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**Project Name: Financial Report Q&A ChatBot**

**Project Description:**

In the context of a financial report, engage in a conversation with a user, addressing their queries and facilitating a dialogue to expedite the decision-making process related to investments. And for that purpose, our group will aim to build a chatbot which will be able sustain a conversation and pass suggestions as well.

**Project Purpose & Value to the industry:**

The primary objective of implementing a financial chatbot is to enhance user experience and streamline financial interactions. The chatbot serves as a valuable tool within the industry by providing efficient and personalized support for users engaging with financial data and reports. Its purpose lies in:

Enhancing Accessibility: The financial chatbot ensures that users have convenient and instant access to relevant financial information, fostering a more accessible and user-friendly interface.

Facilitating Quick Decision-Making: By promptly addressing user queries related to financial reports, the chatbot expedites decision-making processes, allowing investors and stakeholders to make well-informed choices on time.

Improving User Engagement: The chatbot contributes to increased user engagement by offering a conversational interface, making financial data more approachable and comprehensible for a wider audience.

**Project Scope:**

The project entails the application of cutting-edge Natural Language Processing (NLP) techniques to construct a Financial Question Answering system. This involves model training using provided datasets, creating an user-friendly interface, and comprehensive testing for reliability. The project scope encompasses addressing diverse financial queries related to reports, statements, and market analysis, accommodating variations in both questions and content.

The system aims to achieve a predetermined accuracy/performance threshold, such as 90%, on a standardized test set, making it comparable to other market solutions in terms of performance metrics. Additionally, the project targets an average response time for queries that fall below a specified threshold.

The user interface is designed to input financial data and questions, display answers, and facilitate follow-up questions. Moreover, the system is geared to handle context and engage in conversations, demonstrating an understanding of domain-specific details in the financial realm effectively.

**Project End Product(s):**

The end products of this project are:

1. A baseline model of a CHAT-BOT (name yet to be decided) which will be able to give answers to financially based questions and will be able to hold a conversation.
2. A user-friendly UI that will be easily accessible and effective.

**High-Level Requirements:**

To carry out this project, we would need some heavy and quality resources such as -

* As much quality data as possible as mentioned in the project charter. We must focus on quality as much as quantity.
* A Cloud Database to set up necessary data for the UI.
* A good understanding of the financial regulations.

**Project Resources requirement:**

As far as computational resources are concerned, our personal laptops should be able to handle the computational power we need to accomplish the project. No outstanding funding should be needed to go on with the development of the project other than our collective effort as a team.

**Project Completion Criteria:**

To be considered for this project to be completed, this chatbot must provide:

* Must provide reliable and precise answers to financial questions.
* Must respond in a reasonable time.
* The responses must be appropriately crafted, taking into consideration ROUGE and BLEU scores as metrics to assess the quality and effectiveness of response construction.

**Deliverable Schedule**

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| **Schedule** | **Deliverable Name** (Mapped to Assignment Name posted in Moodle) | **Deliverable Description** (Describe briefly the exact deliverable required to be submitted in the designated week) |
| Week3 | Project Deliverable #1 | A report of a Clear understanding of the project with the PA |
| Week4 | Project Deliverable #2 | Finalized dataset |
| Week5 | Project Deliverable #3 | Research on a finalized path to approach |
| Week6 | Project Deliverable #4 | Understand and build a Basic LLM Model |
| Week7 | Project Deliverable #5 | A generative UI |
| Week8 | Project Deliverable #6 | Test Results of our model on different Datasets |
| Week9 | Mid Term Presentation | Presentation slides for midterm project showcase + live presentation |
| Week10 | Project Deliverable #7 | A working prototype of our project |
| Week11 | Project Deliverable #8 | Debugging |
| Week12 | Project Deliverable #9 | Beautification of UI and deployment |
| Week13 | Project Deliverable #10 | Project closing (Documentation) |
| Week14 | Final Project Report Submission  Final Project Expo | Final Project Report + WIX project portfolio website  Hosting project expo booth |
| Week15 | Final Project Showcase | Presentation slides for final project showcase + live presentation |

**Attach a high-level Project Work Schedule in terms of major activities to an extent that students can follow and be tracked of their work progress in the project.**

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| **Task** | **Start time** | **End time** | **Who** |
| **Understanding the Project** | **Week 3 Day 1** | **Week 3 Day 3** | **Liniya, jashan, Abu** |
| **Learning about UI** | **Week 3 Day 1** | **Week 3 day 5** | **Neel** |
| **Learning about LLM** | **Week 3 Day 1** | **Week 3 day 5** | **Asit, Abu** |
| **Data Finalizing** | **Week 3 Day 4** | **Week 4 Day 5** | **Liniya, jashan** |
| **Model Building** | **Week 4 day 1** | **Week 6 day 5** | **Asit, Abu** |
| **Build UI** | **Week 4 day 1** | **Week 7 day 5** | **Neel, jashan, Liniya** |
| **Documentation** | **Week 8 Day 1** | **Week 8 Day 5** | **Neel, jashan, Liniya** |
| **Testing** | **Week 7 Day 1** | **Week 8 Day 5** | **Asit, Abu** |
| **Debugging** | **Week 10 Day 1** | **Week 11 Day 5** | **Asit, Abu** |
| **Compare with other solutions** | **Week 12 Day 1** | **Week 12 Day 5** | **Asit, Abu** |
| **Beautification of UI and Deployment** | **Week 10 Day 1** | **Week 12 day 5** | **Neel, Liniya, Jashan** |
| **Project Closing** | **Week13 Day 1** | **Week 13 Day 5** | **Everyone** |

**Benefit to Students**:

As a team, we will understand the concept on working side by side in real life industrial project. We will learn more about Project Management. As we are building the UI, we will learn more about Web development, Cloud database and development. This project will encourage broader accessibility to financial insights, accommodating both experienced professionals and individuals with limited financial expertise. This initiative aims to cultivate a more inclusive investment environment.