**E-commerce Application on IBM Cloud Foundry**

**Abstract:**

This abstract introduces a cutting-edge e-commerce website based on cloud technology, poised to transform the world of online shopping. As businesses and consumers increasingly rely on the internet for their retail needs, the need for a scalable, reliable, and flexible e-commerce platform has become paramount. Leveraging the power of cloud computing, our innovative e-commerce website is designed to meet these demands and offer an unparalleled shopping experience.

**Html code:**

<head>

<link rel="stylesheet" href="./ecommerce.css">

<link href="https://unpkg.com/ionicons@4.5.10-0/dist/css/ionicons.min.css" rel="stylesheet">

</head>

<body>

<header>

<div class="logo"><a href="#">ShoPperZ</a></div>

<div class="menu">

<a href="#">

<ion-icon name="close" class="close"></ion-icon>

</a>

<ul>

<li><a href="#" class="under">HOME</a></li>

<li><a href="#" class="under">SHOP</a></li>

<li><a href="#" class="under">OUR PRODUCTS</a></li>

<li><a href="#" class="under">CONTACT US</a></li>

<li><a href="#" class="under">ABOUT US</a></li>

</ul>

</div>

<div class="search">

<a href=""><input type="text" placeholder="search products" id="input">

<ion-icon class="s" name="search"></ion-icon>

</a>

</div>

<div class="heading">

<ul>

<li><a href="#" class="under">HOME</a></li>

<li><a href="#" class="under">SHOP</a></li>

<li><a href="#" class="under">OUR PRODUCTS</a></li>

<li><a href="#" class="under">CONTACT US</a></li>

<li><a href="#" class="under">ABOUT US</a></li>

</ul>

</div>

<div class="heading1">

<ion-icon name="menu" class="ham"></ion-icon>

</div>

</header>

<section>

<div class="section">

<div class="section1">

<div class="img-slider">

<img src="https://images.pexels.com/photos/6347888/pexels-photo-6347888.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=750&w=1260" alt="" class="img">

<img src="https://images.pexels.com/photos/3962294/pexels-photo-3962294.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=750&w=1260" alt="" class="img">

<img src="https://images.pexels.com/photos/2292953/pexels-photo-2292953.jpeg?auto=compress&cs=tinysrgb&dpr=2&w=500" alt="" class="img">

<img src="https://images.pexels.com/photos/1229861/pexels-photo-1229861.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=750&w=1260" alt="" class="img">

<img src="https://images.pexels.com/photos/1598505/pexels-photo-1598505.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=750&w=1260" alt="" class="img">

</div>

</div>

<div class="section2">

<div class="container">

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/1464625/pexels-photo-1464625.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=650&w=940" alt=""></div>

<div class="name">SHOES</div>

<div class="price">500 rs</div>

<div class="info">Lorem ipsum dolor sit amet consectetur.</div>

</div>

<div class="items">

<div class="img img2"><img src="https://images.pexels.com/photos/3649765/pexels-photo-3649765.jpeg?auto=compress&cs=tinysrgb&dpr=1&w=500" alt=""></div>

<div class="name">MEN's T-SHIRT</div>

<div class="price">300rs</div>

<div class="info">Lorem ipsum dolor sit.</div>

</div>

<div class="items">

<div class="img img3"><img src="https://media.istockphoto.com/photos/folded-blue-jeans-on-a-white-background-modern-casual-clothing-flat-picture-id1281304280" alt=""></div>

<div class="name">JEANS</div>

<div class="price">1200rs</div>

<div class="info">Lorem ipsum dolor sit amet.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/8839887/pexels-photo-8839887.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=650&w=940" alt=""></div>

<div class="name">WATCH</div>

<div class="price">1500 rs</div>

<div class="info">Lorem ipsum dolor sit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/6858618/pexels-photo-6858618.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=650&w=940" alt=""></div>

<div class="name">SMART PHONE</div>

<div class="price">30,000 rs</div>

<div class="info">Lorem ipsum dolor sit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/5552789/pexels-photo-5552789.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=650&w=940" alt=""></div>

<div class="name">TELEVISION</div>

<div class="price">45,000 rs</div>

<div class="info">Lorem ipsum dolor sit amet consectetur.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/4295985/pexels-photo-4295985.jpeg?auto=compress&cs=tinysrgb&dpr=1&w=500" alt=""></div>

<div class="name">HOODIES</div>

<div class="price">700 rs</div>

<div class="info">Lorem ipsum dolor sit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://media.istockphoto.com/photos/vintage-plates-with-silver-teaspoons-picture-id184363070" alt=""></div>

<div class="name">DINNER SET</div>

<div class="price">1100 rs</div>

<div class="info">Lorem ipsum dolor sit amet consectetur adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/6463348/pexels-photo-6463348.jpeg?auto=compress&cs=tinysrgb&dpr=1&w=500" alt=""></div>

<div class="name">BLANKETS</div>

<div class="price">300 rs</div>

<div class="info">Lorem ipsum dolor sit amet consectetur adipisicing.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/2659939/pexels-photo-2659939.jpeg?auto=compress&cs=tinysrgb&dpr=1&w=500" alt=""></div>

<div class="name">LAPTOP</div>

<div class="price">1,00,000 rs</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://media.istockphoto.com/photos/modern-kitchen-microwave-oven-picture-id1144960519" alt=""></div>

<div class="name">MICROWAVE</div>

<div class="price">4000</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://media.istockphoto.com/photos/black-coffee-maker-with-green-led-lights-picture-id177395430" alt=""></div>

<div class="name">COFFEE MAKER</div>

<div class="price">2000</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/6606354/pexels-photo-6606354.jpeg?auto=compress&cs=tinysrgb&dpr=1&w=500" alt=""></div>

<div class="name">BED</div>

<div class="price">10000</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://media.istockphoto.com/photos/woman-turning-on-air-conditioner-picture-id1325708905" alt=""></div>

<div class="name">AIR CONDITIONER</div>

<div class="price">50000</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/5834/nature-grass-leaf-green.jpg?auto=compress&cs=tinysrgb&dpr=2&h=650&w=940" alt=""></div>

<div class="name">BOOK</div>

<div class="price">500</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/4339598/pexels-photo-4339598.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=650&w=940" alt=""></div>

<div class="name">BAG</div>

<div class="price">900</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://media.istockphoto.com/photos/hand-of-a-lady-selecting-yellow-colored-saree-in-a-shop-picture-id1301740530" alt=""></div>

<div class="name">SAREES</div>

<div class="price">2000</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

<div class="items">

<div class="img img1"><img src="https://images.pexels.com/photos/5816934/pexels-photo-5816934.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=650&w=940" alt=""></div>

<div class="name">WASHING MACHINE</div>

<div class="price">50000</div>

<div class="info">Lorem ipsum dolor sit amet consectetur, adipisicing elit.</div>

</div>

</div>

**Css code:**

{

margin: 0;

padding: 0;

box-sizing: border-box;

}

header {

display: flex;

justify-content: space-evenly;

align-items: center;

height: 60px;

width: 100%;

background: black;

}

.heading ul {

display: flex;

}

.logo a {

color: white;

transition-duration: 1s;

font-weight: 800;

}

.logo a:hover {

color: rgb(240, 197, 6);

transition-duration: 1s;

}

.heading ul li {

list-style: none;

}

.heading ul li a {

margin: 5px;

text-decoration: none;

color: black;

font-weight: 500;

position: relative;

color: white;

margin: 2px 14px;

font-size: 18px;

transition-duration: 1s;

}

.heading ul li a:active {

color: red;

}

.heading ul li a:hover {

color: rgb(243, 168, 7);

transition-duration: 1s;

}

.heading ul li a::before {

content: "";

height: 2px;

width: 0px;

position: absolute;

left: 0;

bottom: 0;

background-color: white;

transition-duration: 1s;

}

.heading ul li a:hover::before {

width: 100%;

transition-duration: 1s;

background-color: rgb(243, 168, 7);

}

#input {

height: 30px;

width: 300px;

text-decoration: none;

border: 0px;

padding: 5px;

}

.logo a {

color: white;

font-size: 35px;

font-weight: 500;

text-decoration: none;

}

ion-icon {

width: 30px;

height: 30px;

background-color: white;

color: black;

}

ion-icon:hover {

cursor: pointer;

}

.search a {

display: flex;

}

header a ion-icon {

position: relative;

right: 3px;

}

.img-slider img {

height: 720px;

width: 1080px;

}

@keyframes slide {

0% {

left: 0px;

}

15% {

left: 0px;

}

20% {

left: -1080px;

}

32% {

left: -1080px;

}

35% {

left: -2160px;

}

47% {

left: -2160px;

}

50% {

left: -3240px;

}

63% {

left: -3240px;

}

66% {

left: -4320px;

}

79% {

left: -4320px;

}

82% {

left: -5400px;

}

100% {

left: 0px;

}

}

.img-slider {

display: flex;

float: left;

position: relative;

width: 1080px;

height: 720px;

animation-name: slide;

animation-duration: 10s;

animation-iteration-count: infinite;

transition-duration: 2s;

}

.heading1 {

opacity: 0;

}

.search {

display: flex;

position: relative;

}

.section1 {

width: 1080px;

overflow: hidden;

justify-content: center;

align-items: center;

margin: 0px auto;

}

.section2 .container {

display: flex;

width: 100%;

height: max-content;

flex-wrap: wrap;

justify-content: center;

margin: 10px auto;

}

.section2 .container .items {

margin: 10px;

width: 200px;

height: 300px;

background-color: white;

border: 2.5px solid black;

border-radius: 12px;

}

.section2 .container .items .name {

text-align: center;

background-color: rgb(240, 197, 6);

height: 25px;

padding-top: 4px;

color: white;

margin: 0;

}

.section2 .container .items .price {

float: left;

padding-left: 10px;

display: block;

width: 100%;

color: rgb(255, 0, 0);

font-weight: 650;

}

.section2 .container .items .info {

padding-left: 10px;

color: rgb(243, 168, 7);

}

.section2 .container .items .img img {

width: 200px;

height: 200px;

margin: 0;

padding: 0;

border-radius: 12px;

transition-duration: 0.8s;

}

.section2 .container .items .img {

overflow: hidden;

margin: 0;

}

.section2 .container .items:hover .img img {

transform: scale(1.2);

transition-duration: 0.8s;

border-radius: 12px;

}

footer {

display: flex;

flex-direction: column;

background-color: black;

align-items: center;

color: white;

}

.footer1 {

display: flex;

flex-direction: column;

align-items: center;

color: white;

margin-top: 15px;

}

.social-media {

display: flex;

justify-content: center;

color: white;

flex-wrap: wrap;

}

.social-media a {

color: white;

margin: 20px;

border-radius: 5px;

margin-top: 10px;

color: white;

}

.social-media a ion-icon {

color: white;

background-color: black;

}

.social-media a:hover ion-icon {

color: red;

transform: translateY(5px);

}

.footer2 {

display: flex;

width: 100%;

justify-content: space-evenly;

align-items: center;

text-decoration: none;

flex-wrap: wrap;

}

.footer0 {

font-weight: 1200;

transition-duration: 1s;

}

.footer0:hover {

color: rgb(243, 168, 7);

}

.footer2 .heading {

font-weight: 900;

font-size: 18px;

}

.footer3 {

margin-top: 60px;

margin-bottom: 20px;

display: flex;

flex-wrap: wrap;

justify-content: center;

}

.footer2 .heading:hover {

color: rgb(243, 168, 7);

}

.footer2 .div:hover {

transform: scale(1.05);

}

.footer3 h4 {

margin: 0 10px;

}

.footer2 div {

margin: 10px;

}

.menu {

visibility: hidden;

}

.heading1 .ham:active {

color: red;

}

.items {

overflow: hidden;

}

.ham,

.close {

cursor: pointer;

}

@media screen and (max-width: 1250px) {

.heading ul li {

display: none;

}

.items {

transform: scale(0.9);

}

.img-slider img {

height: 60vw;

width: 80vw;

}

.ham:active {

color: red;

}

.menu {

display: flex;

flex-direction: column;

align-items: center;

}

.menu a ion-icon {

position: absolute;

}

@keyframes slide1 {

0% {

left: 0vw;

}

15% {

left: 0vw;

}

20% {

left: -80vw;

}

32% {

left: -80vw;

}

35% {

left: -160vw;

}

47% {

left: -160vw;

}

50% {

left: -240vw;

}

63% {

left: -240vw;

}

66% {

left: -320vw;

}

79% {

left: -320vw;

}

82% {

left: -400vw;

}

100% {

left: 0vw;

}

}

.menu ul {

display: flex;

flex-direction: column;

position: absolute;

width: 100vw;

height: 100vh;

background-color: black;

left: 0;

top: 0;

z-index: 11;

align-items: center;

justify-content: center;

opacity: 1;

}

.close {

z-index: 34;

color: white;

background-color: black;

}

.close:active {

color: red;

}

.menu ul li {

list-style: none;

margin: 20px;

border-top: 3px solid white;

width: 80%;

text-align: center;

padding-top: 10px;

}

.menu ul li a {

text-decoration: none;

padding-top: 10px;

color: white;

font-weight: 900;

}

.menu ul li a:hover {

color: rgb(240, 197, 6);

}

.img-slider {

display: flex;

float: left;

position: relative;

width: 80%;

height: 60%;

animation-name: slide1;

animation-duration: 10s;

animation-iteration-count: infinite;

transition-duration: 2s;

}

.section1 {

width: 80%;

overflow: hidden;

justify-content: center;

align-items: center;

margin: 0px auto;

}

.heading1 {

opacity: 1;

position: relative;

bottom: 8px;

}

.search a {

display: flex;

flex-wrap: nowrap;

}

.heading1 .ham {

background-color: black;

color: white;

}

#input {

width: 200px;

flex-shrink: 2;

}

header {

height: 150px;

}

}

@media screen and (max-width: 550px) {

.heading ul li {

display: none;

}

.heading1 {

opacity: 1;

bottom: 8px;

}

header {

height: 250px;

flex-wrap: wrap;

display: flex;

flex-direction: column;

}

#input {

width: 150px;

}

.close {

z-index: 34;

}

.search a {

display: flex;

flex-wrap: nowrap;

}

}

**Java script code:**

const close = document.querySelector(".close");

const open = document.querySelector(".ham");

const menu = document.querySelector(".menu");

close.addEventListener("click", () => {

menu.style.visibility = "hidden";

});

open.addEventListener("click", () => {

menu.style.visibility = "visible";

});

**Database:**

Datbase1:product details (IBM link for product details: { "id": "7eeb69405a1c1fee787bbe6ce927116f", "key": "7eeb69405a1c1fee787bbe6ce927116f", "value": { "rev": "2- f0122cf7f17152dbe0fead3247833748" } }) { "prod\_id":"lp001", "product\_name":"leather shoes", "description":"durability for timeless footwear ", "price":"RS:50", "stock":"full" } { "prod\_id":"lp002", "product\_name":"leather bags", "description":"adding a touch of sophistication to your outfit", "price":"RS:70", "stock":"full" } { "prod\_id":"lp004", "product\_name":"leather belts", description:"adding a polised look to your attair", price:"RS:40", stock:"full" } { "prod\_id":"lp005", "product\_name":"leather jackets", "description":"blend of classic and warmth", "price" :"RS:80", "stock":"full" } { "prod\_id":"lp006", "product\_name":"leather gloves", "description":"keeping your hands cozy", "price":"RS:25", "stock":"full" } { "prod\_id":"lp007", "product\_name":"leather wristwatch", "description":"making your watch stretchable", "price":"RS:20", "stock":"full" } { "prod\_id":"lp008", "product\_name":"leather hats", "description":"offers fashionable touch to you", "price":"RS:30", "stock":"full" }

Database2:

customer details(IBM link for customer details: { "id": "058a624389be77f19cf0e854a9ed05b0", "key": "058a624389be77f19cf0e854a9ed05b0", "value": { "rev": "1-944a1cf94daebcce92a5d811db164291" } }) { "0": { "cus id": "li001", "fname": "abi", "lname": "naya", "gender": "F", " email\_id": "abinaya06@gmail.com", "address": "no 4,keelaraja veedi ,thanjavur614625, ph-no:9863457890" }, "1": { "cus id": "li002", "fname": "abinesh", "lname": "bath", "gender": "M", " email\_id": "abiabinesh@gmail.com", "address": "no-436,maada veedi ,cumbum,theni-600875,phno:8882657890" }, "2": { "cus id": "li003", "fname": "lansuri", "lname": "", "gender": "F", " email\_id": "lansu2003@gmail.com", "address": "no-436,mgr nagar ,sollinganallur,chennai-600011,phno:8626987090" }, "3": { "cus id": "li004", "fname": "siva", "lname": "sakthi", "gender": "O", " email\_id": "sivasakthi10@gmail.com", "address": "no-424,muslim street,old town ,cuddalore-600005,phno:8751723120" }, "4": { "cus id": "li005", "fname": "zach", "lname": "hamin", "gender": "M", " email\_id": "riderzachh@gmail.com", "address": "no-7,north st ,thaiyur,kallakuruchi-610875,phno:8229317890" }, "\_id": "058a624389be77f19cf0e854a9ed05b0", "\_rev": "1- 944a1cf94daebcce92a5d811db164291" }

Database 3:

sales and transaction:(IBM link for sales& transaction: { "id": "0e2c158d1f8c6cbf3f1fa40285a6d5c5", "key": "0e2c158d1f8c6cbf3f1fa40285a6d5c5", "value": { "rev": "1-d3561814f3848fa3fbb2e73b84cb7ccf" } }) [{ "order id":"OCP001", "customer id":"li002", "product id":"lp002", "order date":"20/04/2023", "received by":"23/04/2023", "quantity":"1", "total":"RS:51" }, { "order id":"OCP002", "customer id":"li003", "product id":"lp001", "order date":"21/04/2023", "received by":"24/04/2023", "quantity":"1", "total":"RS:71" }, { "order id":"OCP003", "customer id":"li004", "product id":"lp004", "order date":"25/04/2023", "received by":"28/04/2023", "quantity":"1", "total":"RS:41" }, { "order id":"OCP004", "customer id":"li005", "product id":"lp003", "order date":"26/04/2023", "received by":"29/04/2023", "quantity":"2", "total":"RS:82" }, { "order id":"OCP005", "customer id":"li001", "product id":"lp007", "order date":"30/04/2023", "received by":"02/05/2023", "quantity":"1", "total":"RS:41" } ]

**API CODE:**

const express = require('express');

const app = express();

const port = process.env.PORT || 3000;

app.use(express.json());

// Import and use routes

const productsRoutes = require('./routes/products');

const usersRoutes = require('./routes/users');

app.use('/products', productsRoutes);

app.use('/users', usersRoutes);

app.listen(port, () => {

console.log(`Server is running on port ${port}`);

});

class Product {

constructor(id, name, price, description) {

this.id = id;

this.name = name;

this.price = price;

this.description = description;

}

}

module.exports = Product;

const Product = require('../models/Product');

const products = [];

// Get all products

const getAllProducts = (req, res) => {

res.json(products);

};

// Create a new product

const createProduct = (req, res) => {

const { name, price, description } = req.body;

const id = products.length + 1;

const product = new Product(id, name, price, description);

products.push(product);

res.status(201).json(product);

};

module.exports = {

getAllProducts,

createProduct,

};

const express = require('express');

const router = express.Router();

const productsController = require('../controllers/productsController');

// Get all products

router.get('/', productsController.getAllProducts);

// Create a new product

router.post('/', productsController.createProduct);

module.exports = router;

const users = [];

// Register a new user

const registerUser = (req, res) => {

const { username, email, password } = req.body;

const id = users.length + 1;

const user = { id, username, email };

users.push(user);

res.status(201).json(user);

};

module.exports = {

registerUser,

};

const express = require('express');

const router = express.Router();

const usersController = require('../controllers/usersController');

// Register a new user

router.post('/register', usersController.registerUser);

module.exports = router;

**Conclusion:**

this cloud-based e-commerce website represents the future of online retail, offering businesses the tools they need to succeed in the digital age. With its scalability, reliability, security, and flexibility, it empowers businesses to adapt to ever-changing market demands, while providing customers with a convenient, personalized, and efficient shopping experience. The cloud is the backbone of this innovative platform, ensuring it remains at the forefront of e-commerce technology.