Duration and Effort Report

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**1.Introduction**

This document provides a detailed overview of the time allocation and workload estimation for the development of a Turkish joke-generating language model using PyTorch. The report outlines the project timeline, individual and team effort, and the estimated hours for key project activities. The methodology follows an Agile Scrum framework, ensuring iterative development, team collaboration, and adaptive planning throughout the process.

**2. Project Timeline and Phases**

The total project duration is **8 weeks**, divided into **4 Sprints**, each lasting **2 weeks**. Each sprint includes specific milestones and deliverables aligned with Agile principles.

| **Sprint** | **Timeline** | **Main Objectives** |
| --- | --- | --- |
| Sprint 1 | Week 1 – Week 2 | Project scope definition, dataset acquisition, and initial preprocessing |
| Sprint 2 | Week 3 – Week 4 | Tokenization, vocabulary creation, and model architecture design |
| Sprint 3 | Week 5 – Week 6 | Model training, loss monitoring, and preliminary evaluations |
| Sprint 4 | Week 7 – Week 8 | Final evaluations (BLEU score, human evaluation), optimization, and documentation |

**3. Team Roles and Estimated Effort**

The team consists of six members, each assuming specific roles. The estimated weekly workload for each member ranges between 8 to 12 hours, depending on task complexity and assigned responsibilities.

| **Role** | **Estimated Weekly Effort** | **Total Effort (8 Weeks)** |
| --- | --- | --- |
| Product Owner / Scrum Master | 8 hours | 64 hours |
| Machine Learning Engineers | 10 hours | 80 hours per person |
| Data Specialist | 8–10 hours | 64–80 hours |
| Evaluation Lead | 8 hours | 64 hours |
| Documentation & Reporting | 6–8 hours | 48–64 hours |

**Overall Team Effort:** Approximately **450–500 total hours**

**4. Task-Based Effort Distribution**

The breakdown below estimates effort by task rather than role, ensuring a balanced distribution of workload across technical, research, and management responsibilities.

| **Task Description** | **Estimated Hours** |
| --- | --- |
| Project Planning & Team Coordination | 20 hours |
| Data Collection & Cleaning | 40 hours |
| Tokenization & Vocabulary Generation | 30 hours |
| Model Development (Architecture + Coding) | 80 hours |
| Model Training & Fine-Tuning | 70 hours |
| Evaluation (BLEU, Human Assessment) | 50 hours |
| Ethical Considerations & Bias Analysis | 20 hours |
| Final Reporting & Documentation | 40 hours |
| Presentation Preparation | 20 hours |
| Total | **370–400 hours** |

**6. Risk Management**

Some phases such as model training and evaluation are subject to variability due to hardware constraints and model convergence challenges. Buffer time has been implicitly included in later sprints to accommodate possible delays or retraining.

**7. Evaluation Criteria**

Model success is defined by quantitative BLEU scores and qualitative human evaluations. Benchmarks include a BLEU score > 0.3 and >60% humor approval rate among human evaluators.

**8. Assumptions and Constraints**

Constraints include limited dataset size, compute time limitations, and part-time availability of team members. Assumptions are made to provide a realistic yet ambitious project timeline.

* Team members are full-time students; effort estimation assumes part-time project involvement.
* Training and experimentation are dependent on limited computing resources (e.g., Google Colab).
* The dataset consists of approximately 1500 Turkish jokes, which restricts model complexity.
* Ethical considerations regarding humor, bias, and cultural sensitivity are prioritized in evaluation.

**9. Conclusion**

This report outlines a structured and realistic estimation of the time and effort required for the successful completion of the Turkish Joke Generator project. With clear sprint planning, defined responsibilities, and balanced task allocation, the team is well-positioned to deliver a working prototype within the allocated timeframe.