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|  | ISTANBUL AYDIN UNIVERSITY  FACULTY OF ENGINEERING  GRADUATION PROJECT INTERIM REPORT |

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| **Project Title** | Classifying MR images and Detecting Tumors using ANNs in Image Processing, and The Contribution of Ensemble Techniques to Accuracy Rate | |
| **Project Team** | Sukru Bora KARAKUS (Team Lead) – Software Engineering – B1905.090021  Ismail EZA – Software Engineering – B1905.090045 | |
| **Date of Report** | 29.12.2023 | |
| **Timeline and**  **Current Project Phase** | October |  |
| November |  |
| December |  |
| January |  |
| February |  |
| March |  |
| April |  |
| May |  |
| June |  |

**Objectives Achieved in this Period:**

(Write whatever you have completed and achieved to the date)

* Research has been conducted on the classification of MRI images.
* The search for datasets suitable for classification has begun.
* Previously used Artificial Neural Network (ANN) models in research were examined.
* An ANN model for image classification was selected, and a roadmap was developed.

**Challenges and Solutions:**

* Challenge 1: Understanding medical terms while researching the classification of MRI images was difficult.
* Solution 1: Previous projects in this field were reviewed, eliminating the need to understand medical terms.
* Challenge 2: Difficulty in accessing a dataset of suitable size and containing multiple classes.
* Solution 2: A "Brain Tumor MRI" image dataset with approximately 7,000 data points was found on Kaggle.com.
* Challenge 3: Issues such as long training times due to the complexity of the selected models or problems like overfitting were encountered.
* Solution 3: We improved the model's performance by implementing solutions such as simplifying the model or using more effective optimization settings.

**Plan for Making this Application into an Industrial Product**

1. **Identifying Target User and Needs Analysis:**
   * Identify target users and understand their needs.
2. **Competitor Analysis and Creating Distinction:**
   * Research similar products in the market.
   * Create unique and distinctive features compared to competitors.
3. **Security and Usability:**
   * Enhance security measures to comply with standards and build user trust.
   * Prioritize data privacy and guard against data breaches.
4. **User Interface Convenience:**
   * Develop a user-friendly interface. (We don’t develop on graduation Project.)
   * Create an interface that is easy to understand and does not burden users, conducting thorough testing.
5. **Performance:**
   * Ensure the product is scalable and ready for growth.
   * Optimize system performance and capacity through performance testing.
6. **Demo Application and Reviewing Feedback:**
   * Present a demo version to a specific user base to gather feedback.
   * Make improvements and adjustments based on user feedback.
7. **Marketing and Advertising:**
   * Promote the product in the intended market and create an advertising strategy.
   * Provide potential customers with documents and demo applications proving the project's performance.
8. **Sales Strategy:**
   * Determine the product's value relative to competitors and identify sales channels.
   * Develop a sales strategy.
9. **Updates and User Support:**
   * Continuously add new features to the product in line with current technologies.
   * Provide user support promptly, identifying and resolving issues.

**Attachments:**

* **Project Management Plan (PMP)** (Prepare this as a different document by 29th December 2023 and submit!)

Contents of the PMP is as follows:

1. **Project Scope**: Define the boundaries of the project. Include what is part of the project and what is not (scope exclusions). This sets the foundation for what the project will achieve.
2. **Project Objectives**: State the specific objectives the project aims to achieve. These should be clear, measurable, and aligned with the overall goals of the organization.
3. **Literature Research**: Document any existing literature, research, or studies that are relevant to the project. This can include academic papers, industry reports, or similar projects.
4. **Project Constraints**: Identify limitations that the project might face, such as time, budget, resources, technology, and regulatory constraints.
5. **Project Organization**: Outline the organizational structure of the project team. Define roles and responsibilities for each team member to establish clear accountability.
6. Stakeholder List: List all parties interested in or affected by the project, including clients, team members, suppliers, and investors. Understanding stakeholders is key to successful project delivery.
7. **Project Life Cycle and SDLC Model**: Describe the phases your project will go through from initiation to closure. If it’s a software project, specify the Software Development Life Cycle (SDLC) model being used (e.g., Agile, Waterfall).
8. **Project Milestones**: Identify major milestones and their expected completion dates. Milestones are significant checkpoints or goals in the project timeline.
9. **Project Methodologies and Standards**: Specify the methodologies and standards that will guide the project work. This could include specific project management methodologies (like PRINCE2 or PMBOK) or industry standards relevant to the project.
10. **Work Breakdown Structure (WBS)**: Create a detailed breakdown of the project into smaller, more manageable components or work packages.
11. **Project Schedule**: Develop a comprehensive schedule that outlines when and how project tasks will be completed. Tools like Gantt charts can be used here.
12. **Budget and Cost Management Plan**: Detail the project’s budget and how costs will be managed. This should include cost estimates for each aspect of the project and a plan for tracking expenses.
13. **Closure Criteria**: Define what criteria must be met for the project to be considered complete. This ensures all stakeholders have a common understanding of what project success looks like.
14. **References**: Include any references or sources cited in the preparation of the PMP. This could include documents, websites, or any other resources used.

Remember, a PMP is a living document that might need updates as the project evolves. It's essential to keep it updated and relevant throughout the project lifecycle.

**Please read the document thoroughly before asking, PLEASE….**

**If possible, never ask questions about this! Because you will be a software engineer soon, you are not a kid, learn yourself, struggle to learn, discover yourself…**

**If you dare to ask 😊 please DO NOT ask questions in WhatsApp directly to me, ask in our group.**

**IMPORTANT WARNING**

**Do NOT use AI-generated text (including ChatGPT or other AI tools) to complete any portion of this homework assignment. Your work should be entirely your own. Using AI-generated text will be considered a violation of academic integrity and will result in a dramatic decrease in your score for this assignment.**

**I will use tools to detect AI generated text!**