System development project reports

Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976

**5**

PROJECT REPORT

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| --- | --- | --- | --- |
| **Date-Time:** | **2/2/2023 – 9:30** | **Location:** | **2N24/40** |
| **Attendance:** | **Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976** | **Absent:** | **-** |

STATUS OF PLANNED ACTIVITIES

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| --- |
| ***Planned accomplishments in this period:*** |
| * *Team choice* * *Anticipating using Python programming language* * *Anticipating using MySql for database* |

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| ***Planned but not carried out:*** |
| * *-* |

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| ***Planned actions for the next period:*** |
| * *Project choice* * *Project leader choice* |

PROJECT REPORT

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| --- | --- | --- | --- |
| **Date-Time:** | **6/2/2023 – 15:00** | **Location:** | **2N24/40** |
| **Attendance:** | **Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976** | **Absent:** | **-** |

*Project Leader: Jack Douet*

STATUS OF PLANNED ACTIVITIES

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| ***Planned accomplishments in this period:*** |
| * *Project choice* * *Project leader choice* * *Project aim identification* * *SMART* *objective outline* * *Decomposition diagram* |

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| ***Planned but not carried out:*** |
| * *-* |

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| ***Planned actions for the next period:*** |
| * *Functional Requirements* * *Nonfunctional Requirements* |

PROJECT REPORT

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| **Date-Time:** | **9/2/2023 – 9:30** | **Location:** | **2N24/40** |
| **Attendance:** | **Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976** | **Absent:** | **-** |

*Project Leader: Jack Douet*

STATUS OF PLANNED ACTIVITIES

|  |
| --- |
| ***Planned accomplishments in this period:*** |
| * *Functional Requirements* * *Nonfunctional Requirements* |

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| ***Planned but not carried out:*** |
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| ***Planned actions for the next period:*** |
| * *Requirement Tables and Priorities* |

PROJECT REPORT

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| **Date-Time:** | **13/2/2023 – 15:30** | **Location:** | **2N24/40** |
| **Attendance:** | **Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976** | **Absent:** | **-** |

*Project Leader: Sude Fidan*

STATUS OF PLANNED ACTIVITIES

|  |
| --- |
| ***Planned accomplishments in this period:*** |
| * *Requirement Tables and Priorities* |

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| ***Planned but not carried out:*** |
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| ***Planned actions for the next period:*** |
| * *Gantt Charts* |

PROJECT REPORT

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| **Date-Time:** | **16/2/2023 – 9:30** | **Location:** | **2N24** |
| **Attendance:** | **Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976** | **Absent:** | **-** |

*Project Leader: Sude Fidan*

STATUS OF PLANNED ACTIVITIES

|  |
| --- |
| ***Planned accomplishments in this period:*** |
| * *-* |

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| ***Planned but not carried out:*** |
| * *-* |

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| ***Planned actions for the next period:*** |
| * *Diagrams* * *Database design* * *Test cases* * *Wire frames* |

PROJECT AIM

Creating a web-based dashboard for updating the market value of football players. Reading data from games to influence the players’ value and have a prediction on how they will perform in the future games. Our efficient web-based system will also predict potential transfer value of players.

PROJECT PLANNING

1. **DESIGN PHASE**

* Wire frames
* Database design
* UML diagrams
  + Class diagram
  + Sequence diagram
  + Use case diagram
  + Decomposition diagram
* Create test cases

1. **DATABASE OPERATION**

Convert csv into database

* + Populate the database

Using database data to populate html pages

* + Mysql connector
  + Interaction with Flask

1. **ALGORITHM INTERPRETATION AND IMPLEMENTATION**

* Work out new transfer value from first value using given formula:
  + current weekly salary x weeks left in the current contract x win percentage rate
* Then work out new value based on the next five games given

1. **CREATING WEB INTERFACE**

* Creating static HTML/CSS pages
  + Base html page
  + homepage
  + player page
* Create dynamic Jinja elements
* Create Flask routes
* Create dynamic Javascript elements

SMART OBJECTIVES

1. Goal: Designing a user-friendly interface

* Specific: We will design a user-friendly interface that allows users to easily navigate the application, search for players, and view their statistics and market value.
* Measurable: We will design HTML/CSS pages that is user friendly.
* Achievable: We have some experience with web development as our first-year module and we all know how to use HTML/CSS, Flask and JavaScript.
* Relevant: A good user interface will make the application easier to use for user.
* Time-bound: We will complete interface design in 2 weeks.
* In order to create a more user-friendly experience for our application, we plan to design an interface that enables easy navigation, player searching, and access to statistics and market values. Our goal is to design HTML/CSS pages that are intuitive and easy to use, which we believe is achievable given our previous experience with web development and knowledge of relevant programming languages such as Flask and JavaScript. Ultimately, we believe that designing a more user-friendly interface will improve the overall experience of our application and make it more accessible for users. We aim to complete the interface design within two weeks. (SUGGESTION)

1. Goal: Perform exact calculation for market values
   * Specific: We will ensure that the market value and transfer fee of a player are calculated accurately based on the available data
   * Measurable: We will calculate the market value from the given formula:

current weekly salary x weeks left in the current contract x win percentage rate.

* + Achievable: We have database values and formula available then will use calculator to check our calculations.
  + Relevant: Inaccurate results would not be useful for end user.
  + Time-bound: We will complete this goal in 2 weeks.
  + To accurately calculate the market value and transfer fee of a player based on available data, we will use the given formula: current weekly salary x weeks left in the current contract x win percentage rate. Using the available database values and formula, we will cross-check our calculations with a calculator to ensure their accuracy. Since inaccurate results would be of no use to the end user, we will maintain accuracy. We aim to have this objective completed within a two-week period. (SUGGESTION)

1. Goal: Perform exact calculation for impact of game results on a player’s potential transfer value
   * Specific: We will ensure that each game accurately changes the market value of team players.
   * Measurable: We will calculate the market value after each game.
   * Achievable: We can use calculator to check our calculations with given results of each game.
   * Relevant: Inaccurate results would not be useful for end user.
   * Time-bound: We will complete this goal in 2 weeks.
   * To ensure accurate adjustments to the market value of team players after each game and measure the impact of game results on a player's potential transfer value, we will calculate the market value after each game and use a calculator to cross-check the accuracy of our calculations. Maintaining accuracy is important since inaccurate results would not be useful for the end user. We aim to complete this objective within a two-week period. (SUGGESTION)
2. Goal: Achieving program efficiency and readability
   * Specific: We will ensure that data is handled efficiently and that Pythonic development conventions are followed throughout the programme.
   * Measurable: We will peer review each other’s code.
   * Achievable: We will take advantage of tools available in gitlab to ensure that our peer reviews are completed.
   * Relevant: Inefficient program would not be useful for client and unreadable code would be difficult to work with for programmers.
   * Time-bound: We will complete the program in 12 weeks.
   * To achieve program efficiency and readability, we will handle data efficiently and follow Pythonic development conventions. Peer reviews of each other's code will be conducted using tools available in GitLab to ensure that the objective is achievable. An inefficient program or unreadable code would not be useful for clients or programmers, respectively. The program will be completed in 12 weeks, providing a time-bound framework for accomplishing this objective. (SUGGESTION)

FUNCTIONAL REQUIREMENTS

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| Requirement ID | Priority | Description | Rationale |
| FR-01 | MUST | Creating a website. | The project description is asked for a web-based application. |
| FR-02 | MUST | Accurate calculation for market value of each player. | Application would be useless without correct calculations. |
| FR-03 | MUST | Displaying the variation of the impact of game results on a player’s potential transfer value. | Application would be useless without correct calculations. |
| FR-04 | MUST | Reading data of game results from CSV file. | Calculations impossible without data |
| FR-05 | MUST | Changing player’s transfer value after each game. | Application would be useless without correct calculations. |
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NONFUNCTIONAL REQUIREMENTS

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| Requirement ID | Priority | Description | Rationale |
| NFR-01 | MUST | Response Time:  Doing calculation in under a second. | Would make for a better user experience if everything on the website loaded quickly. |
| NFR-02 | MUST | Security:  Validate user input | To ensure the website is compliant with current security guidelines, data must be handled in a secure way and to ensure the website is secure from cyber threats |
| NFR-03 | MUST | Security:  Sanitise user input | Prevents the user from committing any SQL injection attacks on the database through the search function. |
| NFR-04 | MUST | Accessibility:  Being accessible to wide range of user backgrounds. This includes disabilities, languages, etc. | Users with different accessibility needs will be using the website therefore we need to make sure its accessible. |
| NFR-05 | MUST | Responsive Design:  Website adapts layout depending on viewport used | The website should be able to be viewed on many different devices for greater portability, accessibility and responsiveness |
| NFR-05 | MUST | Bootstrap:  Use of bootstrap throughout all pages | Allows for easier development and a more consistent look with a better-looking UI |
| NFR-06 | MUST | Portability:  Website works on different browsers | Allows a wider userbase by catering to users across a plethora of setups. |
| NFR-07 | SHOULD | Reading data of game results from database | Will allow for adding new players with greater ease and grant better long-term storage |
| NFR-08 | COULD | Scalability:  Design UI to handle larger datasets Design systems to process larger volumes of data | In a real-world implementation this would allow for real-life data to be used. |
| NFR-09 | COULD | Search:  Allows indexing of database to search for a specific player | Would allow the website to be more user friendly. Instead of having to manually look through all players, the user can search for them instead. |
| NFR-10 | WON’T HAVE | Account System:  Allow users to login and save certain preferences/player data | Out-of-scope of project: User does not have to have account to use website. |
| NFR |  |  |  |
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