

Department of Computer Science and Engineering

**Project Report On:**

Brain Axis

Course Code: CSE-436

***Student Information***

**Name: Kazi Mst. Anika Tahsin**

**Batch: 41st(B)**

**ID: 171-115-077**

**Dept: CSE**

***Supervised by***

**Md. Ashikul Islam**

**Senior Lecturer**

**Department of CSE**

**Metropolitan University, Sylhet**

*Submission date: 10 September 2021*

**Acknowledgement**

First of all I want to thank the almighty Allah for giving me the opportunity for completing and submitting the final year project on time. It would not be possible to submit the final year project without the blessing of almighty Allah.

I would like to thank the supervisor of my project **Md. Ashikul Islam**, Senior Lecturer, Department of Computer Science and Engineering (CSE), Metropolitan University, Sylhet, for giving me guidance and advice for completing my project. Without his help and Supervision this project may not be fulfilled. His involvement in this project can only be acknowledged but never be rewarded.

Finally, I would like to thank **Md.** **Mahfujul Hasan**, Assistant Professor and Head of the Department and also thanks to all of the faculty members of Department of CSE, Metropolitan University, for making me skilled and giving me knowledge of Computer Science and Engineering.

**Certificate**

The project “Brain Axis” submitted by Kazi Mst. Anika Tahsin, ID: 171-115-077, Batch: CSE-41st has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Computer Science and Engineering in September 2021.

Md. Ashikul Islam

Project Supervisor and Senior Lecturer,

Department of Computer Science and Engineering

Metropolitan University, Sylhet

**Abstract**

**Chapter 1**

**Introduction**

## 1.1 Introduction

In this world of growing technologies everything is cloud based or going to be. To cope with this flow we always need to learn the latest technologies. To gain programming knowledge, learning algorithms, data struct ures and attending programming contests is a good option. Every university around the country organizes intra university programming contest s and trains the teams and organizes Q&A sessions often to improve the knowled ge of programmers. We saw that many universities do all these job s in to see all the historical ranks of different national contests, progress , write blog about algorithm, data-structures, seeking answers of question and man y more. In th is tool, we made distinct roles for use rs, mentors and coaches. We also introduced programmers leaderboard with a custom rating for all the programmers which can give anyone an overview about the skill le vel of a programmer.

We believe this tool can be used by coaches/mentors to do all the managing tasks more efficiently.

**1.2 Idea**

This idea simply came to my mind when I went to a restaurant that was newly open as well as I didn’t know if there were any restaurants nearby, due to I faced some problems, at that time I thought if I could create an online base platform where anyone can order food from any restaurant search for division wise, and find out all the information about restaurants. Originally the idea was coming from there. As I’m almost at the end of my Engineering and that’s why I am very much ripe to make this online based website project in real. I made some Projects which were not affiliated with my personal issues and that’s why it is a scope for me to select for making the Food studio Project 400.

**1.3 Features**

* For Users:

* Users can see and update their profile.
* Users can write/edit/delete their own blogs.
* Users can give answers to questions posted on the discussion tab.
* Users can see other user’s profiles, leaderboards, news, blogs, historical ranks of national level contests.
* Users can register for intra contests and complete assigned tasks.
* Users can live chat with team/group members.

* For Coach/Mentor:

* Coach/Mentor can create/edit/delete tasks and invite individuals or groups.
* Mentors can create/edit/delete groups and invite participants.
* Coach can create/edit/delete teams.
* Coach can create/edit/delete contests.
* Coach/Mentor can see other user’s profiles, leaderboards, news, blogs, historical ranks of national level contests.
* Coach/Mentor can live chat with team/group members and give answers to questions posted on the discussion tab.

* For Admin:
* Admin can post/edit/delete news.
* Admin can create new users.
* Admin can remove any registered user.
* Admin can change roles of any registered user.
* Admin can change the activity status of users.
* Admin can delete teams, tasks, contests.
* Admin can delete blogs of any user.
  1. **Justification**
* To ensure the efficiency of the system by providing better services compared to previous methods.
* To ensure efficiency by providing correct information.
* To ensure users by providing better facilities.
  1. **Limitation of the system**
* Requires internet connection for using this project as it is a web based application.
* Sufficient bandwidth and hosting space will be required for implementing the system.
  1. **Methodology of the project work**

The methodology for developing the software was into different components.

Which are given below:

* Data study and analysis
* Building Entity-Relationship Diagram
* Data normalization and Table Design
* Database Creation
* Software and Interface Design Coding, Error Handling and Debugging

**Chapter-2**

**Feasibility Study**

**1.3 Justifica**

Feasibility study is the beginning investigation for any software development. Simply a feasibility study is a short focused study that will check whether the system can contribute to overall objectives. It also justify whether the system can be developed using current technology and schedule. Feasibility study also checks the integration of the system with other systems that are already in place. It assesses the technical, economic, schedule and operational merits of a project. From the perspective of systems analyst feasibility analysis is a primary tool for recommending whether proceed to the next phase or discontinue the project. In this chapter we will be able to know the feasibility of the proposed system. [1]

**2.1 Technical Feasibility**

Technical feasibility focused on present technical resources of the organization and their applicability to the expected needs of the proposed system. Technical feasibility is an evaluation of the software and hardware and justifies how it meets the need of the proposed system. If the technical capacity of the proposed system is sufficient to support the project requirements then the system will be considered technically feasible. Technical feasibility aims to answer the following questions**:**

* Does the system fulfill the requirement of hardware and software?
* Are the current technical resources sufficient for the new system?
* Is the project feasible within the limit of current technology?
* Does the technology exist?
* Is there enough man power like coder, tester and debugger?
* Is the system fulfilling practical criteria?
* Is it available within the resource constraints?
* Can the system be upgraded?
* Do we currently process the necessary technology?

The answer to the above questions for the proposed system is yes. It fulfills all the criteria of technical feasibility. So the proposed project is technically feasible.

**2.2 Operational Feasibility**

Operational feasibility measures how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development. It also justifies how well the project will support the customer. Operational feasibility aims to answer the following questions**:**

* Is the project feasible to operate?
* Will the system affect the users in a considerable way?
* Does the current mode of the operation provide adequate throughput and response time?
* Does the current mode operation offer effective protection against accuracy and security of system data?
* How does the end-user feel about their role in the new system?

The answer to the above questions for the proposed system is yes. It fulfills all the criteria of operational feasibility so the proposed project is operationally feasible.

**2.3 Economic Feasibility**

Economic feasibility assesses the viability, cost and benefits of projects before financial resources are allocated. Economic feasibility also ensures the economic benefits of the organization. Economic feasibility involves benefits and evaluation of effectiveness of the proposed system. Economic feasibility aims to answer the following questions**:**

* Is the system can be developed within the estimated cost?
* Is the system cost effective?
* Will the proposed system give economic benefits to the organization?

The answer to the above questions for the proposed system is yes. It fulfills all the criteria of economic feasibility.

**2.4 Schedule Feasibility**

Schedule feasibility estimates how much time the system will take to complete. It justifies that if the project can be completed within time or not schedule feasibility is the most important term in feasibility study. A project will not succeed if it fails schedule feasibility. Schedule feasibility aims to answer the following question**:**

* Can the project be completed within given time?

The answer to the above questions for the proposed system is yes. It fulfills all the criteria of schedule feasibility.

Finally from the above discussion it clear that the proposed system is feasible for proceeding into next phase as the proposed system fulfills all the criteria of technical, operational, economic and schedule feasibility.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |

**Chapter-3**

**Software Requirement Specification**

Software requirement specification (SRS) stands for Software Requirements Specification, which is a document that fully describes the expected behavior of a software system. Software requirement specification (SRS) is a process under software requirement engineering process. This is the next phase after feasibility study in the software requirement engineering process. It is a comprehensive description of the intended purpose and environment for software under development. Software requirement specification laying out functional and non-functional requirements, and may include a set of use cases that describe interactions the users will have with the software. The Software requirement specification (SRS) fully describes what the software will do and how it will be expected to perform.

3.1 Functional Requirements

Authentication

Login- The user can login to the system with his or her username and password.

Logout- The user can logout from the system

Login failure- If the user does not exist in the database or user has not yet being verified by email

Authorization

* User role check- After logging in, the user role will be checked from the database and the user interface will be displayed according to their role.

3.2 Nonfunctional Requirements

Performance Requirements

There is no restriction on the number of the users to be added to the database.

3.3 Software requirements

The system software requirements are given below:

* Operating System: Windows
* Technology: Python, HTML, CSS, Javascript, Django, Django crispy forms,Materialize CSS.
* Database: SQLite
* Testing/Running Platform: Firefox Browser, Chrome Browser

3.4 Strong & Weak Point of the Project

Strong point:

* Time saving
* More efficient
* Less hassle

Weak point:

* Dependency on other websites.

3.5 Performance/Response time

The system response time for every instruction conducted by the user must not exceed more than a minimum of 10 seconds.

3.6 Error Handling

Error should be considerably minimized and an appropriate error message that guides the user to recover from an error should be provided

3.7 Availability

The system should always be available for access at 24 hours, 7 days a week.

**Chapter-4**

**System Design and Analysis**

This chapter gives a detailed outline of the software development methodology used in this project following up the various existing software development methodology. The strengths and weaknesses of the chosen methodology have been outlined. Further, the functional and non-functional requirements of the system are explained in detail and the use cases which are a list of steps, typically defining interactions between a role and a system, to achieve a goal. Class diagrams have been given to show detailed data modeling of the system which will be translated into code.

**4.1 Use Case Diagram**

Use case diagram is the most known diagram type. A use case diagram is the simplest representation of a user's interaction with the system that shows the relationship between the user and the different use in which the user is involved. A use case diagram can identify the different types of users of a system. Use case diagrams gives a graphic overview of the actors involved in a system, different functions needed by those actors and how these different functions are interacted. Use case diagrams include use cases, actors, include relationship, extended relationship and system boundary. A use case **represents a function or an action within the system.** Actor in ause case diagram is **any entity that performs a role** in one given system. The use case diagram of the system is given below.