**Women Techsters Fellowship 2022/2023**

**Capstone Project Documentation**

**Introduction**

The Women Techsters Fellowship capstone project is the program's final and most significant project. It provides an opportunity for fellows to display the skills and knowledge they have acquired during the 6-month training by addressing a real-world problem or issue. The capstone project is an essential part of the program as it demonstrates the fellows' technical expertise and ability to effectively communicate technical concepts. It serves as a culmination of the educational experience and a testament to the fellows' hard work and dedication to their studies during the Women Techsters Fellowship Program.

**Objective**

The goal of the capstone project is to test the fellows’ ability to:

1. Apply technical skills and knowledge to a real-world problem or issue.
2. Work in cross-functional teams made up of members from various learning tracks to achieve a similar outcome.
3. Demonstrate technical expertise and the ability to communicate technical concepts effectively.
4. Conduct research and analysis.
5. Develop a complex project from start to finish, including project planning, execution, and presentation.
6. Showcase the solutions of fellows to potential investors and job placement partners

**Method**

The capstone project will focus on fellows identifying problems in various economic sectors and developing feasible solutions for them. The fellows will work in teams to find problems, produce solutions, and implement those solutions. For example, one team might focus on healthcare and create a project to introduce a new electronic medical record system. Another team might focus on finance and create a project to either create a new financial trading website or implement a new system for managing financial risks.

The capstone project should be a significant project that showcases technical skills and abilities. It should demonstrate the fellow’s ability to think critically and solve complex problems, as well as their ability to communicate technical concepts effectively.

**Method for Capstone Project Team Grouping**

The beneficiaries were grouped with the goal of having cross-functional teams. The use of cross-functional teams greatly enhances a capstone project by bringing together individuals from various learning tracks. Each team member's unique skill set and perspectives can be utilized to achieve a shared objective. Furthermore, having a diverse group of stakeholders on the team leads to more efficient decision-making and improved communication among team members. Giving each member a sense of ownership and accountability in the project's success can also encourage a more dedicated and motivated team. Additionally, cross-functional teams are more adaptable to changes in project requirements or technical challenges, providing a comprehensive approach to the project and ensuring that no important aspect is overlooked.

**Capstone Project Teams grouping summary**

1. Only fellows with at least 60% attendance in class were grouped
2. A total of 106 teams were formed
3. Each team contains 10-15 fellows
4. Each team has at least 1 software developer (front-end, back-end or mobile app developer), 1 product manager, 1 product designer and 1 data scientist.
5. Every team with a blockchain technology fellow also has a cyber security fellow because it ensures that the team has a well-rounded understanding of the security risks and measures associated with implementing a blockchain-based solution.
6. 1500 beneficiaries were grouped.

Click [here](https://technology4dev-my.sharepoint.com/:x:/g/personal/oyindamola_ezekiel_tech4dev_com/EcJLb7B2Pd5KpvqspPZRlYUBsIABMpCOhnu158TDWCsjOA?e=peByhV) to access the live document.

**The Capstone Project Management Process**

**Info session**

After validation of the beneficiaries' grouping, emails containing the grouping sheet will be sent to the fellows informing them of the team they belong to.

Additionally, a comprehensive information session on the capstone project will be conducted, where expectations and the process of carrying out the project will be clearly explained to the fellows.

**Project topic registration**

**Project Topic Selection Criteria**

When selecting a capstone project topic for the Women Techsters fellowship, one effective approach is to speak directly with small and medium-sized enterprises (SMEs) to understand their specific technology needs. By gaining insight into the challenges and opportunities facing these businesses, the fellowship participants can identify potential project topics that align with their skills and expertise, while also addressing real-world problems.

To start, the fellowship participants can research and identify a list of SMEs in the industry or field of interest. They can then reach out to these businesses to schedule meetings or interviews to learn more about their current technology needs. During these conversations, the participants can ask questions about the business's operations, challenges and opportunities, and technology infrastructure.

Based on the information gathered, the fellowship participants can then use this as a basis for selecting a capstone project topic that addresses the needs identified by the SMEs while also aligning with the skills and expertise of the fellowship participants. By working on a project that addresses real-world challenges faced by small businesses, the fellowship participants can gain valuable experience and contribute to the community in a meaningful way.

Each team will have an individual channel where they can work together and ideate on their capstone project. This channel will be created by the PM who is the group leader

It is expected that after 5 days, a team lead, team name, and the capstone project topic will be decided on.

**Each team is to select a representative to register their project topic and team name in the registration form** (click [here](https://forms.office.com/r/LKvp7KCVVK)).

**Capstone project tracking.**

The fellows will be given 3 weeks to develop the solutions and presentation starting with the problem statement.

The problem statement should contain the following:

1. **Background:** This section provides context for the problem and explains why it is important to address.
2. **Problem statement:** This section clearly and concisely states the problem that the capstone project aims to solve.
3. **Purpose:** This section explains the overall goal or objectives of the project. It should align with the problem statement and provide a clear sense of what the project aims to achieve.
4. **Scope:** This section defines the boundaries of the project and what it will and will not include. It should also explain any limitations or constraints that will impact on the project.
5. **Significance:** This section explains why the project is important and how it will contribute to the field or discipline.
6. **Methodology:** This section describes the approach or methods used to conduct research and solve the problem.
7. **Data:** This section explains the sources of data that will be used for the project and how it will be collected, cleaned, and analyzed.
8. **Deliverables:** This section describes the final products or outcomes of the project, including any reports, publications, or presentations that will be produced.

There will be a five-day allowance for beneficiaries to submit their problem statement to the collection form (click [here](https://forms.office.com/r/tu4evBw3U4))

**Capstone project final submission**

The project documentation must have been submitted one week before the week of presentations using a link with the following elements being present:

(click [here](https://forms.office.com/r/BZDHje1BNK)),

1. Executive summary: This section provides a high-level overview of the project, including the problem statement, purpose, and main results or outcomes.
2. Problem definition and objectives: This section clearly and concisely defines the problem that the project aimed to solve and lists the specific objectives of the project.
3. Methodology: This section provides a detailed description of the methods and techniques used to conduct the research and develop the solution. It should include information about the design process, choice of technologies and programming languages, and any challenges or limitations encountered.
4. System design: This section provides a detailed overview of the design of the system or solution developed in the project. This could include diagrams, flowcharts, and other visual aids to help explain how the system works.
5. Implementation: This section provides a detailed description of how the system was implemented, including any software development methodologies used. It should also include information about testing and quality assurance processes.
6. Results and evaluation: This section presents the results and evaluation of the system, including any performance metrics, user feedback and usability testing, and any other data that was collected to evaluate the effectiveness of the system.
7. Conclusion: This section summarizes the main findings of the project and the impact of the project on the field or problem domain. It should also include future work and recommendations for further research.
8. References: This section provides a list of references used during the project, including any academic papers, books, or other sources used to inform the research and development of the system.
9. Appendices: This section includes any additional information that is relevant to the project but is not essential to the main body of the document. This could include source code, data sets, screenshots, or other supporting materials.
10. Technical report: Additional detailed information about the system design, implementation, testing and debugging, it could also include details about algorithms, libraries, and dependencies that are used in the project.

**Capstone project presentation**

Each team will be expected to present their capstone project to a panel of judges with experience in the field the fellows have carried out their capstone project.

The following will be the guiding principles for the capstone project presentation

1. Each team will be given 5 mins to present their project
2. Only one individual will be presenting the capstone project
3. Only the problem statement, solution and functional deliverables will be expected to be presented.

The top 20 teams from the general presentation will get the opportunity to present during the career week event.

**Criteria for Capstone Project Completion**

For a team to successfully complete the capstone project the team must have:

1. Identified a problem in the field of technology that interests the team and aligns with a specific economic sector.
2. Conducted independent research on the problem identified.
3. Developed a plan for addressing the problem.
4. Executed the plan and collected data or other relevant information.
5. Analysed the data and draw conclusions based on the findings.
6. Developed a solution to the problem from their findings
7. Presented the findings and solution clearly and concisely, using appropriate technical language.

**Timeline**

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| **S/N** | **Activity** | **Date** |
| 1 | Info Session | 1st March 2024 |
| 2 | * Kickoff meeting to review project goals, expectations and timeline * Allocation of tasks to team members * Discussion on the approach and methodology for the project | 4th March 2024 |
| 3 | * Literature review and research on the chosen topic * Identification of data sources and preparation of data collection plans | 5th – 8th March 2024 |
| 4 | * Data collection and preparation of the data set * Initial data analysis and exploration * Project Topic Registration | 11th – 15th March 2024 |
| 5 | * Development of a preliminary model and testing of its performance * Refinement of the model based on results * Problem Statement Submission | 18th – 22nd March 2024 |
| 6 | * Further analysis and exploration of the data * Creation of visualizations to present findings and insights | 25th -29th March 2024 |
| 7 | * Preparation of the final report and presentation materials * Review and feedback sessions with project mentors | 1st to 5th April 2024 |
| 8 | * Final revisions to the report and presentation materials * Preparation for the final presentation * Capstone Project Submission | 8th – 12th March 2024 |
| 9 | * Final presentation to project mentors and stakeholders | 15th April 2024 |