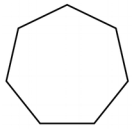
Computer Science & ENGINEERING

University of Nevada, Reno



Quantivity

Quantifying Productivity

Start developing discipline
by making better choices
using numbers.

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Abstract: (Mel)

Quantivity's goal is to provide a simple tool that users can use to maximize their productivity by gamifying their progress. We'll be talking about how this application will be absolutely useful to specific users with specific goals and how it can truly impact their lives. We will then follow up with legal and ethical implications that pertain to the development and impact that Quantivity will bring as well as entailing risks that could potentially be an inconvenience to the user's experience.

Project Description: (Mel & Robin)

People face common issues with falling behind on their journey to mastering a particular skill. The main goal of this project is to help the user stay on track with tasks that lead them to mastering a particular skill they wish. We humans sometimes need accountability so to have an application that keeps track of what we've been doing from a gamified perspective would be faster for us in terms of reflecting. The intended users
Students face common issues with falling behind on their journey to mastering a particular skill. Reflecting and writing about it introspectively seems like a lot of work so why not translate it to numbers (0, 0.5, 1) that will indicate the level of productivity they've achieved per task. The app will be written in javascript using the Node.js framework. The backend will be an express.js server that will support a react.js frontend app. Melina will be responsible for the frontend development of the app using HTML and CSS on Visual Studio Code and CodePen.io. Robin will be responsible for the backend development and high level design.

We will be uploading our code on github and For dependability properties, we're still determining the probabilities to make sure the system will be up and running to deliver good service to our user. We're unsure of the damage that the system may cause, we may possibly look into hosting it somewhere with great protection from malware and such for safety and security purposes.

Significance: (Mel)

This project is worthwhile because it will give us the opportunity to learn how to develop a functional health and wellness web application from scratch. It'd be interesting to pursue because we'll get an understanding of how products and services are developed and delivered. Getting an understanding of the needs of our users is essential to enhancing the quality of this application. Throughout the process of development, we use HTML, CSS, and Javascript to create a website that will be accessible to anyone, anywhere, and anytime. There will be 24/7 business hours where our users can access our website and use the services it provides and acquire the information they need. This project will help our professional growth in a sense that we are able to familiarize ourselves through the process of developing a web application; the frameworks, packages, and programming languages to use. The demand for programmers is growing because small businesses and global companies need online tools that are user-friendly and effective to grow the business. The new and innovative characteristics of our project is the feature of gamifying a user's progress. It is a bit similar to a grade point based system that most schools use for students to reflect on their class progress through a letter grade. With Quantivity, the user reflects on their personal progress through numbers and the average percentage of those numbers. Similar applications that are related to the process would be Google Sheets; Google Sheets has the qualities to take points, taking the average from those points, and presenting a line graph from the data set. The inspiration for the interface design is from headspace.com; an application that eases stress and anxiety through guided meditation practices. To determine the market potential of our product, we will keep track of the market size by understanding and getting feedback from our users and our competition with apps like Headspace and Google Sheets. The further development is still determined as we're just in the beginning of developing it. Once we launch it, we can then get an idea of the user experience from different backgrounds and skills. The social and environmental impacts it has is replacing tools like planners and avoiding the complexity use of spreadsheets like Google Sheets and Excel.

Legal and Ethical Aspects: (Robin)

When constructing a user facing application, it is important to make sure that the user interacts with the application in a healthy way. Quantivity's goal of helping it's users improve their life through self-reported progress and activity tracking, if implemented poorly, could result in users interacting with the application in decidedly unhealthy ways. Late-stage capitalism breeds cultures of overproduction and pushes workers to tie their self-esteem to the value of their labor. Quantivity could easily add to this mindset and so it's important to engineer the application to remind its users to take care of their minds and bodies. Systems will need to be put into place such as warning the user if they are spending too much time on any given task, and encouraging them to block-out one or more days as untracked free time, to promote healthy self-improvement practices. In addition it is important to protect the users' privacy from the prying eyes of their bosses, their families or the police, who might use user data against them, as we've seen with companies such as Amazon, who have used activity tracking software to abuse their workers.

The product will be licenced using a general use public license (GNU) to allow for fair and open distribution of the software and its source code.

Changes and Progress since the Initial Project Concept: (Mel & Robin)

This section is left intentionally blank as this is the first draft of the project proposal rather than a revision.

Project Responsibilities: (Mel & Robin)

Robin will be responsible for building the application backend, including database management, secure handling of user data and user authentication, and ensuring that the high level design of the application is extensible and maintainable.

Melina will be responsible for building the frontend portion of the application including laying out the visual design of the achieved product ensuring that the user will have a smooth and easy experience.

Project Monitoring and Risks: (Mel & Robin)

Risk ID	Risks	Likelihood	Impact	Severity	Status	Owner	Raised	Mitigation strategies
1	Feature Creep	medium	high	medium	open	Robin & Mel		Well defined feature hierarchy
2	Cross-compatibility issues	low	low	low	open	Robin		Appeal to the most popular systems
3	Scope Variations	low	medium	medium	open	Robin & Mel		Well defined project scope
4	Poor Quality Code	low	high	low	open	Robin & Mel	2/20	Good commenting practices
5	Undefined Project Timeline	medium	high		open	Mel	2/5	Have a clear and consistent defined timeline
6	Undefined project purpose	low	medium		open	Mel	2/14	Be educated on health and wellness app development
7	Lack of communication	low	high	medium	open	Robin & Mel	2/5	Weekly meetings, open channel of communication
8	Added Workload	medium	medium	low	open	Robin & Mel	3/1	Keep intention and focus on practicality and deliverability

Contributions of Team Members: (Mel & Robin)

Robin Brossard: Contributed to the Project Description, Legal and Ethical Aspects, Project Responsibilities, and Project Monitoring and Risks, and such contributions took 4-5 hours.

Melina Tan: Contributed to the Abstract, Project Description, Significance, Project Responsibilities, and Project Monitoring and Risks, and such contributions took 5 hours.

References:

https://expressjs.com/ To host HTML and JavaScript files

https://reactjs.org/ Website with no proxy (HTML, CSS, JavaScript)

https://www.headspace.com/ Inspiration for Interface Design

https://codepen.io/ Sketchpad for HTML, CSS, and JavaScript

https://codebots.com/library/way-of-working/what-are-the-10-biggest-risks-in-software-development To determine risks

https://www.stakeholdermap.com/risk/register-common-project-risks.html To determine risks