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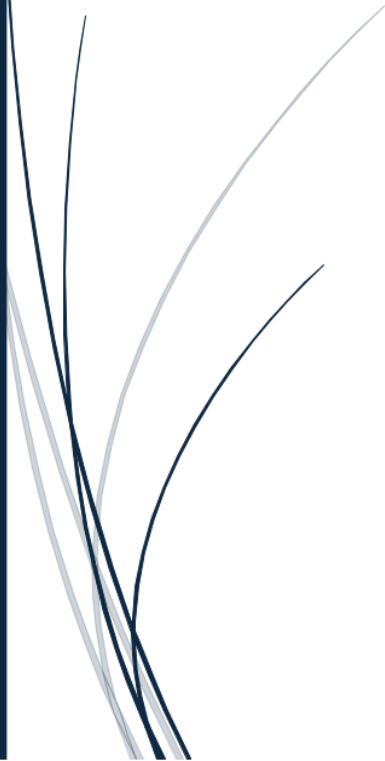
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4/25/2024

Project Management & Innovation

ACCA5033



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Introduction

As one of the few female students in my STEM (Science, Technology, Engineering, and Mathematics) program, I've felt the distinct challenges that come with this territory. To tackle these issues, I'm going to develop an application aimed at female students in STEM fields, aiming to create a supportive community where we can connect and thrive. This app will provide a space for us to find study partners, share educational resources, and support each other's academic journeys.

The goal is to create a network that diminishes the sense of isolation and boosts our confidence and performance in STEM. By connecting female students facing similar challenges, this platform will empower us to excel and support each other in a traditionally male-dominated field. This initiative is a step towards not only enhancing my educational experience but also enriching the STEM community for other women like me.

Project Management

Project Management & Planning

Objective

The objective of the project is to create an application that will bring female STEM student together for academic support, study partnership and creating an overall community.

Problem Statement

Female students studying in STEM can often face unique challenges, however as there are very few female STEM students it can create a lack of peer support.

Proposed Solution

To create a virtual platform where female STEM can connect with each other, find study partners, share resources and overall support each other.

Technologies/Resources

Frontend development

Languages

- HTML - HTML, or HyperText Markup Language, is the essential code for creating web pages. It ensures consistent display across all browsers and devices, and supports text, images, videos, and interactive features. [1]

Using HTML for this project will allow for versatile and engaging website which will also be easy for users to navigate.

- CSS- using CSS is essential for this project and it allows for the creation of styling and designing improving user experience.
- JavaScript – using JavaScript is also essential for this project as it enables interactive elements, making for better user engagement.

framework

- Vue.js - Vue.js is great for working with HTML, CSS, and JavaScript, offering a straightforward way to build user interfaces that can be simple or complex. Its standout feature is its flexible architecture, which makes it perfect for scalability. [2]

Using Vue.js is perfect for this project as its easy to learn, flexible and fast with a strong community attached to it.

Tools

- NPM - NPM is the default package manager for Node.js, and as of September 2022, it's the largest code repository globally with over 2.1 million packages. Initially designed for managing Node.js dependencies, it now supports both backend and frontend JavaScript development. [3]

Using NPM for this project allows the creator to be able to easily manage and install packages that can help enhance the project.

- Webpack - Webpack is a tool that bundles JavaScript files together, such as, scripts, images and CSS into fewer files which will speed up load times which in turn improves performance.

Using webpack for this project is useful as it will help manage all the JavaScript files.

Backend development

Language

- Python – python is perfect for this project as its simple, many libraries, versatility and its integration capabilities.

Framework

- Flask - Flask is great for backend application development because it allows quick development with fewer lines of code. It's used by large companies like Uber, Netflix, and Reddit due to its simplicity and efficiency, making it a preferred choice among professional developers. [4]

Database

- MySQL – MySQL I perfect for this project for data management as it's a reliable and powerful system.

Additional technologies

Communication

- Socket.IO – Socket.IO is great for real time messaging.

Styling

- Bootstrap – using bootstrap for styling in this project is great as it speeds up styling with ready-made designs.

Version control

- Git- using git for this project is useful for tracking changes and project management for better software development.

Deployment and testing

platform

- GitHub – for deployment

Testing

- Jest for front end testing and PyTest for backend testing.

Project timeline

Weeks 1-2

- Plan specific functionalities.
- Design wireframes and flow diagrams.
- Create a GlitHub repository.

Weeks 3-4

- Set up necessary development environment for the project.
- Create the backend architecture, including developing APIs and designing database schemas.

Weeks 5-6

- Create the frontend interface.
- Make sure it integrates with backend.

Weeks 7-8

- Perform intensive testing.
- Refine the project.
- Make enhancements.

Weeks 9-10

- deploy project.
- gather feedback.

Weeks 11-12

- incorporate feedback.

- prepare for launch.
- promote app over universities and online.

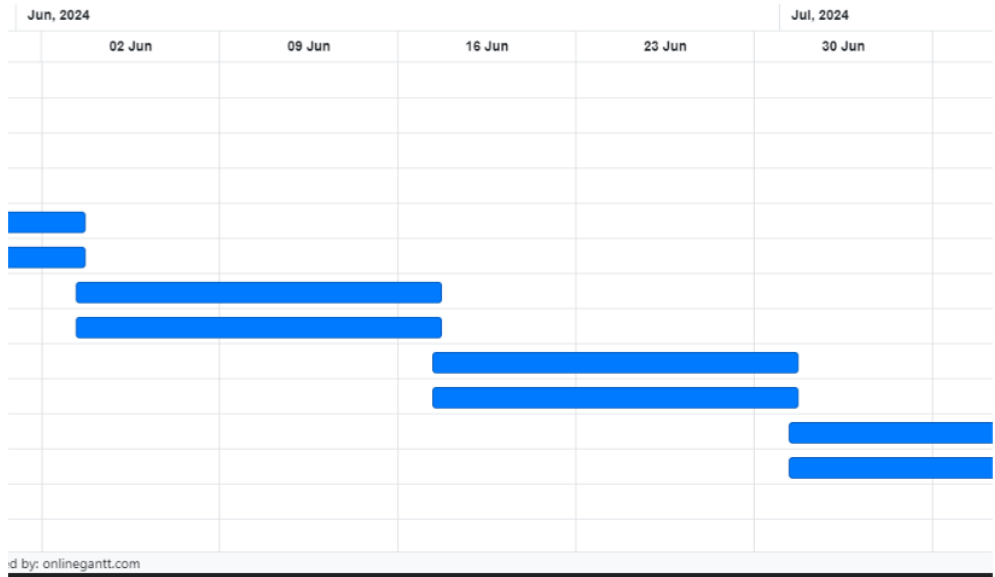
Constraints

- **Time** – the project had to completed during the final year.
- **Resource** – limited to tools which are cost effective and more realistically free.
- **Skill** – as a student there's only so much skill learned.

Gantt chart



ID		Name
1		Plan Specific Functionalities
2		Design Wireframes and Flow Diagrams
3		Create a GitHub Repository
4		Set Up Development Environment
5		Create Backend Architecture
6		Create Frontend Interface
7		Integrate Frontend with Backend
8		Perform Intensive Testing
9		Refine and Enhance Project
10		Deploy Project
11		Gather Feedback
12		Incorporate Feedback
13		Prepare for Launch
14		Promote App in Universities and Online



Project design

Requirements Specification

Functional requirements

- **User registration** for users to be able to create their own accounts with profiles.
- **Profile managements** for the users to be able to edit their profile with personal and academic information.
- **Matching algorithm** for users to search and get matches with similar studies.
- **Messaging** for users to be able to talk openly in a group and privately.
- **Resource sharing** so users can share academic information.

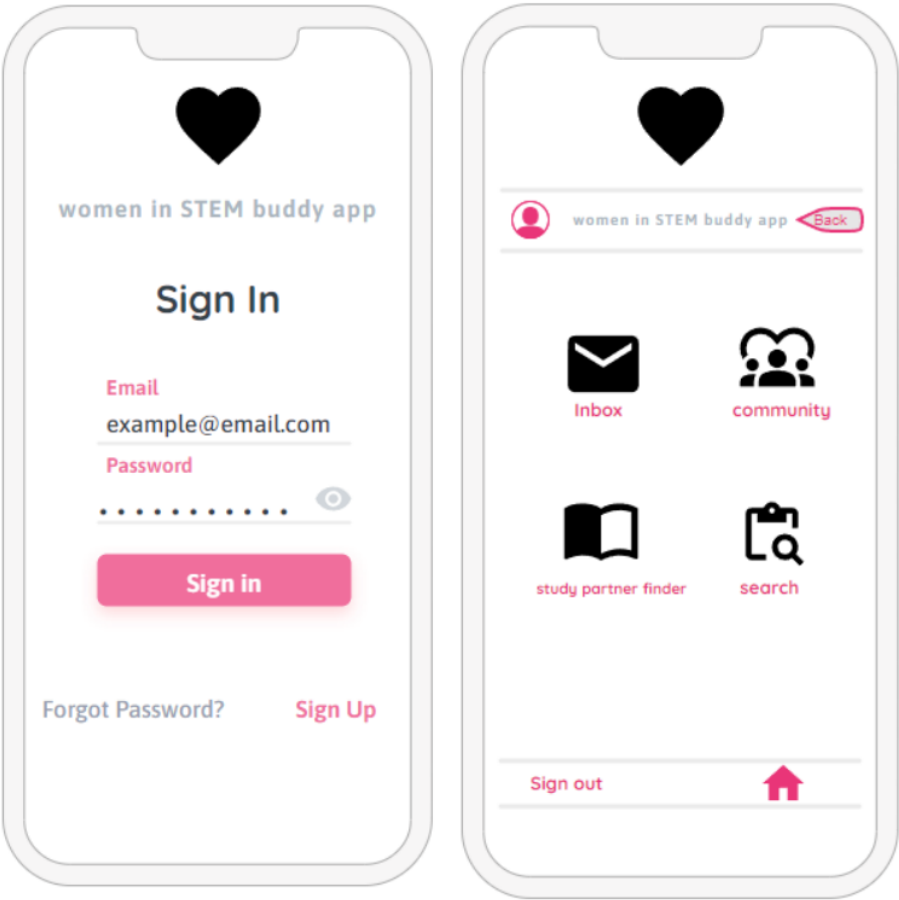
Nonfunctional requirements

- Make sure the app works and is **user friendly**.
- The project needs to have **scalability**.
- Implement robust **security**.
- Make sure its **accessible** for users with disabilities.
- Make sure the app **complies with all legal and regulatory** requirements.

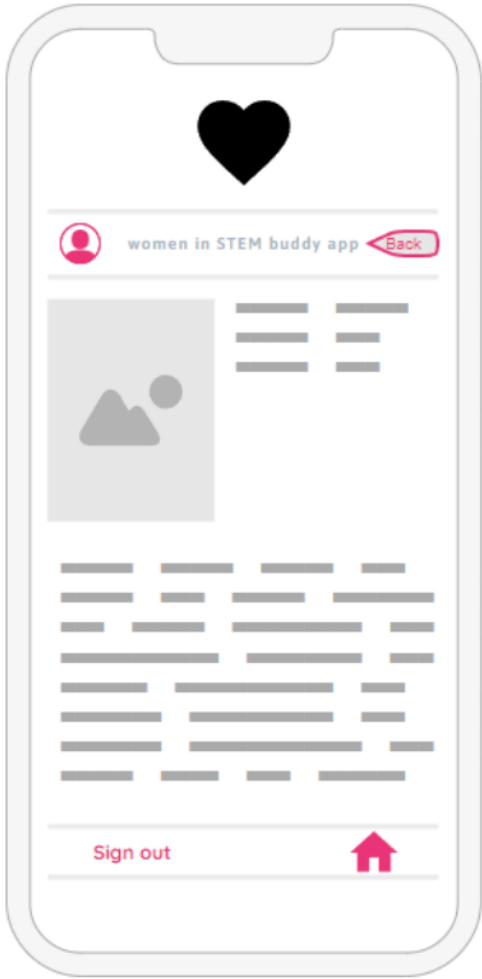
Wire framing



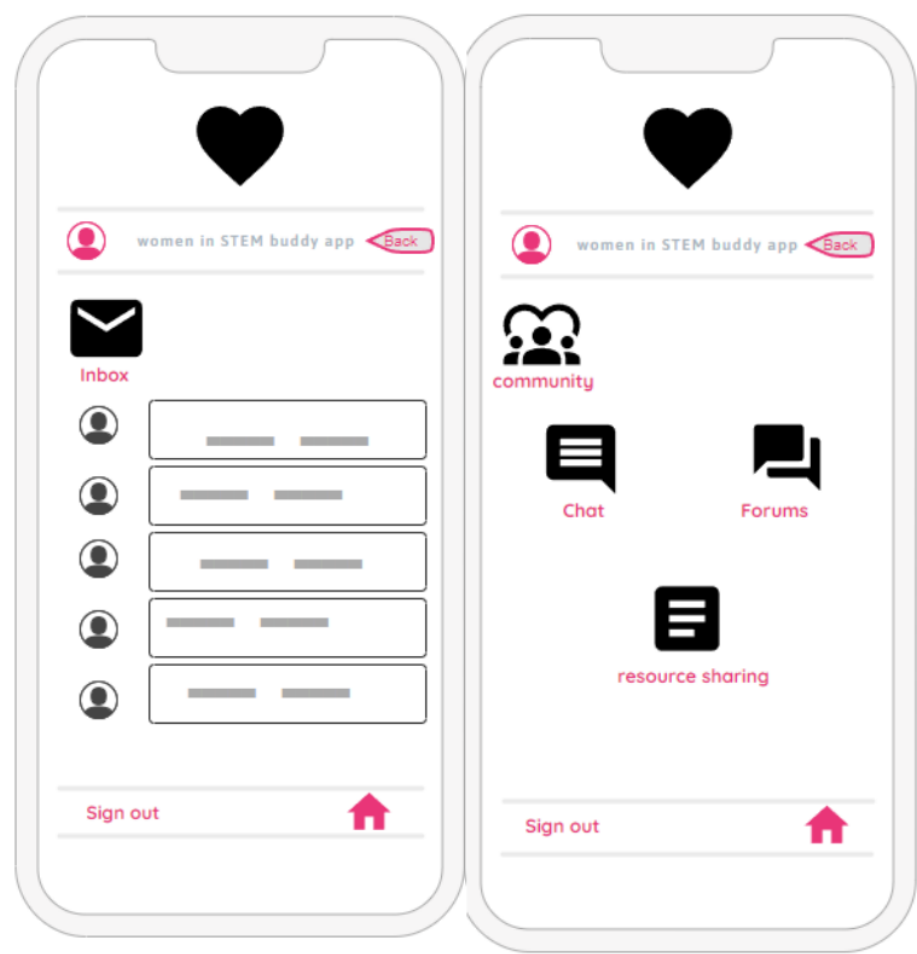
Sign in screen and home page.



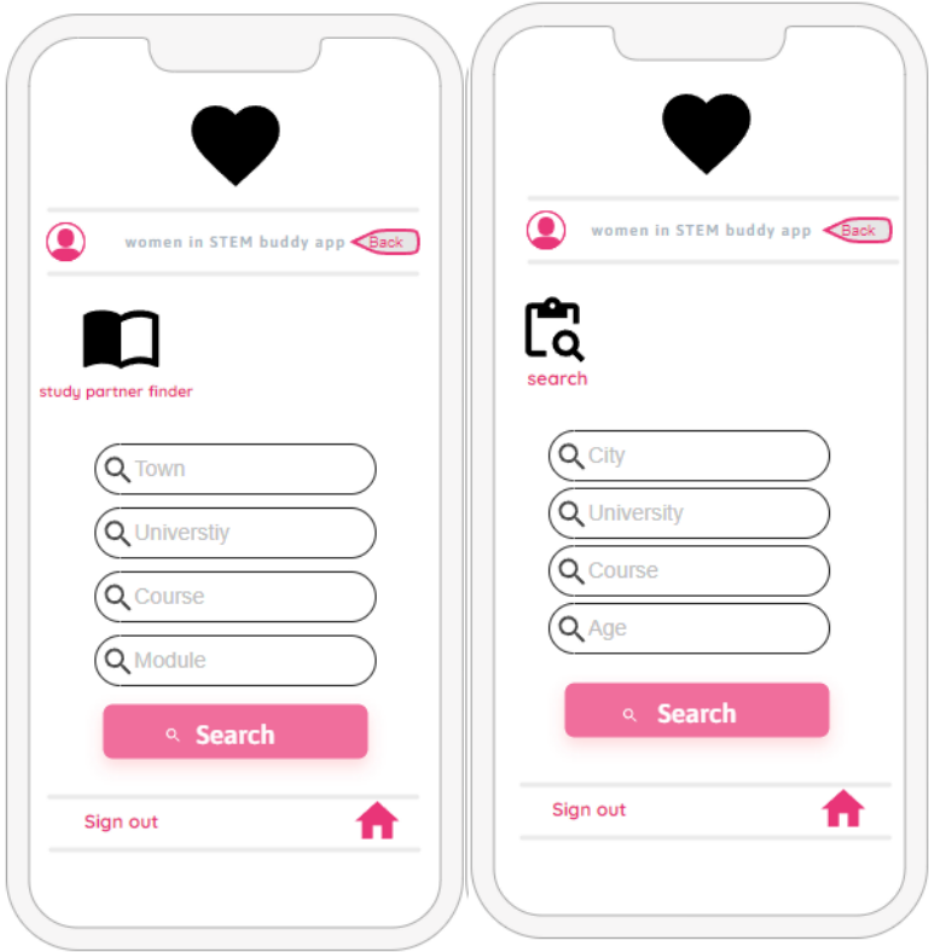
Profile.



Inbox & community page.

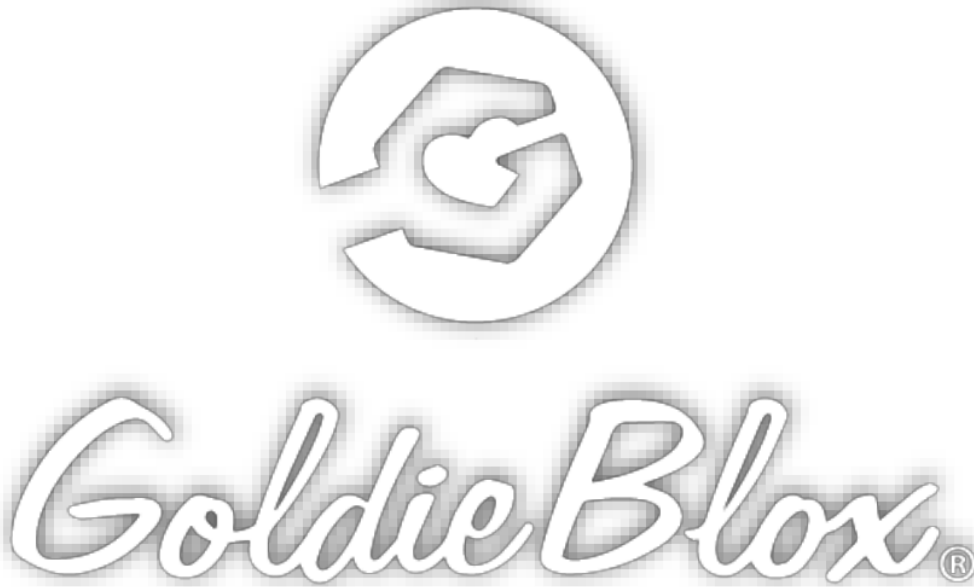


Study partner finder & friend matching.



Innovation

As the project idea is about women in STEM the next part of this report will be focusing on innovation and some key considerations relating to a company called GoldieBlox which is company that aims distribute games and toys for girls designed to develop early STEM skills.



[5]

PEST & SWOT

PEST Analysis

- **Political** - Changes in educational standards and government incentives aimed at enhancing diversity in STEM fields may impact GoldieBlox. Policies that promote gender diversity in education can offer chances for partnerships and expansion.
- **Economic** - Economic downturns could lower consumer spending on educational toys, impacting sales. Conversely, increased funding and grants for STEM initiatives could drive market growth.
- **Social** - A rising social trend toward gender equality in education, especially in STEM fields, is shaping parents' and educators' purchasing choices, benefiting companies like GoldieBlox.

- **Technological** - Progress in educational technology and digital learning platforms present GoldieBlox with chances to broaden their product lineup to include digital and interactive learning tools.

SWOT Analysis

- **Strengths** - A clear mission centered on gender diversity in STEM, an inventive product range merging play with education, and active community involvement through workshops and events.
- **Weakness** - More expensive product prices in comparison to non-educational toys
- **Opportunities** - Opportunities for international expansion, creating new products integrating cutting-edge technologies such as AR/VR.
- **Threats** - Competing against larger toy and educational corporations and adapting to evolving regulations concerning toy safety and advertising to children.

Legal and ethical considerations

- **Compliance with educational standards** – making sure all products meet the educational standards across different regions.
- **Advertising practices** - Maintaining ethical marketing standards, particularly in advertising to children, to ensure messages uphold positive social values.
- **Data privacy** - It's essential to comply with children's online privacy protection laws if digital products gather data – which they will as they're now on Roblox.

The concepts, methods, practices and to use to develop, deploy, maintain and evolve the practical element of the project.

To successfully implement the "Women in STEM Study Buddy App" within a large organization a streamlined and effective approach which focuses on a user-friendly design should be adapted.

Development and Deployment

This project will utilize Agile practices for flexibility, responsiveness to changing requirements, and iterative development. Regular sprints will keep the project on track and adaptable to new insights and scope changes.

Technological stack

The application will utilize React for frontend development, taking advantage of its robust ecosystem and reusable components, with Node.js handling backend operations for its scalability and efficiency in managing tasks that don't have to wait for each other to complete. MySQL will be employed as the database, benefiting from its strong consistency, reliability, and ability to handle complex queries and large datasets.

Monitoring

Monitoring tools will be used to consistently monitor the projects performance ensuring a timely resolution of any issues that arise.

Security

Security will be a top priority in development of this project. Regular audits will be conducted to ensure compliance with security standards.

Feedback

Regular feedback from users will be sought through surveys and usability testing sessions, which will be crucial for iterative development and continuous improvement of the app. A/B Testing will be routinely conducted to ensure that new features meet user needs and enhance the app effectively before wider rollout.

Maintenance

The app's architecture will be designed to handle growth seamlessly, both in terms of user base and functional complexity. This involves utilizing cloud services for hosting, which provides scalability and reliability. For content delivery, methods will be employed to ensure fast load times and a smooth user experience globally.

This methodical approach guarantees the effective development, deployment, and maintenance of the "Women in STEM Study Buddy App," ensuring alignment with the organization's strategic goals and continual adaptation to meet the evolving needs of its users.

Project reflection

The "Women in STEM Study Buddy App" project offers an excellent chance to enhance my skills and make a positive impact on society. This reflection outlines the skills I intend to develop, the societal changes I hope to accomplish, and potential challenges I may encounter, along with strategies to overcome them.

Developing new skills

Technical Skills - I plan to deepen my understanding of advanced software development frameworks such as React and Node.js, crucial for building robust, scalable. This technical upskilling is essential for managing the complex functionalities expected in a dynamic educational tool.

Agile Methodologies - Implementing Agile project management will be key to overseeing this project. Agile's iterative approach will enable flexible responses to changes and continuous improvement, enhancing project management skills.

User Experience Design - I will focus on developing strong UX design skills, vital for creating an intuitive and accessible application. This includes learning about best practices in accessibility and usability to ensure the app meets a wide range of user needs.

Positive Impact on Society

The app aims to address significant societal challenges, particularly the underrepresentation of women in STEM fields.

Supporting Women in STEM -the app will directly support women in STEM education and careers by offering a platform for networking, mentorship, and resource sharing. This support plays a crucial role in boosting female participation and retention in these fields, thus promoting diversity and equality. [6]

Educational Resource: In addition to personal advantages, the app will function as a tool for education, encouraging broader knowledge sharing and peer learning. This contributes to the development of a more skilled workforce, which positively impacts the overall socio-economic environment.

Risks and Challenges

Several potential risks and challenges could impact the project's success.

Technical Complexity and Scalability - Addressing the technical requirements of the app, particularly with the expansion of the user base, presents a primary challenge. Employing scalable cloud services and following software architecture best practices will facilitate efficient management of these demands.

User Engagement and Retention - Sustaining user engagement over time is vital. Consistent updates, integrating user feedback, and implementing gamification techniques can boost user interaction and retention.

Data Privacy and Security - In a time of increased data privacy concerns, ensuring strong security measures is crucial. Implementing strict security protocols and conducting regular compliance audits will protect user information effectively.

Funding and Resource Allocation - Securing continuous funding is vital for ongoing development. Exploring various funding sources like educational grants, partnerships, and sponsorships will be crucial for resource allocation.

Conclusion

Starting the "Women in STEM Study Buddy App" project is more than a technical task; it's a venture with significant social impact. By improving my skills in software development, project management, and user-centred design, I plan to make a real difference in reducing gender disparities in STEM. At the same time, by carefully planning and addressing potential risks and challenges, I'll help ensure the project is successful and sustainable. This app is just the beginning of a larger effort to create a supportive, inclusive community for women in STEM, supporting broader goals of diversity and empowerment.

Bibliography

- [B. f. school, "byjusfutureschool.com," [Online]. Available:
1 [https://www.byjusfutureschool.com/blog/why-is-html-used-in-web-
\] pages/#:~:text=References-
,What%20are%20the%20Benefits%20of%20Using%20HTML%20in%20Web%20
Pages,content%20and%20design%20elements%20together.&text=It%20gives%2
0structure%20to%20the,mess%20of%20t. \[Accessed 10 04 2024\].](https://www.byjusfutureschool.com/blog/why-is-html-used-in-web-pages/#:~:text=References-,What%20are%20the%20Benefits%20of%20Using%20HTML%20in%20Web%20Pages,content%20and%20design%20elements%20together.&text=It%20gives%20structure%20to%20the,mess%20of%20t)
- [bacancy, "bacancytechnoly.com," [Online]. Available:
2 [https://www.bacancytechnology.com/blog/why-use-vue-
\] js#:~:text=of%20other%20tools.-
,Vue.,%2C%20parts%2C%20and%20project%20templates.. \[Accessed 10 4 24\].](https://www.bacancytechnology.com/blog/why-use-vue-js#:~:text=of%20other%20tools.-,Vue.,%2C%20parts%2C%20and%20project%20templates..)
- [nodesjs, "nodesjs.com," [Online]. Available: [https://nodejs.org/en/learn/getting-
3 started/an-introduction-to-the-npm-package-manager. \[Accessed 10 4 2024\].](https://nodejs.org/en/learn/getting-started/an-introduction-to-the-npm-package-manager)
]
- [flatirons, "flatirons.com," 3 1 2024. [Online]. Available:
4 [https://flatirons.com/blog/what-is-flask-overview-of-the-flask-python-framework-
\] 2024/#:~:text=Flask%20is%20a%20good%20choice,Uber%2C%20Netflix%2C%2
0and%20Reddit.. \[Accessed 11 4 2024\].](https://flatirons.com/blog/what-is-flask-overview-of-the-flask-python-framework-2024/#:~:text=Flask%20is%20a%20good%20choice,Uber%2C%20Netflix%2C%20and%20Reddit..)
- [GOLDIEBLOX, "goldieblox," [Online]. Available: [https://goldieblox.com/. \[Accessed
5 25 04 24\].](https://goldieblox.com/)
]
- [J. C. Blickenstaff*, "tandfonline," 15 7 2006. [Online]. Available:
6 [https://www.tandfonline.com/doi/abs/10.1080/09540250500145072. \[Accessed 15
\] 4 24\].](https://www.tandfonline.com/doi/abs/10.1080/09540250500145072)

FINAL GRADE

GENERAL COMMENTS

77 /100

Total:		77
1. Engagement with Literature Skills:		
+ Good use of citations & a formatted reference list. - could be extended to gain additional marks in this category. - Some additional high-quality Professional/academic reference sources could also be included in the reference list, to gain extra marks in this category.	20	10
2. Knowledge and Understanding Skills: 10, 10		
* Project Man. & Planning: + Evidence of knowledge and skills covering project scope inc. proposed solution, required Technologies /resources to be used. Excellent. + A project timeline schedule & Gantt chart documented. - Project scope could include timeline key dates. + ii: Some appropriate methods, practices, and tools to develop, deploy, and maintain the practical element of the project is considered and documented. - Some additional practices and specific tools to evolve the practical element of the project could be considered and documented.	20	16
3. Cognitive and Intellectual Skills: 5e		

+ Introduction. Excellent idea. + Development methodology and Project scope assessed and clearly documented. – Scope analysis could be enhanced by including considering final year timeline. + PEST & SWOT analysis summary includes some key considerations and documents some relevant professional legal & ethical considerations. + Project's positive impact on society is clearly described. + Potential risks identified, and contingencies documented. Good. + Conclusion. Excellent!	20	18
4. Practical Application Skills: 10, 10		
* Gantt chart: + Gantt chart tasks appropriate and is clearly structured. – Not easy to read. – Schedule and Gantt could also include Project report chapters such as Literature review, Research Methodology and Evaluation chapters. And Final year time-frame. * Project Design: + 2 pieces of design work related to the practical element of the project have been created and documented. Good.	20	16
5. Transferable Skills for Life and Professional Practice: 5, 15		
New skills: + Potential to develop new skills clearly documented. Good. – communication and reporting skills could also be explicitly documented.	20	17

Report: Good structure, format and presentation.		
- Each report section could be numbered.		
-		
On-time and plagiarism check: /		

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