

IELTS Speaking Test - Project Documentation

Project Overview

This is a web-based **IELTS Speaking Test Simulation** that allows users to practice speaking English with **real-time transcription, automated feedback, and PDF report generation**.

The application consists of:

- **Practice Mode:** Provides instant feedback on fluency, grammar, pronunciation, and vocabulary.
- **Test Mode:** Simulates an actual IELTS speaking test with different sections and generates a downloadable report.

The application is built using:

- **FastAPI** (Backend)
- **JavaScript (Frontend)**
- **Speech Recognition**
- **PDF Generation (ReportLab)**
- **GitHub** for version control

Dependencies

Before running the project, ensure you have the following dependencies installed:

Python Libraries

Run the following command in your terminal to install all required libraries:

```
pip install fastapi uvicorn speechrecognition pydantic reportlab
```

Explanation of Dependencies

- **FastAPI** - Web framework for building APIs.
- **Uvicorn** - ASGI server for running FastAPI.
- **SpeechRecognition** - Converts speech to text.
- **Pydantic** - Data validation for FastAPI.
- **ReportLab** - Generates PDFs for test reports.

System Requirements

- Python **3.8 or later**
- Git (for version control)
- A microphone (for speech input)

Installation Steps

Follow these steps to run the project locally:

Step 1: Clone the Repository

Open your terminal and run:

```
git clone https://github.com/daxosmc/ielts-speaking-test.git
cd ielts-speaking-test
```

Step 2: Create a Virtual Environment

```
python -m venv venv
source venv/bin/activate # Mac/Linux
venv\Scripts\activate   # Window
```

Step 3: Install Dependencies

```
pip install -r requirements.txt
```

Step 4: Run the FastAPI Server

```
uvicorn main:app --reload
```

The server will start at <http://127.0.0.1:8000>

Open the browser and go to <http://127.0.0.1:8000>

GitHub Setup & Version Control

If you need to **push this project to GitHub**, follow these steps:

Step 1: Initialize Git

```
git init
```

Step 2: Configure Git User

```
git config --global user.name "Your Name" git config --global  
user.email "your-email@example.com"
```

Step 3: Add Files and Commit

```
git add . git commit -m "Initial commit"
```

Step 4: Connect to GitHub

```
git remote add origin  
https://github.com/daxosmc/ielts-speaking-test.git git branch -M main  
git push -u origin main
```

Running the Application

1. Start the FastAPI backend:

```
uvicorn main:app --reload
```

1. Open the browser and go to `http://127.0.0.1:8000`
2. **Select a mode** (Practice/Test).
3. **Answer the questions** using your microphone.
4. **Download your report** after completing the test.

Troubleshooting

1. "git: command not found"

- **Solution:** Install Git from git-scm.com

2. "ModuleNotFoundError: No module named 'fastapi'"

- **Solution:** Run `pip install fastapi uvicorn` to install missing dependencies.

3. "Failed to generate PDF report"

- **Solution:** Ensure that the `generated_reports/` directory exists.

4. "Transcription not working"

- **Solution:** Check if your microphone is properly configured and permissions are enabled.

Conclusion

This **IELTS Speaking Test Simulator** provides a simple and effective way for users to practice speaking English. With real-time transcription and automated feedback, it helps users improve their fluency and pronunciation.

Acknowledgments

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- **FastAPI Community**
- **Python Developers**

- **ReportLab for PDF generation**