WorkWell

An application for improved productivity of software engineers

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ABSTRACT

Software engineers that procrastinate need a way to motivate themselves to complete tasks more efficiently otherwise they feel stressed and guilty. It is primarily due to human nature, which is predisposed to delaying tasks until constantly reminded. Procrastination can lead to missed deadlines, burnout, decreased productivity, and loss of credibility.

On the other hand, overworking software engineers often forget to take regular breaks, maintain a work-life balance and take care of their physical and mental health.

WorkWell is an application that is designed specially to solve this problem where it caters to two types of people, the people who procrastinate and the people who overwork, and solves both their problems by making them efficient and productive.

Workwell would send task reminders to users periodically which would lead to increased productivity, accountability, and better coordination among peers. This would be done in such a way that the user would set reminders for tasks, and deadlines and will receive notifications whenever the user schedules to receive them.

WorkWell will prompt the user to take regular breaks from work which will lead to better work-life balance and reduce burnout in the longer run. Engineers generally while working tend to forget to take breaks and get exhausted working long hours. This application will prevent this by sending out periodic break reminders to the user.

WorkWell will allow users to take care of their physical health and well-being by posting ergonomic images periodically and asking the user to perform ergonomic tasks like moving their head around, rotating their hands, blinking their eyes and setting your posture.

Overall, WorkWell would be a web-based application that would be primarily a reminder-based productivity app that aims to enhance the productivity of software engineers in day-to-day life.

CCS CONCEPTS

CCS→ Software and its engineering→ Software creation and management → Designing software → Software design engineering.

KEYWORDS

User Interface (UI), Notifications, Breaks, Ergonomics, Productivity.

1 Introduction

The field of software engineering is challenging and sophisticated requiring great concentration and attention to detail. Since frequent notifications and interruptions disturb workflow and reduce productivity, distractions are an unavoidable feature of the modern workplace. As a result, concentration apps have become a well-liked choice for software professionals looking to boost productivity. WorkWell application helps users simplify processes and boost productivity. It helps users in achieving goals by assisting them in better time management, task prioritization, team collaboration, and maintaining ergonomics. It helps the user to be more organized, focused, and productive and helps users avoid procrastination and be more focused.

For software professionals who need to manage their time and keep on top of their tasks, task reminders can be immensely helpful. WorkWell application's task reminders provide various benefits to the user as it would help them customize task reminders based on their deadlines which would help them in prioritizing the tasks based on their importance and deadlines.

Taking a break is important for all software engineers, breaks tab in the WorkWell application helps set their break times and the user would receive break reminders which would help them to relax and refresh, this would also help users see their upcoming break schedule which would help them in prioritizing their work too.

In today's world, people are seen as less focused on their health and ergonomic postures. Poor posture would lead to discomfort in wrists, shoulders, and legs which in long term would become severe. Helping software engineers in understanding the importance of ergonomics is important. WorkWell Application helps users understand the importance of good posture which benefits the users and their employers as well as the employees who are focused, and it increases their productivity and energy levels.

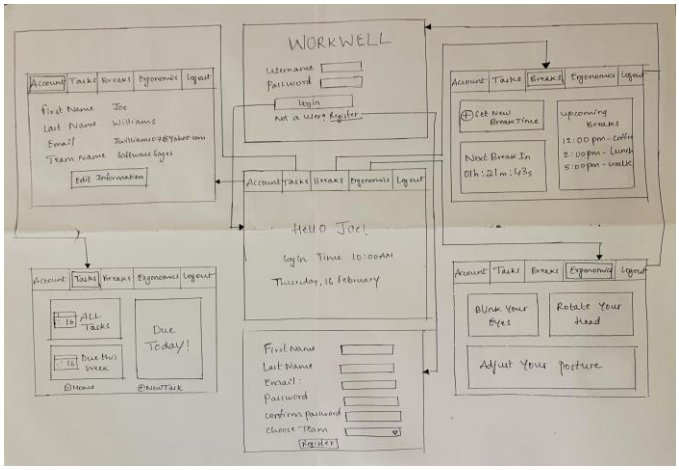

Figure 1: Wireframe mockup of WorkWell User Interface in action.

2 Related Work

Usually focus apps are a growing area of interest and research in the field of productivity and time management is an assessment of the efficiency of a person. Procrastination is one of the main reasons for preventing people from being productive. In order to handle this lethargy, an application that provides reminders to users about their pending tasks and meetings increases the productivity [1].

Employees who experienced anxiety and difficulty tracking their assignments have started using an application called Homework Suite app mentioned in the paper which helped them complete assignments and lower anxiety thereby increasing their overall learning satisfaction with the course [2].

According to the research in the paper, it is proved that taking breaks in regular intervals while working helps employees in being more productive and offers many health benefits. Working harder to compensate for negative performance effects can indeed lead to greater physiological or psychological strain. This is because when an individual works harder to compensate for poor performance, they may need to expend more physical or mental effort, leading to increased stress levels and fatigue.

Physiologically, overworking can lead to conditions such as muscle tension, headaches, and other physical symptoms of stress. Psychologically, working harder to compensate for poor performance can lead to emotional exhaustion, burnout, and reduced motivation. Furthermore, if an individual is continuously compensating for poor performance by working harder, they may be more prone to developing chronic stress-related conditions, such as depression or anxiety. It is essential for individuals to maintain a healthy work-life balance to avoid such negative outcomes.

In summary, while compensating for poor performance by working harder may temporarily improve performance, it can lead to increased physiological and psychological strain in the long run. Therefore, it is crucial for individuals to prioritize their mental and physical health by managing their workload and avoiding overworking [3].

In order to overcome strain, micro-breaks help enhancing work performance and personal well-being from highly depleting tasks. The idea of micro-pauses has its roots in the field of ergonomics, where it is characterized as planned intervals of rest that people incorporate into their routine to avoid development or worsening of physical symptoms, such as discomfort or pain in the muscles and skeleton [4].

3 Architectural Design

Layered/Tiered 3 architectural pattern will be the most useful to build the system because the program would have a user interface to communicate with the users and must keep reminders and deadlines within the system and notify whenever needed. This kind of design would therefore be more advantageous for an application whose primary goals are data storage and user interface.

3.1 Components

Below are the major components of the architectural design of WorkWell.

1)User Interface: The user interface is part of our program that users will interact with first. To make it easy for users to use the app, we want the user interface to be intuitive and contain a variety of simple buttons and options.

2) Notifications: Our App notifications are a crucial component. Periodically we would send users reminders about tasks, due dates, and events. Users would be able to choose the type of notifications they want to get and when they want to receive them.

3) Scheduling: The scheduling component would let users make and manage their schedules. It would have tools for task creation, setting reminders, and other things. The schedule could be seen in a variety of ways, including daily, weekly, monthly schedules.

4) Security: Security is crucial to our application since we don't want users to be able to see a user's schedule and tasks without proper authentication and permissions

5) Teamwork: We intend to incorporate teamwork capabilities into our collaboration tools, such as the ability to share tasks and projects. Tasks could be assigned, and progress monitored by managers and others in positions of authority.

For the application to be usable, each of these elements would need to function in concert. The user interacts with the user interface (UI), enters his login information for the application (security), adds his schedule, deadlines and tasks there (scheduling), receives tasks from his manager and teammates (collaboration) and receives periodic notifications and alerts for his tasks and deadlines whenever they are due. If any of these components weren't functioning properly, the application wouldn't be usable.

3.2 Constraints and Guidelines

Let us discuss about a few constraints and guidelines while building workwell.

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1)Design requirements: User needs to be surveyed to understand the issues, goals, and preferences of target user. We have a good notion of a software engineer anticipates from a productivity application because we have had experience in the software industry.

2) Performance: Since this application would be an add-on to already existing program, it needs to be optimized for performance to ensure that it operates without a hitch. Users should have quick access to functionality without experiencing noticeable lags or freezes.

3) Security: Schedules and task information for users must be kept confidential. Secure data storage and suitable authentication are necessary prior to accessing user data.

4) Compatibility: To ensure that users can access the program from the device of their choosing without running into any problems, application must be compatible with all operating systems and devices like tablets, mobile phones or laptops.

3.3 Relevant Design Patterns

For our application, we can make use of the creation design pattern family. Without specifying the class of the new object, the factory method pattern would be used to construct it. It can be used to generate various activities for WorkWell, as well as attributes like recurring tasks, periodic tasks and deadlines for the tasks. The singleton pattern guarantees that a class has only one instance, and it may be used to ensure that WorkWell's task manager and data storage management are utilized just once. In our application context, the observer pattern can be used to alert users when changes take place to an observable object, such as alerting users when a job is finished, or a deadline is coming close.

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