VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JnanaSangama", Belgaum -590014, Karnataka.

FULL STACK WEB DEVELOPMENT & DEVOPS REPORT
on

TILES BAZAAR

Submitted by

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Under the Guidance of
Dr.Selva Kumar S
Assistant Professor, B.M.S.C.E.

in partial fulfillment for the award of the degree of
BACHELOR OF ENGINEERING
in
COMPUTER SCIENCE AND ENGINEERING

B.M.S. COLLEGE OF ENGINEERING
(Autonomous Institution under VTU)
BENGALURU-560019

Jun-2023 to Sep-2023

B. M. S. College of Engineering,

Bull Temple Road, Bangalore 560019

(Affiliated To Visvesvaraya Technological University, Belgaum)

Department of Computer Science and Engineering

CERTIFICATE

This is to certify that the project work entitled " **TILES BAZAAR** " carried out by **ARCHIT MEHROTRA (1BM21CS031), ARYAN RAUNIYAR (1BM21CS034), ASHISH SERU (1BM21CS035) AND CHANCHAL BHATI (1BM21CS042)** who are bonafide students of **B. M. S. College of Engineering.** It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visveswaraiah Technological University, Belgaum during the year 2022-2023. The project report has been approved as it satisfies the academic requirements in respect of **Full Stack Web development & DevOps (22CS4AEFWD)** project work prescribed for the said degree.

Signature of the Guide	Signature of the HOD
Dr.Selva Kumar S Assistant Professor, Dept. of CSE B.M.S.C.E., Bengaluru	Dr. Jyothi S Nayak Prof.& Head, Dept. of CSE B.M.S.C.E., Bengaluru

External Viva

Name of the Examiner	Signature with date
1._____	_____
2. _____	_____

B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

We, ARCHIT MEHROTRA (1BM21CS031), ARYAN RAUNIYAR (1BM21CS034), ASHISH SERU (1BM21CS035), CHANCHAL BHATI (1BM21CS042), students of 3rd Semester, B.E, Department of Computer Science and Engineering, B. M. S. College of Engineering, Bangalore, hereby declare that, this Full Stack Web development & DevOps project work entitled "TILES BAZAAR" has been carried out by us under the guidance of Dr.Selva Kumar S, Assistant Professor, Department of CSE, B. M. S. College of Engineering, Bangalore during the academic semester June 2023- September 2023.

We also declare that to the best of our knowledge and belief, the development reported here is not from part of any other report by any other students.

Signature

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Abstract

Welcome to TilesBazaar, the destination for discerning homeowners, designers, and builders seeking premium marble, granite, and ceramic tiles for their projects. TilesBazaar is an online platform that seamlessly combines style, convenience, and quality, empowering users to explore, select, and order a diverse range of exquisite tiling options to elevate their living spaces.

Our website offers a comprehensive catalog of marble, granite, and ceramic styles, carefully curated to cater to a variety of design preferences and functional needs. With a user-friendly interface, intuitive search filters, and stunning visuals, navigating through our collection is a delightful experience. From classic and timeless to contemporary and avant-garde, TilesBazaar ensures that every taste and aesthetic is catered to.

At TilesBazaar, we are committed to elevating your interior and exterior spaces with the timeless beauty and durability of marble, granite, and ceramic tiles. Whether you are embarking on a renovation project, building a new home, or working on a commercial endeavor, our website is your one-stop destination for premium tiling solutions.

1. Introduction

1.1. Background

The Tiles Bazaar website is created to provide building materials for houses and corporates which require Granite, Marble or Ceramic tiles. This is to make the process of ordering building materials online, easier for those who prefer ordering online. The website uses interactive web pages to improve the process.

1.2. The Problem Statement

There is a lack of online platforms providing marble , granite and ceramic tiles to retail customers. This makes it difficult for people who want to buy online themselves to decorate their homes, corporates etc. The TILES BAZAAR website aims to fill this gap by providing high-quality building materials.

1.3. The TILES BAZAAR Vision

The Tiles Bazaar website envisions to be a one-stop shop for building materials shopping of Marble, Granite and Ceramic tiles. It aims to provide a variety of building materials, including Granite, Marble, and Ceramic tiles. The website also aims to create a community of buyers where people can share their knowledge and experiences.

2. Software Requirement Specification(SRS)

2.1 Objectives

- To design a user-friendly interface tailored for buyers.
- To ensure secure data storage.
- To implement a LMS .
- To automate deployment and achieve continuous integration and continuous delivery.

2.2 Requirement

Technologies and Tools Used:

- Frontend: HTMl, CSS, JavaScript.
- Backend: PhP framework.
- Database: Sql.
- DevOps Tools: Docker for containerization, GitHub for version control, GitHub Actions for CI/CD, and Docker Hub for deployment.

Hardware Configuration:

Processor: Core i7, 2.5GHz

Hard Disk: 500 GB RAM: 8GB

Resolution: 480 X 800

3. System Design

3.1. Frontend Design and Flow

Home Page:

- Layout: Top navigation bar containing logo and user profile/login icon.
  The main area displays features an overview of Tiles Bazaar.

- Features:
  - A detailed and easily understandable homepage.
  - Provides an overview of how Tiles Bazaar helps an individual.

User Authentication:

- Sign-up using email. .

AboutUs page:

- To provide the website admin details about users.

- The user gets to better know the website, its vision and the team behind. .

3.2. Database Schema:

- **Users Collection:**
    - Fields: UserID, Email, Password , Name, Address, Phone,
    - Primary key: Email

3.3. DevOps Flow

To ensure a smooth development-to-deployment flow, a DevOps pipeline is set up:

Version Control: GitHub repositories for frontend and backend codebases.

Continuous Integration (CI):

- Automated tests using GitHub Actions.
- Linting checks to maintain code quality.

Continuous Deployment (CD):

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3.3. DevOps Flow

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Continuous Integration (CI):

- Automated tests using GitHub Actions.
- Linting checks to maintain code quality.

Continuous Deployment (CD):

- Upon successful CI, the code is automatically containerized using Docker.
- The containers are then pushed to Docker Hub.

4. Implementation Details

4.1. Frontend:

- Used HTML to create layout of webpages.
- Used CSS to make the web pages more appealing to learners.
- Used JavaScript to build functionalities and to make pages responsive.

4.2.Backend:

- Used SQL to store data.
- Used Php framework to build the backend.

5. DevOps Implementation

5.1. Containerization with Docker:

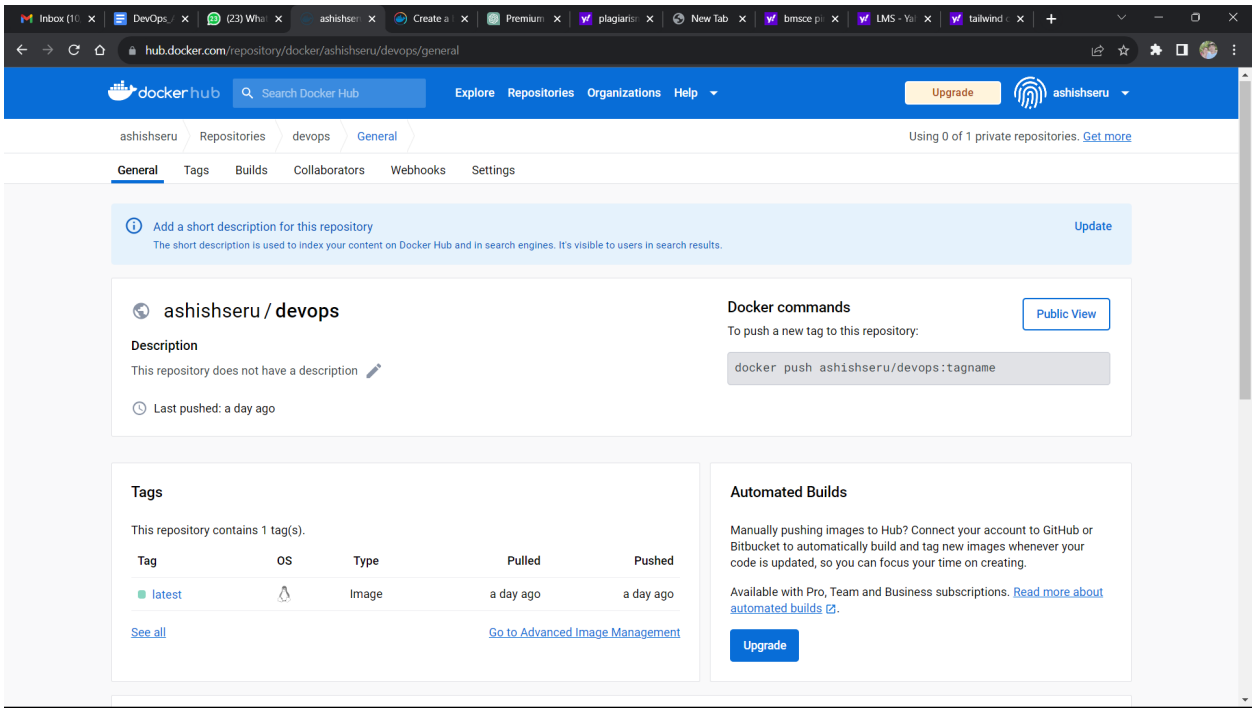
- A docker image contains all dependencies and packages needed to launch the website, this removes the need for the user to install packages
- A Dockerfile defines the image and helps create a container. .
- After pushing the image to Docker Hub, we can fork the image from any system using Docker desktop and run the container to launch the website.
- We then make the terminal of the container run the command.

5.2. CI/CD with GitHub Actions:

- We created a workflow using GitHub actions. A .yml file is responsible for defining the automatic logic for our GitHub repository.
- We use triggers to make it such that every time there is a push to the master branch in the repository, the workflow begins to run.
- The steps which are taken are: setup job, checkout code, install dependencies, run unit tests, build and push docker image to Docker Hub.
    - Checkout code fetches source code files and makes them available for subsequent steps.
    - Install dependencies installs the required modules for the project to run.
    - Run unit tests run tests to ensure the framework is operational.
    - Build docker image transforms the updated code to a docker image.
    - Push to dockerhub adds the created docker image to dockerhub using the entered dockerhub credentials.

Workflow:

Docker image:



5.3. Deployment:

- Pull the image from Docker Hub. Run the container. Then host the website.

- To run container: docker run -d -p 3000:3000 ashishseru/devops

- This command runs the docker container and maps the port 3000 of the system with that of the container to allow us to host the website and connect to the database.

6. Conclusion & Future Enhancements

Add more features and functionality: This could include things like adding a mobile app, adding a forum for users to give , or adding a way for users to track their orders.

Improve the user experience: This could include things like making the website more visually appealing, making the navigation easier, or making the content more engaging.

Partner with other organizations: This could help to increase the visibility and credibility of the website, and it could also help to attract new users.

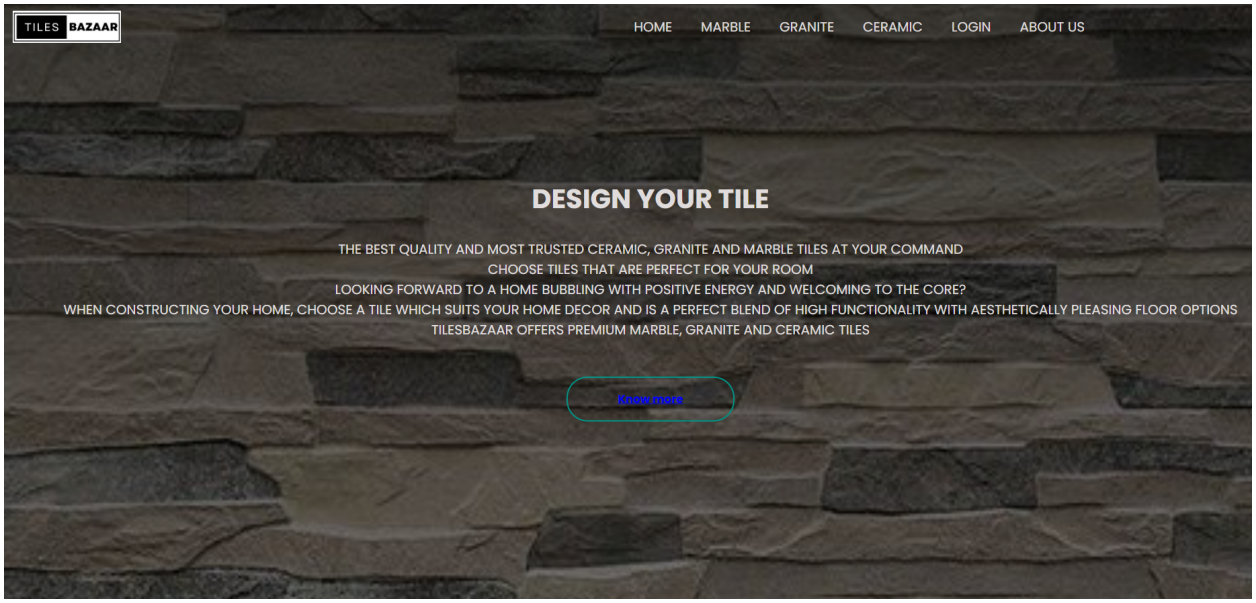
Generate revenue: This could be done through things like advertising, selling products, or charging for access to certain features.

References:

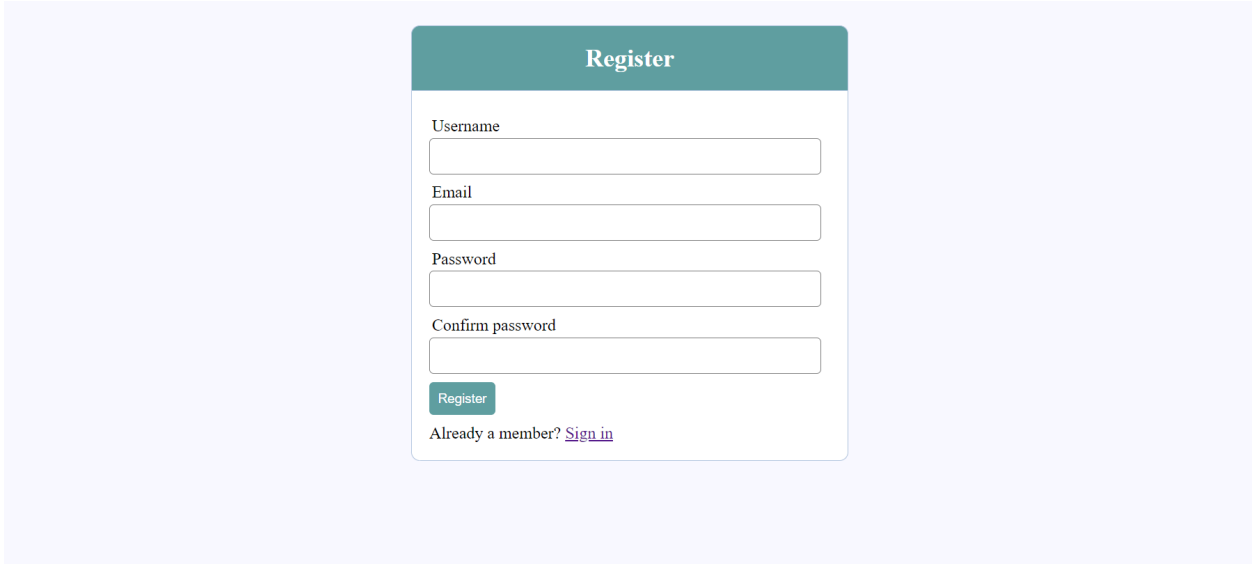
- **Php Documentation: https://www.w3schools.com/php/ (July 3 - August 12th)**
- **Sql Docs: https://www.w3schools.com/sql/ (April-May)**
- **Docker Documentation: https://docs.docker.com/ (August 28- September 4)**
- **Youtube : https://www.youtube.com/watch?v=LQjaJINkQXY&pp=ygUVZG9ja2VyIGltYWdlIGNyZWF0aW9u (September 4- September 7)**

Appendices

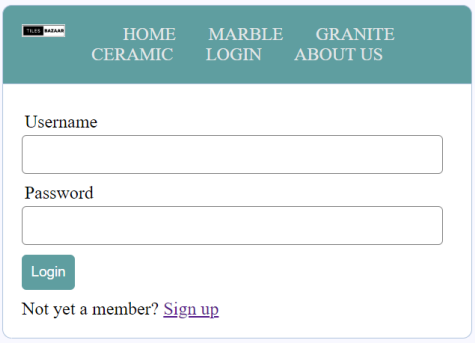
Home page



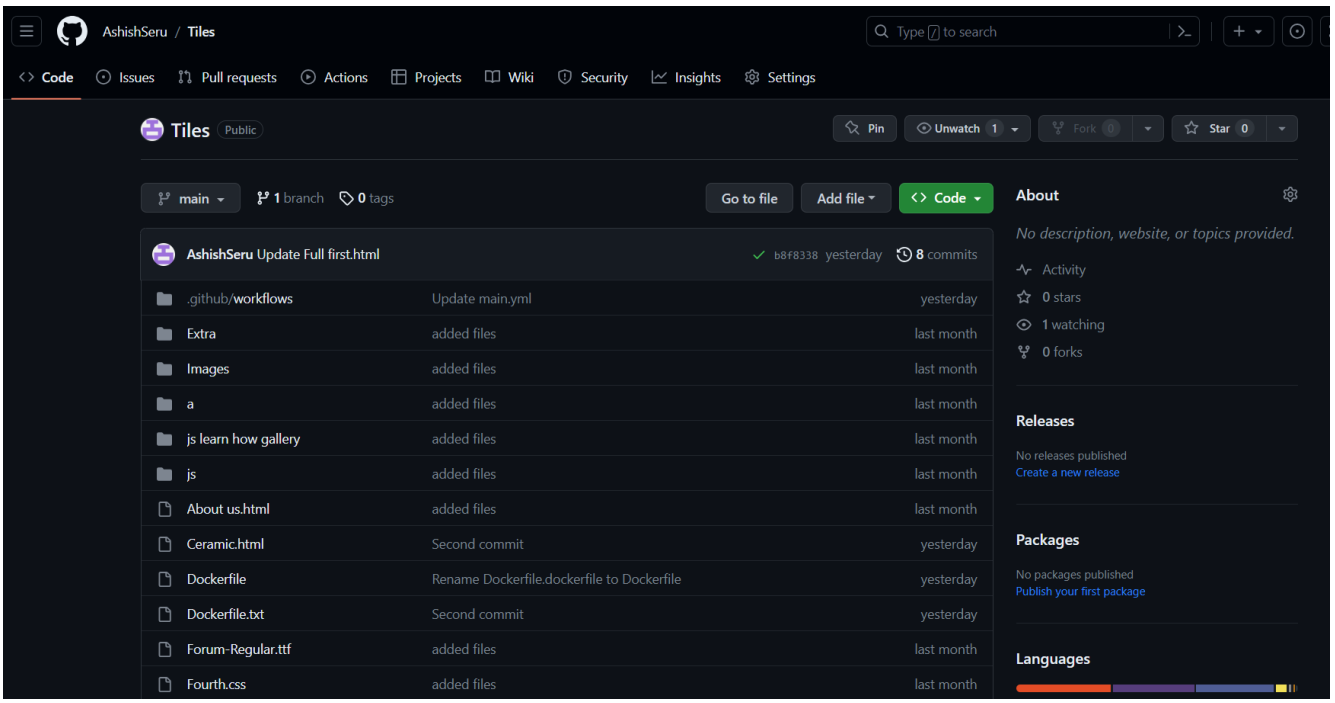
Registration page:



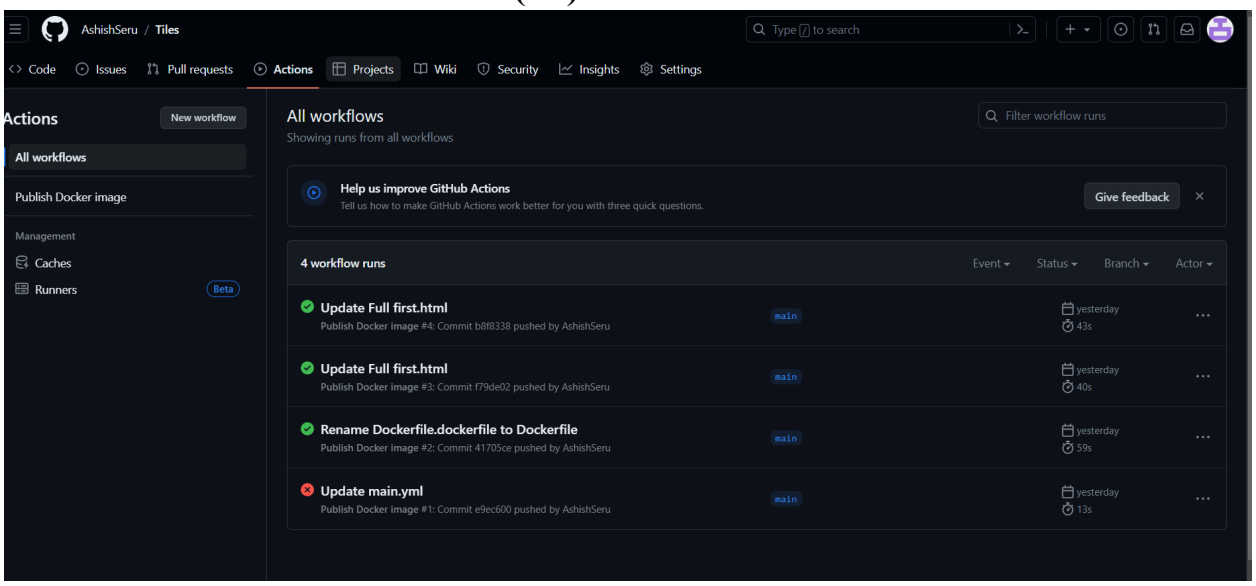
Login page:


HOME
MARBLE
GRANITE
CERAMIC
LOGIN
ABOUT US
Username
Password
Login
Not yet a member? Sign up

Version Control (Git):



GitHub actions workflow (CI):



DockerHub Image (CD):