Abstract

This project is Time Tracking App. It is a Single Page Application (SPA). The application is web based and persists its data to a local storage. The application is tailored for individuals with a challenge to time track their activities effectively or for individuals with a challenge of effectively accounting to their time and how they have spent it. The app enables user personalization by permitting them to stipulate bespoke time management inclinations and deadlines. This feature is also persisted in the browser local storage as user's preference data. Besides, the application offers the users with an interactive user interface that is simple to use and navigate. On-boarding is seamless for no user training is required for users to grasp the functionalities entailed in the system. This abstract encapsulates the core of the project, accentuating its innovative strategy toward fostering a harmonized lifestyle.

Introduction

Time is key in every aspect of life. Good time-management is a skill that many people don't possess. The concern is not on the amount of time available to a person. It is how well a person can manage that time to an optimum productivity (Wolters et al., 2021). Time management app is an SPA that is support by most browser. The app is tailored for good time tracking and accountability. The site offers the functionality to manage both leisure and work times. This is all determined by user's preference that they set on the application. The user interface is minimal and easy to interact with. The user interaction is as well straight forward. This makes it easier for users to use the system without necessary having to be trained. The data is persisted in the application in real-time and can be retrieved at any given time. Data persistent can be done several ways. These include us of databases, local storage or files. For this application data is persisted in a local storage. Files are good for persisting small chunks of data. They are also fast in data retrieval (Memaripour et al., 2020). This make the application very fast in terms of performance. The sections below outline the methodology, the use cases, the sprints, the UML models, the app prototype and the challenges faced during development and implementation.

Software Development Lifecycle

The Software Development Lifecycle (SDLC) is a systematic framework for defining the stages of software development, from conception to deployment and maintenance. It includes several steps, including requirement gathering, planning, design, development, testing, deployment, and maintenance. This project used the SDLC process to guarantee a methodical and iterative approach to building the Time Tracking App, with the goal of providing a high-quality and user-friendly application that satisfies the demands of the target audience.

The project's planning phase, lasting a week, laid the groundwork for further development. During this phase, a brainstorming session was held to examine various ideas and concepts about time monitoring and management. Topics such as the application's genre, subject, and essential features were taken into account, and different sources of inspiration were located and thoroughly evaluated for relevancy and appeal. Research was conducted to analyse various sources, with the goal of identifying significant aspects and characteristics that may be included into the programme. Notes were collected to capture intriguing insights and suggestions for the project's analysis and design phase. After deciding on the major aspects and features to include in the application, an attempt was made to estimate the time necessary to construct each one. A basic sprint plan was built, with essential features aligned with certain sprints to provide a controlled and organised development process.

After planning, the requirements step involved creating comprehensive user stories based on identified features and functions. These user stories were linked with the sprint plans and used to define the scope and goals of each sprint. A product backlog was built to help prioritise and manage user stories.
The design process involves creating wireframes, mockups, and prototypes to visualise the application's user interface and workflow, based on the requirements. Feedback from potential users was gathered and incorporated into the design to ensure that the application was intuitive, user-friendly, and met user expectations. After finalising the design, the development phase focuses on developing the application's frontend and backend components. Frontend technologies like as HTML, CSS, and JavaScript were utilised to build a responsive and interactive user interface, while backend technologies were used to store, retrieve, and manage user preferences.

Project Vision

In a world when time is of the importance and good time management is critical for personal and professional success, our Time Tracking App seeks to help people take control of their time and reach peak productivity. The program aims to revolutionise how people monitor, manage, and spend their time by delivering a user-friendly and personalised solution, encouraging a harmonious lifestyle in which individuals can smoothly mix work, leisure, and personal hobbies. With its unique features, user-friendly design, and real-time data permanence, the Time Tracking App strives to be the go-to solution for anyone looking to improve their time management skills, increase their productivity, and live a more organised and meaningful lifestyle. Whether you're a busy professional, a student juggling multiple responsibilities, or someone looking to make the most of your time. It provides a comprehensive and customisable platform to help you stay on top of your tasks, prioritise your activities, and make

informed decisions about how you spend your time. Embrace the power of efficient time management and begin on a road to a more productive and balanced living with our Time Tracking App, your ideal companion for mastering time management and accomplishing your objectives.

Background

In today's fast-paced environment, efficient time management is critical for balancing personal and professional responsibilities and increasing productivity (Majini & Bella, 2023). Despite the abundance of time management tools available, many people fail to track and use their time efficiently, resulting in stress and lower productivity.

The Time Tracking App project seeks to address this issue by offering a user-friendly and personalised platform that enables people to take control of their time, prioritise tasks, and achieve their objectives. Using a Single Page Application (SPA) and local storage for data persistence, the app provides a smooth and accessible user experience from any location (ĆWIK, 2021).

Legal and ethical considerations:
- Copyright Compliance: Ensure that any items utilised are either copyright-free or appropriately licenced to prevent infringement (FasterCapital, 2024).
- Data Protection: Implementing strong data security procedures to protect users' personal information and privacy (Cloudian, 2023).
- Web Accessibility: Designing the interface with accessibility in mind in accordance with the UK Equality Act of 2010 (Bureau of Internet Accessibility, 2022).

By addressing these concerns and providing a comprehensive and customisable platform, the Time Tracking App hopes to revolutionise time management, fostering a balanced lifestyle and contributing to personal and professional success.

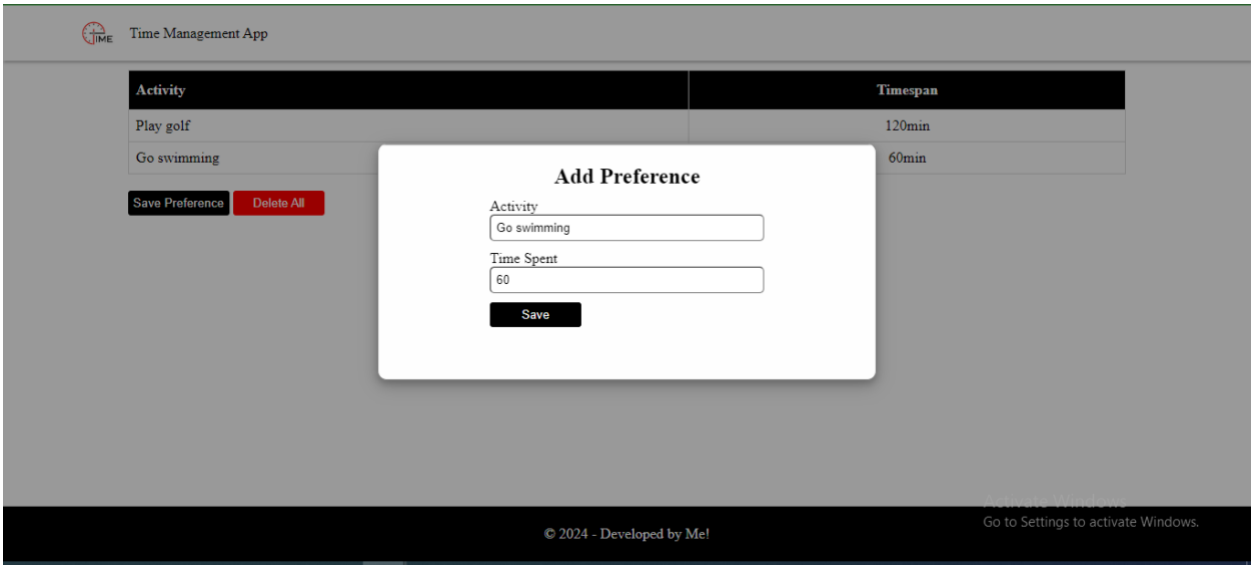
Methodology

The application was developed using Software Development Lifecycle (SDLC). This methodology ensures an iterative process to ensure correct execution of processes from the project's inception to deployment (synopsys, n.d.). The processes entail requirement gathering, planning, user interface design, application prototyping, development, and testing deployment. SDLC ensures that rigorous testing and quality assurance procedures are implemented or executed at each stage (Ghosh, 2023). This results to a high-quality software. Besides, it is easy to identify and attend to risks as soon as they have been identified. This mitigates on the project risks. The end goal is focused on the customer's satisfaction. The customers still have the chance to provide feedback while using the product. This allows for the application to be free from bugs. The app will also stay relevant to customers' requirements. SDLC also allows for smooth continuous deployment should there be a change in the app based on the users' feedback (Ghosh, 2023).

App Design and Functionality

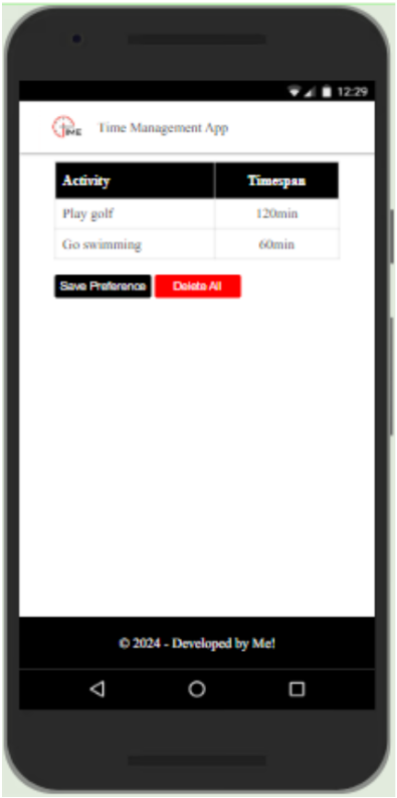
Below is the app design for the system.

Above is the landing page of the app. This page entails a list of all activities and their timespan as persisted within the browser.



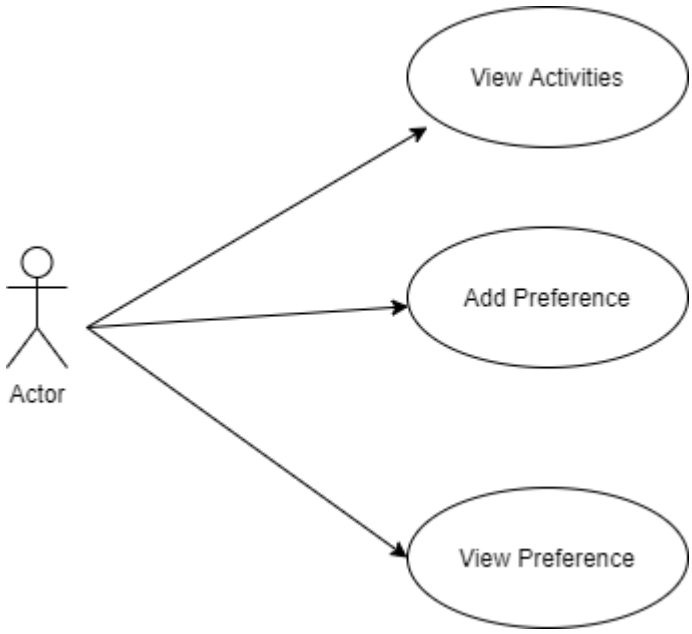
The above shows the functionality for adding new preference or activity into the app.

Below are the mobile versions for the application. The system is responsive for different screens. Thus, it allows for the same user experience across multiple screens and devices.

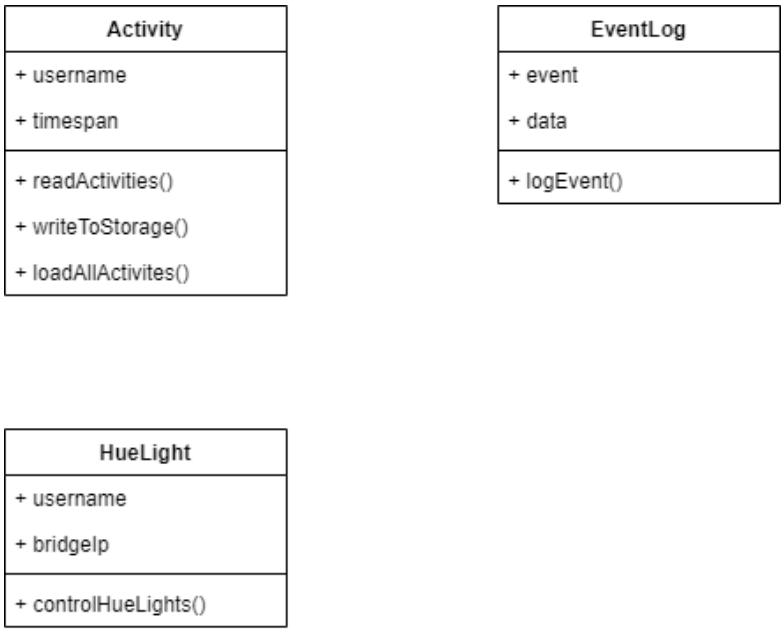


Use case

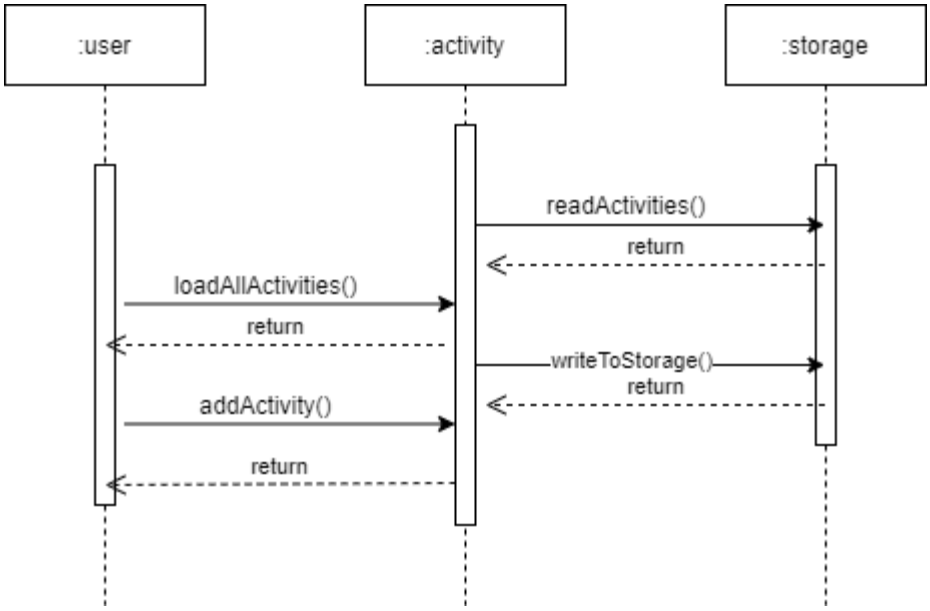
The user has the ability to view all the available activities as well as add new ones to the system



UML Diagram


Activity
+ username
+ timespan
+ readActivities()
+ writeToStorage()
+ loadAllActivites()
EventLog
+ event
+ data
+ logEvent()
HueLight
+ username
+ bridgeIp
+ controlHueLights()

Interaction Diagram



Sprint

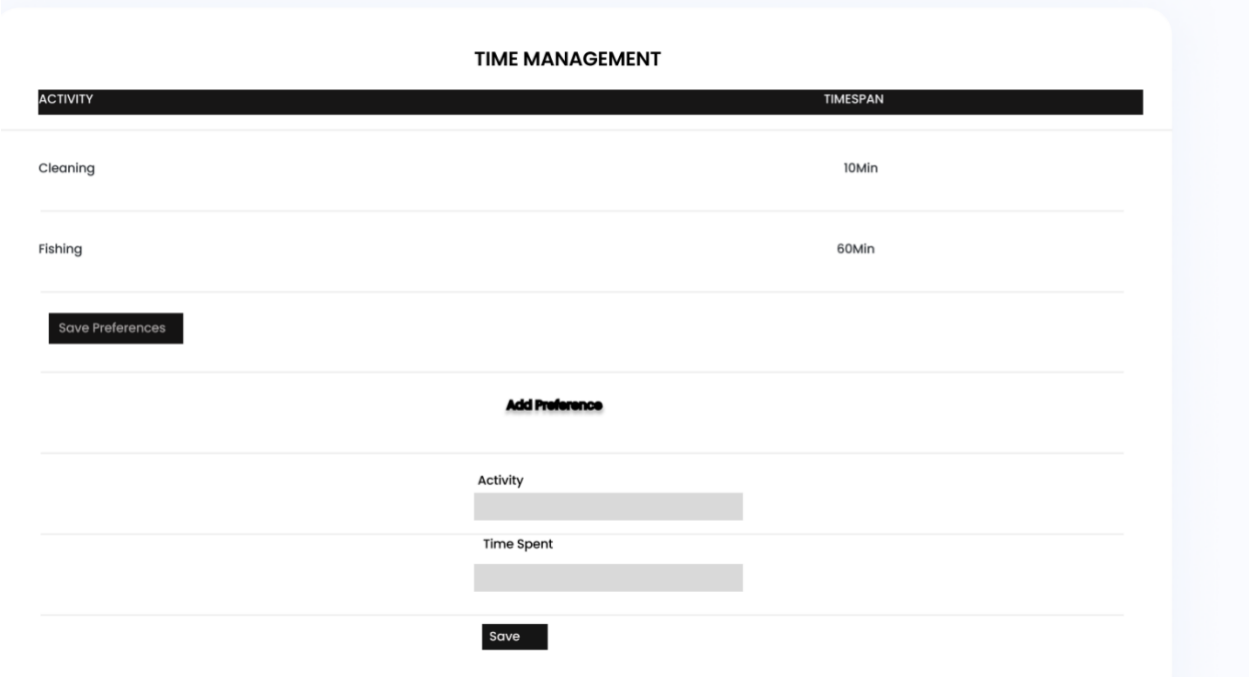
Below are the sprints from Nov, 2023 – Apr, 2024. Each month has two sprints. A sprints runs for two weeks.

Activity	Nov 6th – 17th	Nov 20th – 1st	Dec 4th – 15th	Dec 18th – 29th	Jan 1st – 12th	Jan 15th – 26th	Jan 29th – Feb 9th	Feb 12th – 23rd	Feb 26th – Mar 8th	Mar 11th – 22nd	Mar 25th – Apr 5th	Apr 8th – 19th
Literature survey												
Identifying research gaps												
Literature chapter drafting												
System design document creation												
System design UI/UX												
System prototyping												
System development												
System testing												
System bug fixing												
System regression testing												
System deployment												
Presentation and demo												

Sitemap

- Home
  - Dashboard
  - Activities
    - View All Activities
    - Add New Activity
  - Preferences
    - Set Time Management Preferences
    - Set Deadlines

Wireframes



Challenges

1- User Adoption. Despite the app having excellent designs and interface, getting users to use the app might be challenging. Users may already have their preferred methods of tracking time or may resist changing their habits (koombea, 2020).
2- Data issue and privacy. As the application persists data locally in the browser's storage, ensuring data privacy and security is crucial. Users may be concerned about their sensitive time-tracking data being stored on their local machine and may require reassurance regarding data encryption and protection against unauthorized access (Team, 2023).
3- Despite the app being simplistic and having good designs, some users will still need to be trained during the onboarding process. This can be facilitated by provision of comprehensive user guides and step by step tutorials on how to use the time management app. This process is time consuming and costly.
4- Maintenance. As the app evolves over time and user need change, maintaining the codebase and addressing technical debt becomes increasingly important. Proper documentation, modular code architecture, and adherence to coding best practice can help mitigate challenges associated with long-time maintenance (MoldStud, 2024).
5- Competition. The time-tracking app market is competitive, with several established players offering similar functionalities. Standing out in the crowded market and attracting users to the app may require innovative features, effective marketing strategies, and targeted user outreach efforts.

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