MGMT-6059-(01)-23F

Term Project – Part 1

Group 11

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Group Members

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## Project Title: Data Analytics Lab

Description:

To give students real experience and hands-on learning in the field of data analysis, the Data Analytics Lab initiative intends to construct a dedicated room outfitted with cutting-edge equipment and resources. Using a variety of instruments and methods, students will be able to investigate, analyze, and understand data in this dynamic learning environment.

### Scope:

1. Infrastructure setup:

obtaining and setting up what is needed gear (servers, computers, etc.). Installation of a strong network architecture to facilitate data processing and characterization. Licenses for software for platforms and tools for data analysis are made available.

1. Tool and software selection:

Assessment and choosing of SQL, Tableau, R, Python, and other industry-standard data analysis tools. Specified applications must be installed and configured to guarantee smooth performance.

1. Curriculum development:

fabricating a thorough program that covers basic to sophisticated analytical ideas. To strengthen learning, develop practical exercises, case studies, and projects.

1. Training and workshops:

holding instruction classes on the proper utilization of the equipment and resources in the lab for professors and lab associates. Putting up sessions to introduce participants to the lab's features.

1. Maintenance and support:

Putting up an ongoing maintenance strategy to guarantee that all of the software and hardware are operating at peak efficiency. Supplying technical assistance to teachers and students for any problems or questions about the lab.

### Deliverables:

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| WBS | Task Name |
| **1** | **Data Analytics Lab Project** |
| **1.1** | **Equipped Data Analytics Lab with Computers and Software** |
| **1.1.1** | **Needs Analysis and Procurement** |
| 1.1.1.1 | Conduct Needs Analysis |
| 1.1.1.2 | Consult with Stakeholders |
| 1.1.1.3 | Research Latest Hardware and Software Technologies |
| 1.1.1.4 | Prepare RFPs for Hardware and Software Procurement |
| 1.1.1.5 | Evaluate Vendor Proposals and Select Suppliers |
| 1.1.1.6 | Purchase Hardware and Software |
| 1.1.1.7 | Coordinate delivery |
| **1.1.2** | **IT Infrastructure Setup and Training** |
| 1.1.2.1 | Set Up Computer Workstations with Necessary Software |
| 1.1.2.2 | Configure Network Infrastructure |
| 1.1.2.3 | Configure Security Protocols |
| 1.1.2.4 | Perform Hardware and Software Compatibility Tests |
| 1.1.2.5 | Address and Resolve Issues Identified During Testing |
| 1.1.2.6 | Lab Infrastructure Complete |
| 1.1.2.7 | Develop User Manuals and Training Materials |
| 1.1.2.8 | Conduct User Training Sessions for Students and Faculty |
| **1.2** | **Diverse Dataset Collection and Curation** |
| **1.2.1** | **Data Sourcing and Acquisition** |
| 1.2.1.1 | Research and Identify Potential Data Sources |
| 1.2.1.2 | Define Data Requirements and Criteria for Inclusion |
| 1.2.1.3 | Obtain Necessary Permissions and Licenses for Data Usage |
| 1.2.1.4 | Acquire Diverse Datasets from Various Sources |
| **1.2.2** | **Data Preparation and Management** |
| 1.2.2.1 | Cleanse Datasets to Remove Inconsistencies and Errors |
| 1.2.2.2 | Organize Datasets into Structured Formats |
| 1.2.2.3 | Document Metadata and Data Details for Each Dataset |
| 1.2.2.4 | Implement Data Versioning and Backup Procedures |
| 1.2.2.5 | Dataset Preparation Complete |
| **1.3** | **Student Projects and Reports Showcasing Data Analysis Skills** |
| **1.3.1** | **Project Planning and Support Teams** |
| 1.3.1.1 | Brainstorm Project Ideas and Topics |
| 1.3.1.2 | Develop Detailed Project Guidelines and Requirements |
| 1.3.1.3 | Assign Mentors and Project Supervisors to Student Teams |
| 1.3.1.4 | Provide Research Resources and Technical Support to Students |
| **1.3.2** | **Student Project Monitoring and Evaluation** |
| 1.3.2.1 | Monitor Student Progress Through Regular Meetings |
| 1.3.2.2 | Facilitate Peer Reviews and Collaborative Learning Sessions |
| 1.3.2.3 | Evaluate Student Projects Based on Criteria and Rubrics |
| 1.3.2.4 | Organize a Final Showcase Event for Project Presentations |
| 1.3.2.5 | Final Project Presentations |
| 1.3.2.6 | Project Completion |

### Why the project meets the definition of the project:

1. **Defined objective**:

The creation of a data analytics lab is the project's clear and defined objective. This objective is well-defined and gives the project team a clear path forward.

1. **Temporary nature**:

The commencement and conclusion dates of the project are known. The main objectives of the initiative will have been met whenever the lab is configured and running, at which point constant work and resources won't be needed.

1. **Unique endeavor**:

This is a one-time effort, the Data Analytics Lab project. It shouldn't be a part of an establishment's normal, continuous operations. Rather, it acts as a singular undertaking the fact that differs from standard operations in terms of prerequisites, finances, and outputs.

1. **Cross-function teams**:

Engagement with various stakeholders with varying specialties is required for the project. This involves hardware procurement experts, IT specialists to establish the required infrastructure, curriculum developers to create the lesson plans, and instructors to conduct the training.

1. **Resource allocation**:

Funding, personnel, and technical resources are among the particular resources that must be allocated to the project. Throughout the project, these resources can only be used to accomplish the project's objectives; they cannot be used for any other purpose.

1. **Risk Management**:

Potential risks and uncertainties will arise during the project; these must be recognized, evaluated, and reduced. For instance, there can be unforeseen software compatibility problems, equipment procurement delays, or modifications to the project's specifications. To keep the project on schedule, these risks must be controlled.

1. **Progress Monitoring**:

Monitoring project progress in relation to predetermined goals and benchmarks will be necessary. This guarantees that any changes from the plan can be handled quickly and that the project stays on track.

1. **Measurable deliverables**:

The initiative will provide concrete products like a curriculum, workstations that are outfitted with equipment, a fully operational data analytics lab, and trained faculty. A clear indicator of the project's success is provided by these deliverables.

1. **Customer satisfaction**:

When it comes to meeting the needs and expectations of the stakeholders—students, faculty, and administrators—the project's success will be assessed. The success of the project will be largely determined by how satisfied they are with the facility and its capabilities.

### Participation table:

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| **Topics** | **Contributor** |
| a | Gihan |
| b | Rakibul |
| c | Maitri |
| d | Rakibul |
| e | Gihan |
| f | Maitri |
| g | Maitri |
| h | Gihan |
| i | Rakibul |
| j | Gihan |
| k | Maitri |
| l | Gihan |

### References:

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