**Group No.: Course: BTech Computer Engineering Semester: 7**

**Project Title: Web Application for Analysis of Football**

**Project Team Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **Roll No** | **Name** | **Mobile No** | **Email** |
| **E011** | **Rushang Phira** | **+919869760860** | **rushang.phira78@nmims.edu.in** |
| **E014** | **Alok Rajpurohit** | **+917718064605** | **alok.rajpurohit76@nmims.edi.in** |
| **E015** | **Aniket Raman** | **+919769910607** | **aniket.raman79@nmims.edu.in** |
| **E018** | **Shaurya Rawat** | **+917506071799** | **shaurya.rawat83@nmims.edu.in** |

**Mentor Name: Prof. Prachi Natu Department: Computer Engineering**

**Note:**

* **Marks per week (out of 10)**

**Rubrics for Evaluation:**

1. **Punctuality & Ethics : 3 Marks**
2. **Efforts and Quality : 7 marks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week No: 1 Date of Meeting: 10-08-2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Domain research**  **Finalizing domain**  **Approval of selected domain** | Did research on various domains to arrive on a particular domain.  After going through possible areas of research, machine learning was the domain finalized.    Presentation was held for approving the domain selected. | | Done  Done  Done |  |
| **Mentor’s Signature & Marks:** | | | | |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** | | | | |
| **Week No: 2 Date of Meeting: 19 – 08 - 2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Discussion**  **Literature Survey** | | Conducted meetings between team members to decide the scope and functions of the application.  Research papers selected for study:  Rushang (Roll No. E011):   * Beat the Bookmaker – Winning Football Bets with Machine Learning - Johannes Stuebinger, Julian Knoll * A novel machine learning method for estimating football players’ value in the transfer market - Iman Behravan & Seyed Mohammad Razavi * Support Vector Machine–Based Prediction System for a Football Match Result - Chinwe Peace Igiri   Alok (Roll No. E014):   * Modeling of Football Match Outcomes with Expected Goals Statistic - Adan Partida , Anastasia Martinez , Cody Durrer , Oscar Gutierrez and Filippo Posta * A Data Science Approach to Football Team Player Selection - Dr P Rajesh, Bharadwaj Dr Mansoor Alam, Dr Mansour Tahernezhadi * Player Performance Prediction in Football Game Richard - Richard Pariath, Shailin Shah, Aditya Surve, Jayashri Mittal   Aniket (Roll No. E015):   * Machine Learning in Football Betting: Prediction of Match Results Based on Player Characteristics - Johannes Stubinger, Benedikt Mangold * An examination of expected goals and shot efficiency in soccer - Alex Rathke * Creating a Model for Expected Goals in Football using Qualitative Player Information - Pau Madrero Pardo   Shaurya (Roll No. E015):   * Sports Analytics algorithms for performance prediction- Konstantinos Apostolou, Christos Tjortis * A study of Prediction models for football player valuations by quantifying statistical and economic attributes for the global transfer market- Dibyanshu Patnaik, Harsh Praharaj, Kartikeya Prakash, Krishna Samdani * Towards data-driven football player assessment-Rade Stanojevic, Laszlo Gyarmati | Done  Done |  |
| **Mentor’s Signature & Marks:** | | | | |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** | | | | |
| **Week No: 3 Date of Meeting: 26–08–2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Discussion**  **Requirement gathering** | Conducted further discussions to confirm the deliverables and timeline of the project.  Further analysis was done to determine the technologies and software to be used for the project.  Requirement gathering was done and extensive research was conducted on the various technologies that would go into developing this project.  For example, it was required to find out how to create a web application with trained machine learning models integrated into it. Thus, the Flask framework was considered and researched to deploy a machine learning algorithm using it. | | Done |  |
| **Mentor’s Signature & Marks:** | | | | |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** | | | | |
|  | | | | |
| **Week No: 4 Date of Meeting: 02-09-2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Discussion**  **Knowledge of data** | | Delegated work among the members for data gathering and analysis.  Various research papers and databases were explored to initially search for available data.  The available data was then studied and inferred whether they are suitable for the project.  In the end it was decided that the databases that update the information with LIVE statistics will be selected so that the planned webapp is useful all the time. | Done  Done |  |
| **Mentor’s Signature & Marks:** | | | | |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** | | | | |
| **Week No: 5 Date of Meeting: 09-09-2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Discussion**  **Model selection** | Understanding of various ML models  Research papers and various ML dedicated websites were referred to initially understand the purpose of each popular ML model.  Similarities between the desired data and the data on which the model has been used were searched.  Once the best models were picked each of them were studied to understand the functioning and the results obtained in past implementations. | | Done  Done |  |
| **Mentor’s Signature & Marks:** | | | | |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** | | | | |
| **Week No: 6 Date of Meeting: 16-09-2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Decision**  **List preparation**  **M1 preparation** | | Approval of all the team members were taken for the work done so bar and some changes/updates were discussed.  The written list covered the progress made so far from the technologies to the algorithms/architectures that were picked after careful research.  The documentation of the progress was in the form of a power point presentation that would also count in the internal marks for the current semester. The presentation is complete and saved. | Done  Done  Done |  |
| **Mentor’s Signature & Marks:** | | | | |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week No: 7 Date of Meeting: 23-09-2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Discussing and preparing a modified algorithm for one of the features** | | This proposed algorithm/model is to predict expected goals, which is just one feature of the project.  We will build this model and could use the xG statistic as input for the Poisson distribution to generate goal scoring probabilities that were combined into probabilities of a home, away, or draw outcome. | Done |  |

|  |
| --- |
| **Mentor’s Signature & Marks:** |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week No: 8 Date of Meeting: 30-09-2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Discussing and finalizing the proposed system and architecture of the App** | | The end product of our project is going to be a web app.  This detailed web app will provide a list of ML based functionalities from the world of football.  This list of functionalities included in the app included but are not restricted to – Predication of player’s market value, Form Prediction/Analysis, Expected Goals Prediction in a match situation and suggesting a player's best position based on his skills and attributes.  The primary aim of the app is to show stats on how teams have performed in betting markets, to help the user to find trends or make betting selections.  The app also includes predictions, in most of the main betting markets, and value bets.  The app will be free to download, but we plan to keep a paid subscription with additional features. | Done |  |

|  |
| --- |
| **Mentor’s Signature & Marks:** |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week No: 9 Date of Meeting: 07-10-2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Preparing the design and initial mock-up of the App** | | Prepared the initial design of the web application.  Also discussed the various modules of the app as well as their integration in the overall design of the application.  The mock-up of the app/webpage was finalized.  Also discussed the action plan for the project in the future. | Done |  |
| **Preparing for M2 presentation** | | The documentation of the progress up to this point was part of the M2 in the form of a project report that would also count in the internal marks for the current semester. The report is complete and saved. |  |  |

|  |
| --- |
| **Mentor’s Signature & Marks:** |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week No: 10 Date of Meeting: 16-10-2021** | | | | |
| **Planned Milestones** | **Discussion** | | **Status of Completion** | |
| **Done** | **Not Done** |
| **Submission of M2 report** | | The M2 report consisted of all the research and learnings up to that point. It included an overview of the domain of the project topic, a summary of the literature review conducted.  The proposed algorithms were discussed as well and the architecture, ER and module diagrams were shown.  A mock-up of the web application was also presented. | Done |  |

|  |
| --- |
| **Mentor’s Signature & Marks:** |
| **Project Team's Signature: (1):**  **(2):**  **(3):**  **(4):** |