Master of Professional Studies in Analytics
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Course:

ALY 6080: XN-Integrated Experiential Learning

Group 5

Module 6 Assignment- XN Project: Project Roadmap

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Abstract

With our sponsor LACP, we are developing a project for Portfolio Reviews Program, which is aimed at efficiently matching attendees with their preferred reviewers and generating optimal schedules. To do this we will be using Python and will incorporate algorithms and data structures for sorting, matching, and scheduling. Through this roadmap, we have tried to identify milestones for designing data structure, processing survey data, implementing scheduling logic, testing, and finalizing the program. Each part of the assignment is divided among the group members. Moreover, we also identified the key risks, such as insufficient survey data and technical challenges, are identified, along with corresponding mitigation strategies. To measure the success of the project we have classified our KPIs in terms of accuracy of matching, attendee satisfaction, and optimal schedule creation. Lastly, for the proof of concept, we will be delivering the demonstration live accompanying presentation, showcasing the program's functionality, features, and successful implementation.

Roadmap for Portfolio Reviews Program

Analytic Approach: Starting with the roadmap, the first section deals with what approach we would be taking to further design the model and solution for the project.

- **Python programming:** We are using Python language to develop the program for portfolio reviews. We would be leveraging its versatility and extensive libraries for efficient portfolio review management.
- **Algorithms and data structures:** Moving further, we would be implementing advanced algorithms and data structures to sort and match attendees and reviewers based on the survey data and preferences. We would also ensure optimal pairing as per attendees' satisfaction.
- **Avoid constraints:** In designing the model, we would also consider the availability of reviewers and the constraints of their respective schedules so as to generate the most favorable schedules for each attendee as well as reviewers.

Milestones: The second phase of any project is defining the milestones. Milestones serve as a major step in evaluating the performance of all the elements and approaches carried out by each member as well as the overall status of the project. For the project, we have developed five milestones that we would be covering one by one to ensure the success of the project.

- **Milestone 1: Design data structures and algorithms.**

The first milestone for our project would be to design the data structure and try on developing the algorithms for the portfolio. This will help us in organizing and sorting attendee and reviewer information, enabling effective matching based on preferences and criteria.

- **Milestone 2: Develop processing functions.**

The second milestone for the project is to develop the functions that would be used for the portfolio review. This involves creating robust functions that can accurately process and analyze survey data, extracting attendee preferences and rankings to facilitate the matching process.

- **Milestone 3: Implement scheduling logic.**

The third milestone we would be achieving is when we will implement the function created above and use the same for scheduling purposes. The logic will take into account the availability of attendees and session constraints, optimizing the scheduling process to create feasible and balanced schedules.

- **Milestone 4: A/B Testing and debugging.**

In the fourth milestone, where we have already implemented the function we created, we will now conduct rigorous A/B testing and debugging to validate the program's functionality, ensuring accurate attendee-reviewer matching and generating error-free schedules.

- **Milestone 5: Finalise and generate a final schedule.**

The fifth and final milestone of the project is to finalize the program we have developed and use it for the portfolio review. We would refine the program, incorporating any necessary adjustments or improvements, and generate the final schedule that meets the requirements and preferences of all stakeholders.

Job Assignments: In any project, it is necessary to divide the role and responsibilities among each group member. For this assignment too, we have decided on the specific tasks among each member to ensure the timely and efficient completion and success of the project.

- **Group Member 1:** Prepare the data and collect all the information around the same. Perform data cleaning and initial EDA to make it convenient for further analysis and use.

- **Group Member 2:** Work on designing and implementing the sorting algorithms. Identify the functions for processing survey data and preferences.
- **Group Member 3:** Handle the scheduling logic and constraint management. Iterate the logic so that it matches the availability and schedule provided by the sponsor.
- **Group Member 4:** Responsible for testing and debugging the program. Once the algorithm and function are created, run those number of times to check its performance and outcome.
- **Group Member 5:** Give the final touch to the program created so far. The person will also incorporate improvements, and generate the final schedule to ensure it is successfully running and providing the desired outcome to the sponsor.

Key Risks and Mitigation Strategies: No project is without challenges and risks. For our project we have identified what possibly could come as risks in between or while developing the solution. We have identified 3 major ones listed below, along with that we have also considered how will we try to mitigate them:

- **Risk: Insufficient or inconsistent data about the attendee as well as reviewers.**

Mitigation: Implement data validation checks to ensure the completeness and accuracy of survey submissions. Communicate clear guidelines to attendees regarding the required information, format, and any specific instructions for submitting their preferences.

- **Risk: Technical challenges in integrating the reviewers's availability and session allocation.**

Mitigation: Thoroughly analyze the availability and session constraints to understand their complexities and limitations. Design and implement an algorithm that can effectively handle

these constraints, optimizing the scheduling process while ensuring feasibility and meeting attendee preferences.

- **Risk: Programming errors and bugs leading to inaccurate outcomes or results.**

Mitigation: Implement a robust testing strategy throughout the development process. Conduct rigorous unit tests to validate the individual components and functionalities of the program. Additionally, perform comprehensive end-to-end tests to ensure accurate matching and schedule generation, identifying and resolving any programming errors or bugs that may arise.

The Measure of Success: For any project to be a success, proper KPIs (Key Performance Indices) should be established so that the success and outcome can be measured and evaluated against the same.

What are our KPIs: For our project's success, we will be measuring the accuracy of the matching process, attendee satisfaction with their assigned reviewers, and the creation of optimal schedules considering attendee preferences and availability.

Some other KPIs that can also be an evaluation factors are:

- **Efficiency of the function and algorithm:** how effective and efficient the program is to allocation and schedule the portfolio.
- **Attendees feedback:** how satisfied are attendees with their matched up reviewers and what is their perception of fairness in the matching process, and the usefulness of the program.
- **Program/Algorithm adaptability:** how well the program can handle modifications or updates to the portfolio review requirements and adjust the scheduling accordingly.

Presentation Method and Delivery of Proof of Concept: Not only does the development of solution matters but a real time demonstration is what required to ensure and meet the expectations of the stakeholders and also to assess the last and final working of the program. To do so, we will be having two major deliverables:

- **Live Demonstration:** The proof of concept will be showcased through a live demonstration of the program, providing a hands-on experience of its functionality and capabilities. This will be conducted during a virtual meeting with the organization, allowing stakeholders to interact with the program in real-time.
- **Accompanying Presentation:** A presentation will be prepared to complement the live demonstration. It will provide an overview of the program's functionality, emphasizing key features and benefits. Additionally, it will cover the development process, highlighting the challenges encountered and the successful implementation of the program.

References:

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