

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

**SE40301 Software Project Management Project**

**Project Report**

**GiggleLab: Artificial Intelligence Based Joke Generator**

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# **1. Scope of the project**

## **1.1 Project Objective**

The objective of the GiggleLab project is to develop a culturally sensitive, AI-assisted joke generation platform that delivers humorous Turkish jokes through a browser-based interface. The aim is to explore how AI can enhance entertainment in natural language generation without relying on large-scale LLM APIs.

## **1.2 Project Components and Goals**

* **Frontend:** Developed in HTML, CSS, JavaScript – responsible for user interaction
* **Backend:** Built with Python – serves jokes and controls logic
* **Dataset:** Curated collection of Turkish jokes in fikra\_dataset.json
* **Audio Module:** Randomized .mp3 laughter playback upon joke delivery
* **Objective:** Provide an accessible, engaging, and culturally relevant humor experience

# **2. Functionality of the project**

## **2.1 Core Functionalities**

* Display Turkish jokes from a structured JSON dataset
* Play one of multiple random laugh audio clips
* Simple and responsive interface with a click-to-generate-joke button
* Compatible with modern desktop and mobile browsers

## **2.2 Unique or Distinguishing Features**

* Offline dataset instead of LLM or API integration
* Multi-sound audio response for engaging UX
* Clean and ethical content filtering in dataset preparation
* Fully frontend-driven design for speed and simplicity

## **2.3. The Functions Available at the Beginning of the Project**

* Basic HTML and CSS layout
* Static joke display (no backend integration)
* Single audio file manually linked to the joke

## **2.4. Functions Added During the Development**

* Full JSON dataset integration via Python backend
* Random audio player for laugh tracks
* UI styling with custom CSS animations
* Input/output sanitation and error handling
* Compatibility enhancements for multiple browsers

**3. Missing Parts**

* **Use of GPT-4 API**: Initially considered, but omitted to avoid dependency on third-party APIs
* **Prompt Input from the User**: Fixed joke delivery; no open-ended prompt functionality added
* **Joke Categories or Themes**: All jokes presented randomly; no categorization or filtering by type
* **User Feedback or Joke Storage via Database**: No backend DB integration for storing or rating content

# **4. Design Documents**

## **4.1 Use Case Diagram**

* **Actor:** User
* **Use Cases:** Generate joke, Hear laugh, Interact with button

## **4.2 Sequence Diagram**

* User → Button → JS → Python script → Fetch joke/audio → Return joke/audio → Display

## **4.3 Activity Dıagram (Backend Logic)**

* Button click → Random joke retrieval → Audio selection → Response delivery

## **4.4 Frontend Interface (UI Design)**

* HTML/CSS structure with button element, styled joke area, and embedded audio functionality

# **5. Deployment**

## **5.1 System Requirements**

Any browser, Python 3.8+, Any OS, No GPU needed

## **5.2 Project Structure Overview**

## **5.3 Backend Setup**

### **Clone the Repository**

### **Install Required Packages**

### **Login to Hugging Face**

### **Run the FastAPI Server**

## **5.4 Frontend Setup**

* Open index.html in any browser
* No build tools or compilation required

## **5.5 Model Deployment Logic**

No external model used; joke selection and logic handled internally via Python scripts

## **5.6 Additional Notes**

## **5.7 requirements.txt**

# **6.** **Responsibilities for each iteration**

Write the tasks and responsibilities for each iteration in the following table. Also provide graphics which show estimated times and actual implementation times.

## **6.1 Iteration Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **iter no/ developer** | **Berkay Şahin** | **Selin Bingöl** | **Beyza Çelebi** | **Mustafa Öztürk** |
| **Iter 1** |  |  |  |  |
| **Iter 2** |  |  |  |  |
| **Iter 3** |  |  |  |  |
| **Iter 4** |  |  |  |  |

## **6.2 Estimated vs Actual Effort**

[**Trello**](https://trello.com/invite/b/67c0162cdda391ca2caa9a0c/ATTI51ea9a9b757cdafa6410cd7a8eb04e242649888D/team-5)

# **7. Risk management**

### **Risk Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| D | Risk Description | Likelihood | Impact | Risk Level | Mitigation Strategy |
| R1 | Dataset contains biased or low-quality jokes | Medium | High | High | Enhance data preprocessing and gather jokes from diverse, verified sources |
| R2 | Model generates inappropriate/offensive jokes | Medium | High | High | Apply filtering algorithms and moderation flags |
| R3 | Generated jokes are not funny or meaningful | High | Medium | High | Improve dataset structure and use feedback-based review |
| R4 | Frontend crashes on certain browsers | Low | Medium | Medium | Cross-browser testing and responsive CSS design |
| R5 | Backend responds slowly or halts | Medium | Medium | Medium | Optimize script logic and monitor system resource usage |
| R6 | Legal issues from copyrighted joke content | Low | High | Medium | Use only public domain or ethically cleared data |
| R7 | Malicious user input affects display | Medium | High | High | Sanitize inputs and validate frontend/backend requests |
| R8 | Audio playback fails on mobile | Medium | Medium | Medium | Convert to MP3 and test on common mobile browsers |
| R9 | Team miscommunication | Medium | Medium | Medium | Weekly check-ins and Trello usage |

# **8. Tests**

## **Test Case Table**

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID | Description | Expected Result | Status |
| TC-01 | Button click generates a joke | New joke displayed from dataset | Pass |
| TC-02 | Audio playback after joke | One random laugh sound plays | Pass |
| TC-03 | Page loads in Chrome and Firefox | UI renders properly and functions as expected | Pass |
| TC-04 | Long joke formatting | Text wraps or scrolls appropriately | Pass |
| TC-05 | Backend handles request | No crash, returns expected JSON structure | Pass |
| TC-06 | Empty or spam click handling | UI stays stable; joke does not repeat constantly | Pass |
| TC-07 | HTML/CSS responsive design | Layout adjusts on mobile screens | Pass |

# **9. Experience Gained**

## **Berkay Şahin**

## **Selin Bingöl**

## **Beyza Çelebi:**

I was responsible for the frontend development of the project. I began by determining the essential requirements and conducted research accordingly. Using Figma, I designed the layout and user interface of the application, learning how to translate conceptual designs into practical web components. This process helped me understand how a project layout should be constructed and allowed me to visualize and plan the interface effectively. I then converted these Figma designs into working code using HTML, CSS, and JavaScript. This project significantly enhanced my ability to convert UI prototypes into real-world interfaces and gave me insight into integrating frontend elements with Python-based backends.

## **Mustafa Öztürk**

# **11. Project Repository**

[Github](https://github.com/Maltepe-University-SWEng/term-project-team-5)

# **12. References**