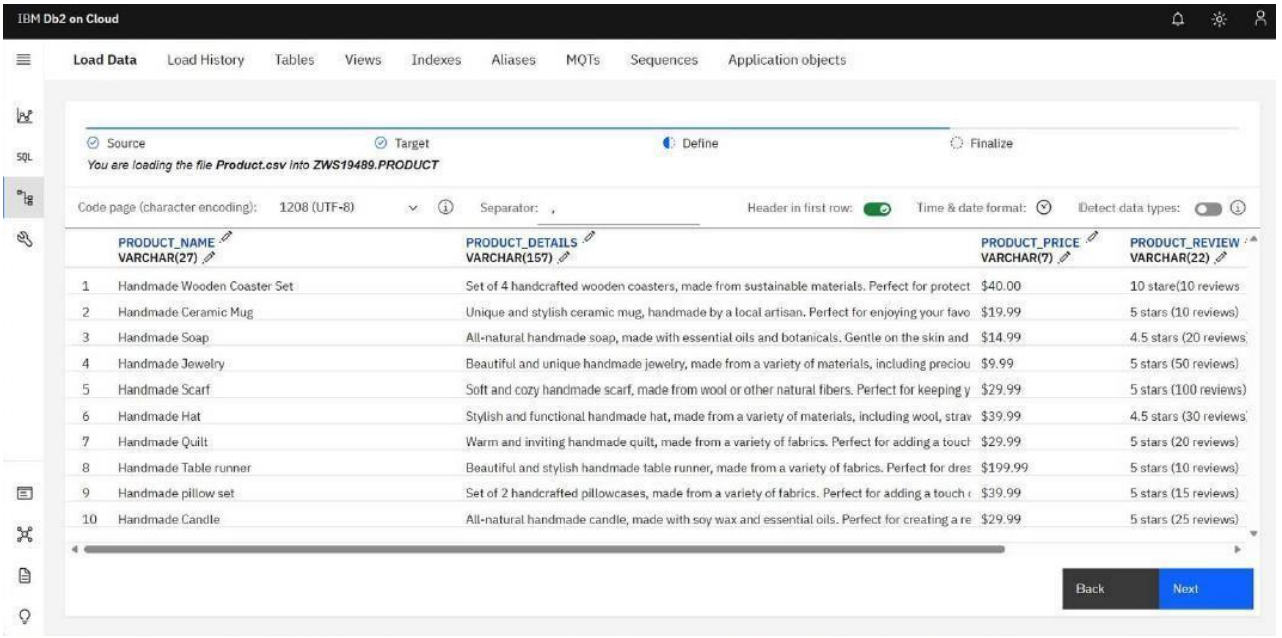
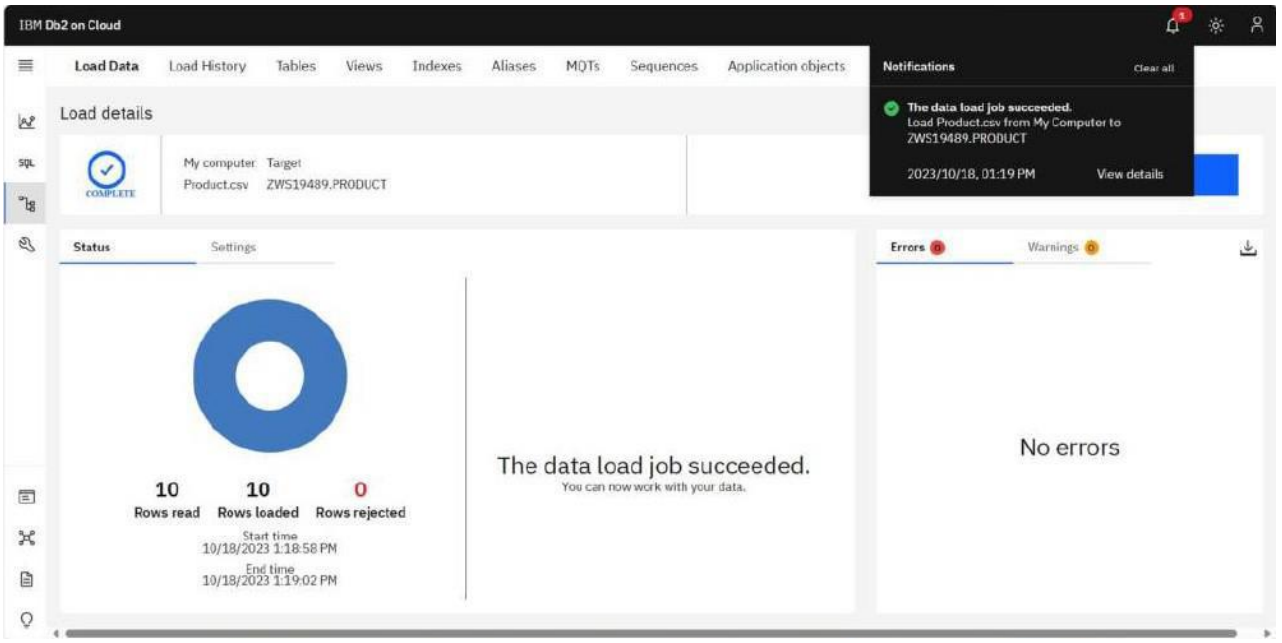
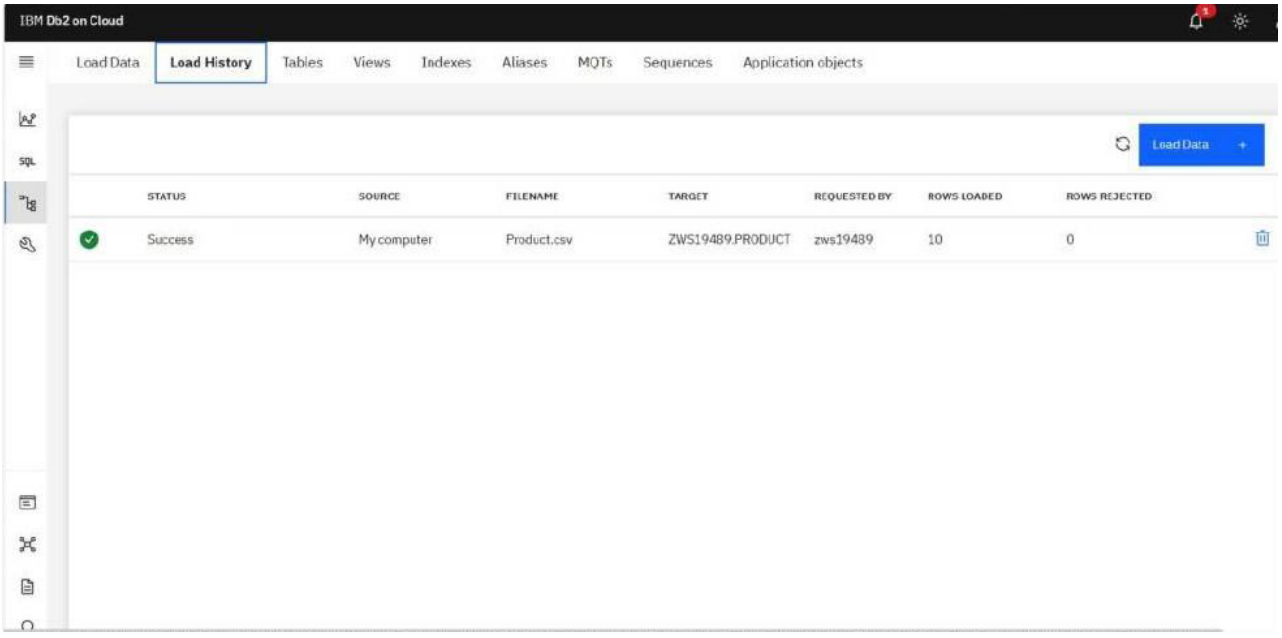
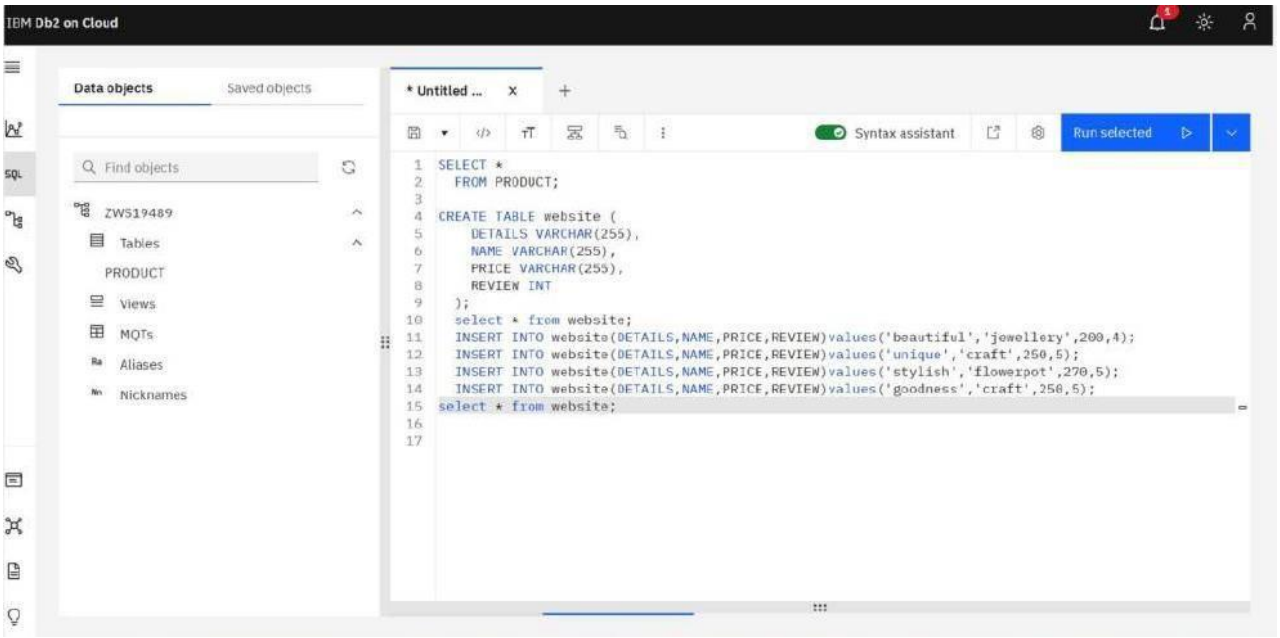
},
"db2": {

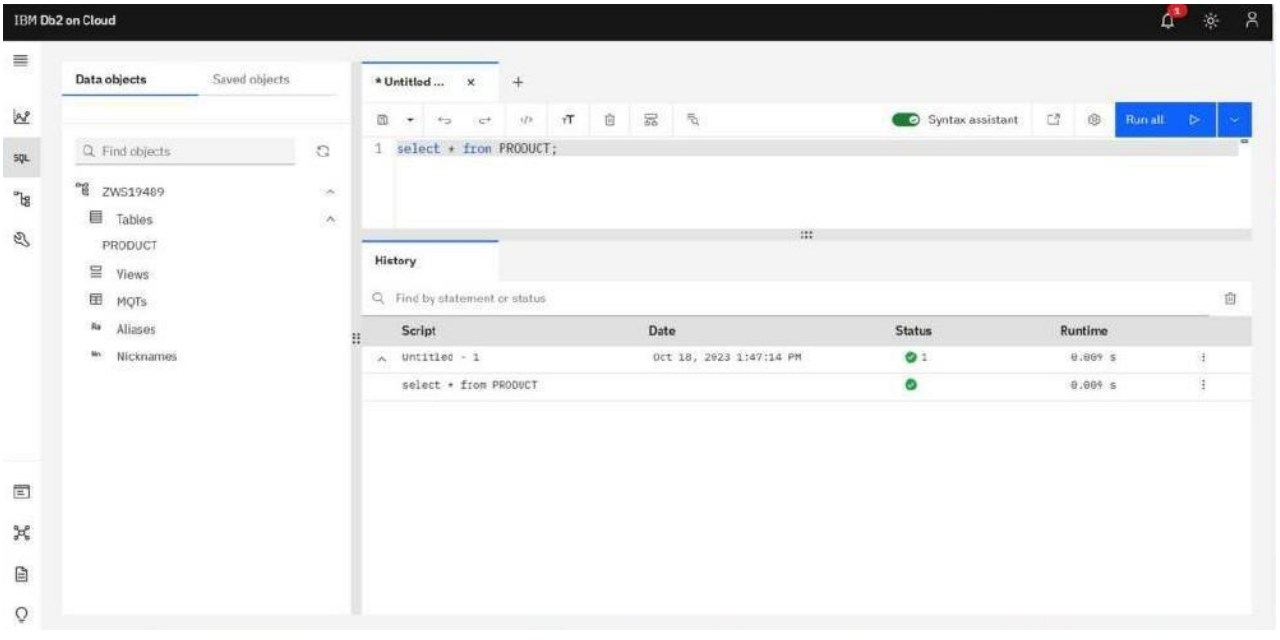

IBM Db2 on Cloud
Load Data
Load History
Tables
Views
Indexes
Aliases
MQTs
Sequences
Application objects
Source
Target
Define
Finalize
You are loading the file Product.csv into ZWS19489.PRODUCT
Select a load target
Refresh
Schema
Find schemas
ZWS19489
Table
New table +
Find tables in ZWS19489
PRODUCT
Back
Next

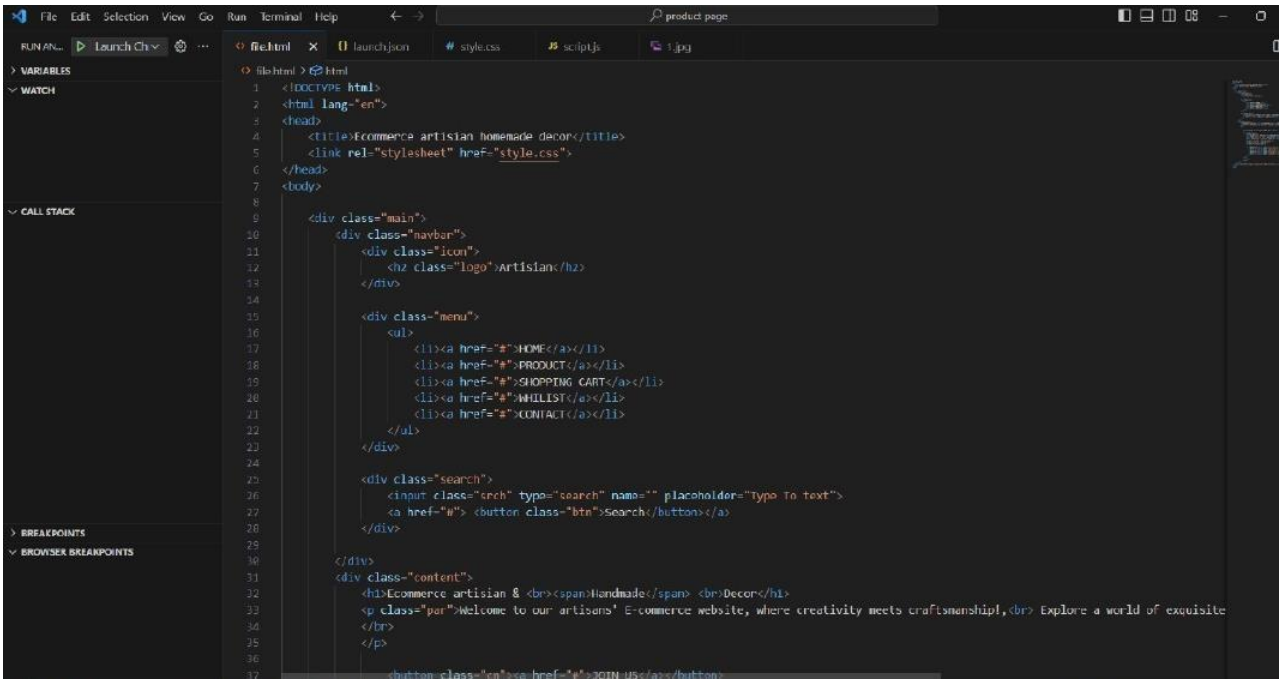

IBM Db2 on Cloud
Load Data
Load History
Tables
Views
Indexes
Aliases
MQTs
Sequences
Application objects
Source
Target
Define
Finalize
You are loading the file Product.csv into ZWS19489.PRODUCT
Code page (character encoding): 1208 (UTF-8)
Separator: ,
Header in first row:
Time & date format:
Detect data types:
PRODUCT_NAME VARCHAR(27)
PRODUCT_DETAILS VARCHAR(157)
PRODUCT_PRICE VARCHAR(7)
PRODUCT_REVIEW VARCHAR(22)
1 Handmade Wooden Coaster Set | Set of 4 handcrafted wooden coasters, made from sustainable materials. Perfect for protect | $40.00 | 10 stare(10 reviews
2 Handmade Ceramic Mug | Unique and stylish ceramic mug, handmade by a local artisan. Perfect for enjoying your favo | $19.99 | 5 stars (10 reviews)
3 Handmade Soap | All-natural handmade soap, made with essential oils and botanicals. Gentle on the skin and | $14.99 | 4.5 stars (20 reviews
4 Handmade Jewelry | Beautiful and unique handmade jewelry, made from a variety of materials, including preciou | $9.99 | 5 stars (50 reviews)
5 Handmade Scarf | Soft and cozy handmade scarf, made from wool or other natural fibers. Perfect for keeping y | $29.99 | 5 stars (100 reviews)
6 Handmade Hat | Stylish and functional handmade hat, made from a variety of materials, including wool, strav | $39.99 | 4.5 stars (30 reviews
7 Handmade Quilt | Warm and inviting handmade quilt, made from a variety of fabrics. Perfect for adding a touct | $29.99 | 5 stars (20 reviews)
8 Handmade Table runner | Beautiful and stylish handmade table runner, made from a variety of fabrics. Perfect for dres | $199.99 | 5 stars (10 reviews)
9 Handmade pillow set | Set of 2 handcrafted pillowcases, made from a variety of fabrics. Perfect for adding a touch (| $39.99 | 5 stars (15 reviews)
10 Handmade Candle | All-natural handmade candle, made with soy wax and essential oils. Perfect for creating a re | $29.99 | 5 stars (25 reviews)
Back
Next


IBM Db2 on Cloud
Load Data
Load History
Tables
Views
Indexes
Aliases
MQTs
Sequences
Application objects
Notifications
Clear all
The data load job succeeded.
Load Product.csv from My Computer to ZWS19489.PRODUCT
2023/10/18, 01:19 PM
View details
Load details
COMPLETE
My computer Target
Product.csv ZWS19489.PRODUCT
Status
Settings
Errors
Warnings
10
Rows read
10
Rows loaded
0
Rows rejected
Start time
10/18/2023 1:18:58 PM
End time
10/18/2023 1:19:02 PM
The data load job succeeded.
You can now work with your data.
No errors

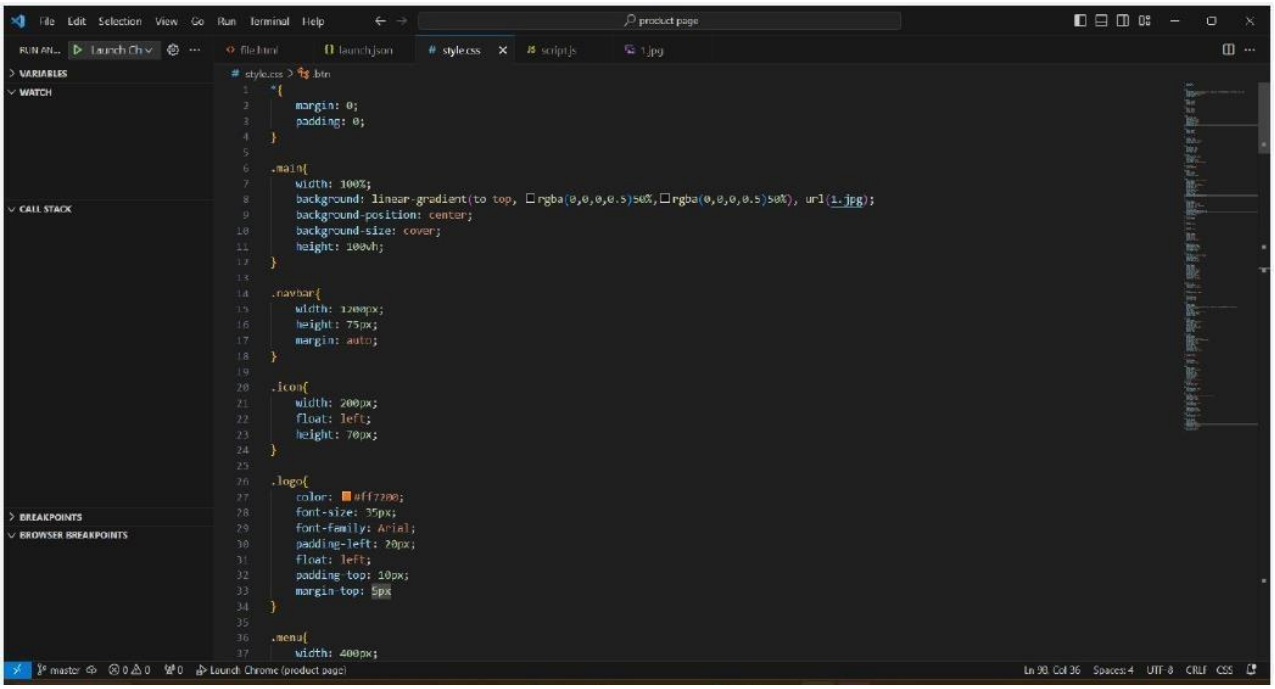

IBM Db2 on Cloud
Load Data
Load History
Tables
Views
Indexes
Aliases
MQTs
Sequences
Application objects
Load Data
STATUS
SOURCE
FILENAME
TARGET
REQUESTED BY
ROWS LOADED
ROWS REJECTED
Success
My computer
Product.csv
ZWS19489.PRODUCT
zws19489
10
0


IBM Db2 on Cloud
Data objects
Saved objects
Find objects
ZWS19489
Tables
PRODUCT
Views
MQTs
Aliases
Nicknames
* Untitled ...
Syntax assistant
Run selected
SELECT *
FROM PRODUCT;
CREATE TABLE website (
DETAILS VARCHAR(255),
NAME VARCHAR(255),
PRICE VARCHAR(255),
REVIEW INT
);
select * from website;
INSERT INTO website(DETAILS,NAME,PRICE,REVIEW)values('beautiful','jewellery',200,4);
INSERT INTO website(DETAILS,NAME,PRICE,REVIEW)values('unique','craft',250,5);
INSERT INTO website(DETAILS,NAME,PRICE,REVIEW)values('stylish','flowerpot',270,5);
INSERT INTO website(DETAILS,NAME,PRICE,REVIEW)values('goodness','craft',250,5);
select * from website;

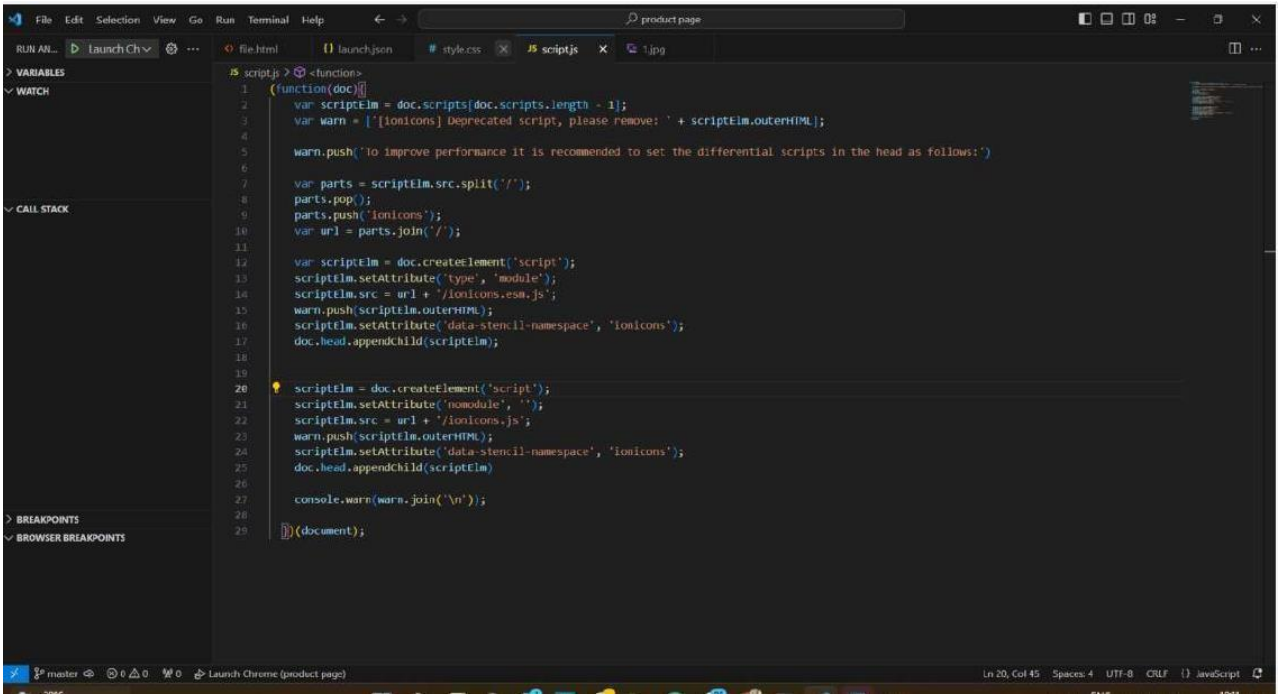

IBM Db2 on Cloud
Data objects
Saved objects
Find objects
ZWS19489
Tables
PRODUCT
Views
MQTs
Aliases
Nicknames
* Untitled ...
Syntax assistant
Run all
select * from PRODUCT;
History
Find by statement or status
Script
Date
Status
Runtime
Untitled - 1
Oct 18, 2023 1:47:14 PM
1
0.009 s
select * from PRODUCT
0.004 s

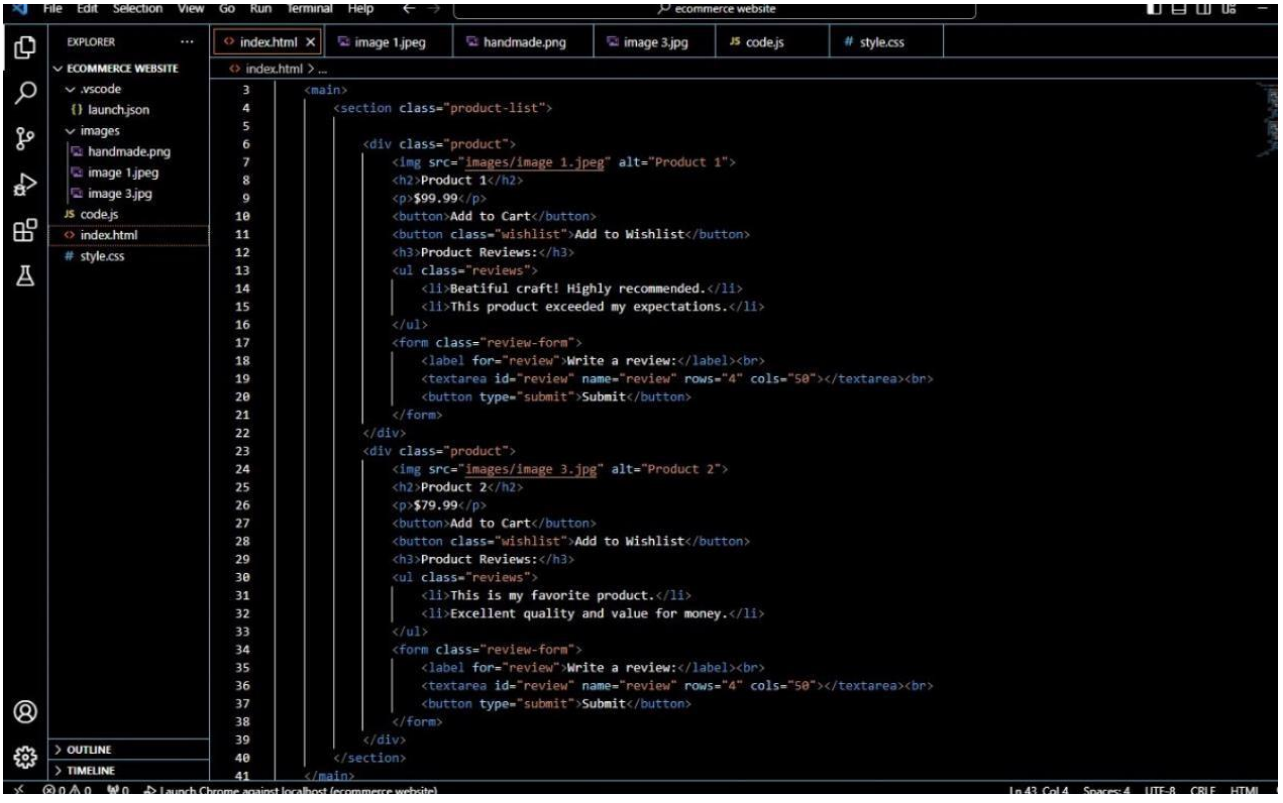


```html
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Ecommerce artisian homemade decor</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>

    <div class="main">
        <div class="navbar">
            <div class="icon">
                <h2 class="logo">Artisian</h2>
            </div>

            <div class="menu">
                <ul>
                    <li><a href="#">HOME</a></li>
                    <li><a href="#">PRODUCT</a></li>
                    <li><a href="#">SHOPPING CART</a></li>
                    <li><a href="#">WHILLIST</a></li>
                    <li><a href="#">CONTACT</a></li>
                </ul>
            </div>

            <div class="search">
                <input class="srch" type="search" name="" placeholder="Type To text">
                <a href="#"> <button class="btn">Search</button></a>
            </div>

        </div>
        <div class="content">
            <h1>Ecommerce artisian & <br><span>Handmade</span> <br>Decor</h1>
            <p class="par">Welcome to our artisans' E-commerce website, where creativity meets craftsmenship!,<br> Explore a world of exquisite
            </br>
            </p>

                <button class="cn"><a href="#">JOIN US</a></button>
```



```css
*{
    margin: 0;
    padding: 0;
}

.main{
    width: 100%;
    background: linear-gradient(to top, rgba(0,0,0,0.5)50%,rgba(0,0,0,0.5)50%), url(1.jpg);
    background-position: center;
    background-size: cover;
    height: 100vh;
}

.navbar{
    width: 1200px;
    height: 75px;
    margin: auto;
}

.icon{
    width: 200px;
    float: left;
    height: 70px;
}

.logo{
    color: #ff7700;
    font-size: 35px;
    font-family: Arial;
    padding-left: 20px;
    float: left;
    padding-top: 10px;
    margin-top: 5px
}

.menu{
    width: 400px;
```


File Edit Selection View Go Run Terminal Help
product page
RUN AN... Launch Ch
file.html
launch.json
style.css
script.js
1.jpg
VARIABLES
WATCH
CALL STACK
BREAKPOINTS
BROWSER BREAKPOINTS
script.js > <function>
(function(doc){
var scriptElm = doc.scripts[doc.scripts.length - 1];
var warn = ['[ionicons] Deprecated script, please remove: ' + scriptElm.outerHTML];
warn.push('To improve performance it is recommended to set the differential scripts in the head as follows:')
var parts = scriptElm.src.split('/');
parts.pop();
parts.push('ionicons');
var url = parts.join('/');
var scriptElm = doc.createElement('script');
scriptElm.setAttribute('type', 'module');
scriptElm.src = url + '/ionicons.esm.js';
warn.push(scriptElm.outerHTML);
scriptElm.setAttribute('data-stencil-namespace', 'ionicons');
doc.head.appendChild(scriptElm);
scriptElm = doc.createElement('script');
scriptElm.setAttribute('nomodule', '');
scriptElm.src = url + '/ionicons.js';
warn.push(scriptElm.outerHTML);
scriptElm.setAttribute('data-stencil-namespace', 'ionicons');
doc.head.appendChild(scriptElm)
console.warn(warn.join('\n'));
})(document);
master
Launch Chrome (product page)
Ln 20, Col 45
Spaces: 4
UTF-8
CRLF
JavaScript


File Edit Selection View Go Run Terminal Help
ecommerce website
EXPLORER
ECOMMERCE WEBSITE
.vscode
launch.json
images
handmade.png
image 1.jpeg
image 3.jpg
code.js
index.html
style.css
OUTLINE
TIMELINE
index.html
image 1.jpeg
handmade.png
image 3.jpg
code.js
style.css
index.html > ...
<main>
<section class="product-list">

<img src="images/image 1.jpeg" alt="Product 1">
<h2>Product 1</h2>
$99.99
<button>Add to Cart</button>
<button class="wishlist">Add to Wishlist</button>
<h3>Product Reviews:</h3>
<ul class="reviews">
Beatiful craft! Highly recommended.
This product exceeded my expectations.

<form class="review-form">
<label for="review">Write a review:</label>
<textarea id="review" name="review" rows="4" cols="50"></textarea>
<button type="submit">Submit</button>
</form>

<img src="images/image 3.jpg" alt="Product 2">
<h2>Product 2</h2>
$79.99
<button>Add to Cart</button>
<button class="wishlist">Add to Wishlist</button>
<h3>Product Reviews:</h3>
<ul class="reviews">
This is my favorite product.
Excellent quality and value for money.

<form class="review-form">
<label for="review">Write a review:</label>
<textarea id="review" name="review" rows="4" cols="50"></textarea>
<button type="submit">Submit</button>
</form>

</section>
</main>
Launch Chrome against localhost (ecommerce website)
Ln 43, Col 4
Spaces: 4
UTF-8
CRLF
HTML

PHASE- 4

DEVELOPMENT PART :

```
const express = require('express');
const { Pool } = require('pg');
const app = express();
const port = process.env.PORT || 3000;
// PostgreSQL
configurationconst pool =
new Pool({ user:
'your_username', host:
'your_host',
database: 'your_database',
password: 'your_password',
port: 5432,
});
// Database schema creation function
const createTables = async () => {
const createProductsTable = `CREATE TABLE IF NOT EXISTS products
(product_id SERIAL PRIMARY KEY,
product_name VARCHAR(255) NOT
NULL,description TEXT,
price
DECIMAL,
image_url
TEXT,
category_id INT
);`;
const createCategoriesTable = `CREATE TABLE IF NOT EXISTS categories
(category_id SERIAL PRIMARY KEY,
category_name VARCHAR(255) NOT NULL
);`;
const createUsersTable = `CREATE TABLE IF NOT EXISTS users
(user_id SERIAL PRIMARY KEY,
username VARCHAR(255) NOT
NULL, password VARCHAR(255)
NOT NULL, email VARCHAR(255)
NOT NULL
);`;
const createOrdersTable = `CREATE TABLE IF NOT EXISTS orders
(order_id SERIAL PRIMARY KEY,
user_id INT,
product_id INT,
quantity INT,
total_price
DECIMAL,
order_date DATE,
FOREIGN KEY (user_id) REFERENCES users(user_id),
FOREIGN KEY (product_id) REFERENCES products(product_id)
);`;
try {
await pool.query(createProductsTable);
```

```
await pool.query(createCategoriesTable);
await pool.query(createUsersTable);
await pool.query(createOrdersTable);
} catch (error) {
console.error('Error creating tables', error);
}
};
app.use(express.json());
// User registration endpoint
app.post('/register', async (req, res) => {
try {
const { username, password, email } = req.body;
const insertUserQuery = 'INSERT INTO users (username, password, email) VALUES ($1,
$2,
$3)';
await pool.query(insertUserQuery, [username, password, email]);
res.status(201).send('User registered successfully');
} catch (error) {
console.error('Error registering user', error);
res.status(500).send('Internal Server Error');
}
});
// User login endpoint
app.post('/login', async (req, res) => {
try {
const { username, password } = req.body;
const userQuery = 'SELECT * FROM users WHERE username = $1 AND password = $2';
const { rows } = await pool.query(userQuery, [username, password]);
if (rows.length === 1) {
res.status(200).send('Login successful');
} else {
res.status(401).send('Invalid credentials');
}
} catch (error) {
console.error('Error during login', error);
res.status(500).send('Internal Server Error');
}
});
// Add to cart endpoint
app.post('/cart/add', async (req, res) => {
try {
const { userId, productId, quantity } = req.body;
// Implement shopping cart functionality here
// You need to manage user carts and quantities
res.status(200).send('Product added to cart successfully');
} catch (error) {
console.error('Error adding to cart', error);
res.status(500).send('Internal Server Error');
}
});
// Remove from cart endpoint
app.post('/cart/remove', async (req, res) => {
```

```
try {
const { userId, productId } = req.body;
// Implement shopping cart functionality here
// Remove products from the user's cart
res.status(200).send('Product removed from cart successfully');
} catch (error) {
console.error('Error removing from cart',
error);res.status(500).send('Internal Server
Error');
}
});
// Checkout endpoint
app.post('/checkout', async (req, res) => {
try {
const { userId, products, totalPrice } = req.body;
// Implement the checkout process, including payment handling
// Create an order entry and update product quantities
res.status(200).send('Checkout successful');
} catch (error) {
console.error('Error during checkout', error);
res.status(500).send('Internal Server Error');
}
});
// Endpoint to fetch all products
app.get('/products', async (req, res) => {
try {
const { rows } = await pool.query('SELECT * FROM
products');res.json(rows);
} catch (error) {
console.error('Error executing query', error);
res.status(500).send('Internal Server Error');
}
});
app.listen(port, async () => {
console.log(`Server is running on port
${port}`);await createTables();
});
```

CONCLUSION :

- An artisanal e-commerce platform that incorporates the above features can help skilled artisans connect with a global audience and showcase their handmade products in a secure and user-friendly environment.

- This can lead to increased sales and profitability for artisans, as well as a wider range of high-quality artisanal products for consumers to enjoy.

- In addition to the above, the platform can also be used to promote and support sustainable and ethical practices in the artisanal sector.

- For example, the platform can encourage artisans to provide information about their materials sourcing, production processes, and fair labor practices.

SUMMARY :

- The platform can also be used to promote artisanal products that are made from sustainable materials and produced in a socially responsible manner.

- By providing a platform for artisans to connect with consumers and share their stories, artisanal e-commerce platforms can play an important role in preserving and promoting traditional crafts and cultures.