T.C. MALTEPE UNIVERSITY FACULTY OF ENGINEERING AND NATURAL SCIENCES DEPARTMENT OF SOFTWARE ENGINEERING

SE40301 Software Project Management Project

Test Case Report

GiggleLab: Artificial Intelligence Based Joke Generator

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Project Overview

This report outlines the testing approach and test cases for **GiggleLab**, an AI-based Turkish joke generation system. The project includes a Python backend script that handles joke selection and output, a frontend developed using HTML, CSS, and JavaScript, and a structured dataset (`fikra_dataset.json`) of culturally appropriate Turkish jokes. No external LLM API was used; instead, the responses are drawn from a curated dataset through custom logic defined in Python.

System Components

1. **Backend:** Python scripts (`main.py`, `fikra_llm.py`) that serve jokes via internal logic, using a structured JSON joke database
2. **Frontend:** Web interface developed with HTML, CSS, and JavaScript
3. **Dataset:** `fikra_dataset.json`, containing 1000+ categorized Turkish jokes (cleaned and filtered)

Test Environment

Hardware Requirements:

- Any modern personal computer (no GPU required)
- Minimum: 4 GB RAM
- Recommended: 8 GB RAM

Software Requirements:

- Python 3.8+
- Flask (optional for hosting)
- Web browser (Chrome, Firefox)

- VS Code or similar IDE

Test Cases

1. Backend Functionality Tests

TC-B01: Basic Script Execution

Verify that the script (`main.py`) executes without errors

- **Expected:** Joke is selected and displayed from dataset
- **Result:** Pass

TC-B02: Custom Prompt Handling

(If using prompt-based selection/filtering)

- **Expected:** Relevant joke is returned
- **Result:** Pass

TC-B03: Dataset Integrity

- **Expected:** Jokes are complete, properly formatted (no null/empty fields)
- **Result:** Pass

TC-B04: Audio File Reference Check

- **Expected:** Audio files exist and are correctly mapped
- **Result:** Pass

2. Model Output Quality Tests

TC-M01: Joke Relevance

- Prompt triggers joke display with related content
- Pass

TC-M02: Content Appropriateness

- No adult, offensive, or political content
- Pass

TC-M03: Turkish Language Quality

- Jokes are grammatically and culturally coherent
- Pass

TC-M04: Humor Effectiveness

- Evaluated by 3+ Turkish speakers
- Target humor rating ≥ 3.0
- Pass

TC-M05: Cultural Context

- Jokes reflect Turkish values, themes, idioms
- Pass

3. Performance & Resource Tests

TC-P01: Memory Usage

- Memory usage is < 300MB during local execution
- Pass

TC-P02: Response Time

- Joke delivered in < 1 second on average
- Pass

TC-P03: Consecutive Execution Stability

- System handles multiple interactions without error
- Pass

4. Frontend Integration Tests

TC-F01: API or Script Communication

- Frontend retrieves joke and audio properly
- Pass

TC-F02: User Input Handling

- Button clicks trigger content
- Handles empty/invalid click states
- Pass

TC-F03: Response Rendering

- Long jokes wrapped or scrollable
- Pass

TC-F04: Responsive UI

- Layout adjusts on mobile, tablet, and desktop
- Pass

Test Data – Sample Prompts

Although the dataset is not prompt-based like LLMs, prompts can be simulated for filtering or UX testing:

- “Fıkra anlat” (basic display)
- “Temel fıkrası”
- “Bayram fıkrası”
- “Kısa bir fıkra”
- “5 cümlelik fıkra”
- “Çocuklarla ilgili fıkra”