SWE573 - Software Development Practice

Project Report

Project Name: **KeepItSocial**

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Git Repository

https://github.com/samedtorunn/SWE573_Software-Development-Practice_Fall22

Git Tag Version: v.0.9.1

https://github.com/samedtorunn/SWE573_Software-Development-Practice_Fall22/releases/tag/v.0.9.1

Deployment URI

http://52.91.107.189:8000/

HONOR CODE

Related to the submission of all the project deliverables for the Swe573 2022 Fall semester project reported in this report, I, Samed Torun declare that:

- I am a student in the Software Engineering MS program at Bogazici University and am registered for Swe573 course during the 2022 Fall semester.
- All the material that I am submitting related to my project (including but not limited to the project repository, the final project report, and supplementary documents) have been exclusively prepared by myself.
- I have prepared this material individually without the assistance of anyone else with the exception of permitted peer assistance which I have explicitly disclosed in this report.

Samed Torun

System Login Information

A user login in the deployed website:

Username**:**	**ursulaguin**
Password**:**	**123123**

Admin User in registered database*

http://52.91.107.189:8000/admin/

Username**:**	**sam1**
Password**:**	**123**

Note: This superuser is deleted in the deployed website while testing. It can be created again via `python3 manage.py createsuperuser` if needed.

1) Project Overview

Keepitsocial is a social media platform that allows users to post, like, and comment on content, as well as follow each other and join groups centered around specific topics. Keepitsocial provides a platform where users can create and save content from other websites, such as Twitter, Facebook, and Instagram, on their profile.

2) Software Requirements Specification

a) Introduction

This document's goal is to give a thorough and understandable explanation of the requirements for the Keepitsocial. All parties involved in the creation and management of the project can use this document as a reference. This document will serve as a foundation for assessing the accuracy and completeness of the finished project. This document's main objective is to make sure that the Keepitsocial project is designed and delivered in a consistent, well-defined manner that satisfies the needs and expectations of all stakeholders.

i. Scope of the Project

The purpose of Keepitsocial is to provide a platform where users can post and like content, follow each other, and join groups to interact around particular topics. The platform allows users to save content from various social media platforms and websites, and allows users to create and participate in groups focused on specific topics.

ii. Definitions and Abbreviations

- **Post (or K.I.S.):** This application has items called posts. A post is basically a collection of contents. These collections can include the following parts.
    - **Post Title:** The title of the shared post content.
    - **Link**: A URL that represents the post details.
    - **Body Text (or Caption):** The written part by the user while creating a post.
- **Preview Image:** A display image that represents the content in the kept URL.
- **Feed:** The scrollable part of the page, which displays the posts.
- **Space:** A specific feed that has been created by a user which can be subscribed by other users.
- **Visitor:** People who are not logged in to the website, but visited the website.
- **User**: People who are already signed up to the website.
- **Space Admin:** People who are allowed to delete posts from a space. These are also creators of a space.
- **Admin (or Superuser):** Person or people who have all authorization to use admin panel and make changes on the website, database (excluding passwords) or any other part of the system.
- **Follow**: An action that a user can take to subscribe to the content of another user.
- **Comment**: An action to share a comment for a post.
- **Like**: An action of liking a post. Saves the post to profile.

iii. References

The following are the references used in the development of Keepitsocial:

- Django documentation - https://docs.djangoproject.com/
- Python documentation - https://docs.python.org/3/
- SQLite documentation - https://www.sqlite.org/docs.html
- Bootstrap documentation - https://getbootstrap.com/docs/4.5/getting-started/introduction/
- AWS EC2 documentation - https://aws.amazon.com/ec2/documentation/

- Docker documentation - https://docs.docker.com/
- GitHub documentation - https://docs.github.com/

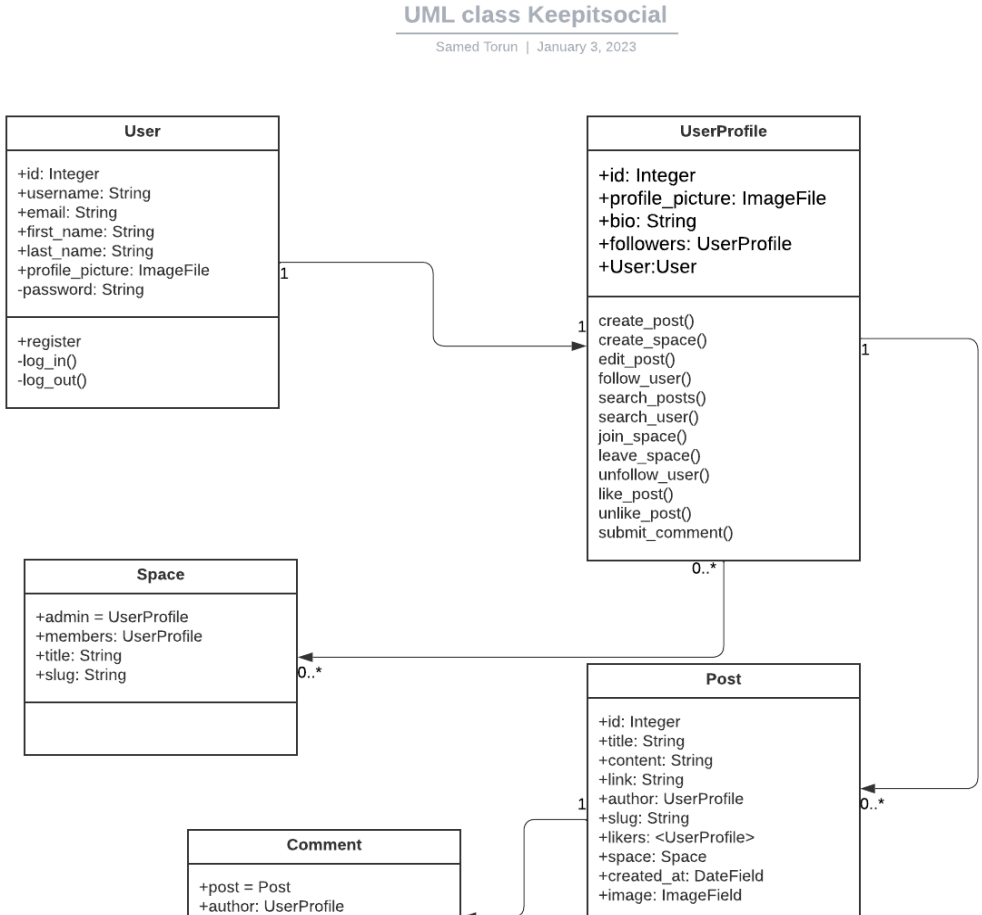
These references were used for guidance on the development of the various components of the Keepitsocial platform, including the development of the web application using Django, the use of database, the deployment on AWS EC2 and the use of Docker containers, and version control with GitHub.

iv. Overview

The purpose of this document is to provide a comprehensive overview of the Keepitsocial platform and to outline the software requirements for its development. This document aims to clearly define the functionality and requirements of Keepitsocial, including its purpose, scope, and user stories. The development of Keepitsocial will be done using either Python (Django). This document will serve as a reference for the development team, stakeholders, and users throughout the project.

b) Overall Description

i. UML Class Diagram



ii. Product Functions

The main functions of the Keepitsocial are as follows:

- **User registration and login:** Users can create an account on Keepitsocial by providing their email address, username, and password. They can then log in to their account using their username and password.
- **Content sharing:** Users can share various types of content on Keepitsocial, including text, images, and links to external websites.
- **Following:** Users can follow other users and therefore, their posts. This allows them to see updates from the users they follow in their feed.
- **Liking:** Users can like other user's posts. This way they can keep these posts in their own profiles to look back whenever needed.
- **Commenting:** Users can leave comments on other users' posts.
- **Space creation and management:** Users can create spaces on Keepitsocial, which are dedicated spaces for discussion and content sharing around a specific topic.
- **Searching:** Users can both search for posts and other users to discover and socialize.
- **Editing Post:** Users can edit their posts if they want to.

iii. User Class and Characteristics

For Keepitsocial, the user class can include individuals who want to share and discover content online, connect with others, and participate in online communities. The characteristics of these users may include a desire for social interaction, the ability to use a computer or mobile device to access the internet, and an interest in using social media platforms. Other potential user

characteristics could include a desire for personalization and customization of their online experience, and the ability to discover new content and communities through social media.

iv. Assumptions and Dependencies

Assumptions;

- The system will be used on computers or devices with sufficient hardware and software resources to support its operation.
- The system will be used in an environment with a stable and reliable internet connection.
- The system will be used by individuals with a basic level of computer literacy.

Dependencies;

- Django: The project is built using the Django web framework, so it depends on Django to provide the necessary functionality for the application.
- Python: Django and the rest of the project are written in Python, so the project depends on Python being installed and available on the system.
- Bootstrap: The project uses Bootstrap for styling and layout, so it depends on Bootstrap being included in the project's static files and the Bootstrap's features available online.
- AWS EC2: Keepitsocial is deployed on AWS EC2, it will depend on the availability of an EC2 instance and the necessary permissions to access and use it.
- Docker: The project is deployed using Docker, it will depend on Docker being installed and available on the system.

c) Functional Requirements

- Users should be able to create an account with their username, full name, profile picture and password.

- Users should be able to log in to the system using their unique credentials.
- Users should be able to create posts, which should include title and link, and may include images.
- Users should be able to leave comments on other users' posts.
- Users should be able to like posts.
- Users should be able to follow other users.
- Users should be able to view the posts of the users they follow in their home feed.
- Users should be able to create and manage spaces, which may have specific themes or topics.
- Users should be able to search for specific posts or users using keywords or tags.
- Users should have a personal profile page that displays their posts and information about themselves.
- Users should see the posts that they like in their profiles.
- Users should see the posts in the home feed chronologically.
- Users should be able to edit the posts that are created by themselves.
- Users should be able to join spaces.
- Users should be able to see the posts in spaces.
- Users should see the posts from the spaces they joined, in their home feed.
- Users should see the posts they created in their home feed.
- Users should be able to see how many likes a post has.
- Users should be able to see the comments below the posts.
- Users should be able to visit each others’ profiles.
- Admin should be able to delete existing users.
- Admin should be able to create new users.
- Posts should have unique IDs to identify, during creation of a post.
- Users should have unique IDs to identify, during registration.

d) Non-Functional Requirements

- Performance:
    - The system shall be online and available to use 24/7.

    - The system shall have a responsive design.
- Reliability:
    - When there is a new account, the system shall check existing usernames to prevent duplicate users.
- Availability:
    - The system shall be online and available to use 24/7.
    - The system shall be available in English.
- Maintainability:
    - When a user clicks to "Delete Account" on his/her user settings page, the system pops up a notification to ask if the user is sure with his/her decision.*
    - The system shall include a F.A.Q. page that can be reached via one click from every page of the website.*

- Security:
    - The system shall encrypt the user password.
    - The system shall not let the admin see the user passwords in any possible way.
    - When there is a new account, the system shall check existing usernames and prevent duplicate users.
- Compatibility:
    - The system should be developed using Python (Django) or Java (Spring).
    - The system should use MySQL, PostgreSQL or MongoDB as the database.*

**Note: The requirements that are marked with an asterisk (*) are not satisfied in the project.*

3) System Status and Deployment

a) Deployment Status

The project is dockerized and deployed.

Project URL: http://52.91.107.189:8000

b) System Manual

- Deployment

To deploy the Keepitsocial platform on an EC2 Ubuntu server, follow these steps:

1. Set up a new EC2 instance using the Ubuntu AMI.
2. Connect to the instance using SSH.
3. Install Docker on the instance using the following command
   `sudo apt-get update && sudo apt-get install docker.io`
4. Clone the Keepitsocial repository from GitHub using the following command:
   `sudo git clone https://github.com/samedtorunn/SWE573_Software-Development-Practice_Fall22.git`
5. Navigate to the cloned repository using the cd command.
6. Build the Docker image using the following command
   `docker build -t keepitsocial .`
7. Run the Docker container using the following command:
   `docker run -p 8000:8000 keepitsocial`
8. Open a web browser and go to `http://<insert your server's public ip address here>:8000` to access the Keepitsocial platform.

Note: You may need to add the EC2 instance's public IP to the ALLOWED_HOSTS list in the project's settings file.

4) User Manual

- **Accessing the website**

  To access the website, open a web browser (such as Google Chrome or Mozilla Firefox) and enter the URL (http://52.91.107.189:8000) in the address bar.

- **Signing up**

To sign up for an account, click on the "Register" button on the middle of the homepage. Fill out the form with your desired username, email, profile picture and password. Click on the "Sign up" button to complete the process.

- **Logging in**

  To log in to your account, click on the "Log in" button on the top left corner or middle of the homepage. Enter your username and password, and click on the "Log in" button to access your account.

- **Creating a post**

  To create a new post, click on the "+POST" button on the top right corner of the homepage. Fill out the form with the desired title, content, link and image (optional). Click on the "Create post" button to publish your post.

- **Commenting on a post**

  To comment on a post, write your comment in the text field below the post and click on the "Comment" button below the post.

- **Liking a post**

  To like a post, click on the "👍" button below the post. The button will be filled, indicating that you have liked the post.

- **Following other users**

  To follow another user, go to their profile page by clicking on their username or “View Profile” button in the “Discover People” page. Click on the "Follow" button to start following that user.

- **Creating a space**

  To create a group, click on the "Create Space" button on the top of the “Discover Spaces” page. Enter the desired group name and a slug and click on the "Create Space" button to create the space.

- **Joining a space**

  To join a space, click on the “Join Space” button on a space card in “Discover Spaces” page. After joining, you can see the posts of that space in your home feed.

- **Leaving a space**

  To leave a space, click on the “Leave Space” button on a space card in “Discover Spaces” page. After leaving, you do not see the posts of that space in your home feed.

- **Searching for posts**

  Write your query on the search bar on the top right corner of the page. When you click the “Search” button, related posts for the query will be displayed.

- **Searching for people**

  Write your query on the search bar on the top right corner of the page when you are in “Discover People” page. When you click the “Search” button, related users for the query will be displayed.

- **Editing a post**

  Users can only edit the posts that they created. Click on the “Edit” button on the top right corner of the related post. Fill in the necessary fields you want to edit and click on “Save Changes” button.

5) Project Repository & Tutorial Video Link

Project repository of Keepitsocial can be reached below:
https://github.com/samedtorunn/SWE573_Software-Development-Practice_Fall22

A general presentation video about the project Keepitsocial can be found below:
https://drive.google.com/file/d/1-SHfYxOYdjlvXTv0WoUw-noE32lTQvSp/view?usp=share_link