

Interview IT

Software Requirements Specification

Abdulmunim Jundurahman

.

Aug 20, 2024

Revision History

Date	Description	Author	Comments
20/08/2024	Version 1 – Initial Draft	Abdulmunim	Initial Draft of Requirement Analysis for the Project “Interview IT”

Table of Contents

1. INTRODUCTION1

1.1 PURPOSE..... 1

1.2 SCOPE 1

1.3 OVERVIEW 1

2. GENERAL DESCRIPTION2

2.1 PRODUCT PERSPECTIVE..... 2

2.2 PRODUCT FUNCTIONS..... 2

2.3 USER CHARACTERISTICS..... 2

2.4 GENERAL CONSTRAINTS 3

3. SPECIFIC REQUIREMENTS3

3.1 EXTERNAL INTERFACE REQUIREMENTS..... 3

3.1.1 User Interfaces 3

3.1.2 Hardware Interfaces 4

3.1.3 Software Interfaces 4

3.1.4 Communications Interfaces 4

3.2 Functional Requirements 5

3.2.1 Functional Requirement or Feature #1: Interview Simulation 5

3.2.2 Functional Requirement or Feature #2: Real-Time Feedback..... 5

3.3 USE CASES 6

3.3.1 Use Case #1: Conducting an Interview 6

3.3.2 Use Case #2: Reviewing Performance 6

3.4 NON-FUNCTIONAL REQUIREMENTS 7

3.4.1 Performance 7

3.4.2 Reliability 7

3.4.3 Availability..... 7

3.4.4 Security..... 7

3.4.5 Maintainability.....	7
3.4.6 Portability.....	7
3.5 INVERSE REQUIREMENTS.....	7
3.6 DESIGN CONSTRAINTS	8
3.7 LOGICAL DATABASE REQUIREMENTS	8
3.8 OTHER REQUIREMENTS	8

1. Introduction

1.1 Purpose

The purpose of this document is to outline the Software Requirements Specification (SRS) for "Interview IT," an AI-based interviewer tool designed specifically for the Information Technology (IT) sector. The primary objective of "Interview IT" is to simulate real technical interviews, providing users with a realistic, interactive environment to prepare for job interviews in the IT industry. This tool will help candidates improve their skills, build confidence, and gain insights into their strengths and areas for improvement. As this project is being developed iteratively, the document will evolve to reflect the addition of new features and functionalities over time.

1.2 Scope

The scope of this document is to define the requirements for the Minimum Viable Product (MVP) version of "Interview IT." The MVP will focus on core functionalities such as simulating technical interviews in specific IT domains, providing immediate feedback, and tracking user progress. The tool will initially be targeted towards IT professionals and job seekers, with plans to expand its features and user base in future iterations. This document will also outline the constraints, assumptions, and dependencies relevant to the project's development.

1.3 Overview

This document is structured to provide a comprehensive overview of the "Interview IT" project, covering both general and specific requirements. It includes sections on the product's perspective, functions, user characteristics, and constraints, followed by detailed descriptions of the external interfaces, functional and non-functional requirements, use cases, and design constraints. The document also addresses the change management process to ensure that the requirements remain aligned with the evolving needs of the project. Future updates to this document will reflect new features, enhancements, and any changes in project direction.

2. General Description

2.1 Product Perspective

"Interview IT" is an innovative tool designed to fill a gap in the current market for interview preparation tools, particularly in the IT sector. Unlike traditional interview preparation resources that often rely on static question banks or passive learning methods, "Interview IT" utilizes advanced AI technology to simulate real-time technical interviews. The tool aims to provide a dynamic, interactive experience, adapting to the user's performance and offering personalized feedback. As part of the initial release, the MVP will focus on specific IT domains such as software development, system administration, and data science, with the potential for expansion into other technical areas as the product evolves.

2.2 Product Functions

The MVP of "Interview IT" will include the following core functions:

- **Interview Simulation:** The tool will generate a series of technical questions based on the selected domain and difficulty level, mimicking the format and pressure of a real technical interview.
- **Real-Time Feedback:** Users will receive immediate feedback on their responses, including suggestions for improvement and explanations of correct answers.
- **Progress Tracking:** The tool will track user performance over time, allowing users to monitor their progress and identify areas where additional practice is needed.
- **Question Customization:** Users will have the option to customize the interview experience by selecting specific topics or programming languages relevant to their job search.

2.3 User Characteristics

"Interview IT" is designed primarily for IT professionals and job seekers looking to enhance their interview skills. The target audience includes:

- **Job Seekers:** Individuals preparing for interviews in various IT roles, ranging from entry-level to senior positions.
- **IT Professionals:** Those who wish to keep their technical skills sharp by regularly practicing interview-style questions.
- **Hiring Managers and HR Departments:** Organizations that may use the tool to assess potential candidates' technical abilities during the hiring process.

- **Educators and Trainers:** Institutions or instructors who may integrate the tool into their curriculum for teaching interview preparation techniques.

2.4 General Constraints

The initial development of "Interview IT" is subject to several constraints:

- **Limited Question Bank:** The MVP will have a limited set of interview questions, focusing on a few key IT domains. Expanding the question bank will be a priority in future updates.
- **Technology Stack:** The tool will be built using specific technologies (e.g., Python for AI, a web-based front-end framework, not decided yet) which may limit certain functionalities or integrations in the early stages.
- **User Load:** The MVP will be designed to support a limited number of concurrent users. Scalability will be addressed in later phases.
- **Data Privacy:** Strict measures will be in place to ensure the confidentiality of user data, especially given the personal nature of interview performance feedback.

3. Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

The user interface (UI) for "Interview IT" will be designed to be intuitive and user-friendly, catering to both technical and non-technical users. Key elements of the UI include:

- **Dashboard:** A central hub where users can access their profile, view their progress, and start new interview sessions.
- **Interview Screen:** A clean and minimalistic interface displaying interview questions, input fields for answers, and navigation controls.
- **Feedback and Analytics:** A section where users can review detailed feedback on their performance, including correct answers, explanations, and areas for improvement. Graphical representations of progress over time will also be included.

3.1.2 Hardware Interfaces

The tool will be primarily web-based, accessible via standard web browsers on desktop and mobile devices. As such, no specialized hardware interfaces are required beyond a device capable of running a modern web browser (e.g., Google Chrome, Mozilla Firefox, Safari).

3.1.3 Software Interfaces

"Interview IT" will integrate with the following software components:

- **AI Engine:** The core engine that generates interview questions and evaluates user responses, built using Python and AI frameworks.
- **Database:** A backend database to store user data, question banks, and performance metrics.
- **Authentication Service:** Integration with OAuth or similar latest authentication services for user login and secure access.

3.1.4 Communications Interfaces

The tool will require internet connectivity for the following:

- **Server Communication:** Real-time communication between the client (user interface) and the server (where the AI engine and database reside).
- **Third-Party APIs:** Potential integration with third-party services for extended functionalities, such as logging in through social media accounts or accessing additional content.

3.2 Functional Requirements

This section describes specific features of the software project. If desired, some requirements may be specified in the use-case format and listed in the Use Cases Section.

3.2.1 Functional Requirement or Feature #1: Interview Simulation

- **Description:** The system must allow users to simulate technical interviews by selecting a domain and difficulty level. The AI engine will generate questions based on the user's selection.
- **Input:** User selects domain and difficulty level.
- **Output:** Interview question is displayed, and user inputs are recorded.
- **Priority:** High

3.2.2 Functional Requirement or Feature #2: Real-Time Feedback

- **Description:** After each question is answered, the system must provide immediate feedback, including whether the answer was correct, an explanation, and a suggested approach if incorrect.
- **Input:** User submits an answer to the interview question.
- **Output:** Feedback is displayed on the screen.
- **Priority:** High

3.3 Use Cases

3.3.1 Use Case #1: Conducting an Interview

- **Actors:** User (Interviewee)
- **Preconditions:** User is logged in and has selected a specific IT domain and difficulty level.
- **Main Flow:**
 1. User starts the interview.
 2. The system presents the question.
 3. User inputs their answer.
 4. The system provides immediate feedback requesting real-time updates.
 5. User proceeds to improving the answer until they decide to submit or time is up.
- **Postconditions:** User completes the interview and views a summary of their performance.

3.3.2 Use Case #2: Reviewing Performance

- **Actors:** User (Interviewee)
- **Preconditions:** User has completed at least one interview session.
- **Main Flow:**
 1. User navigates to the performance review section.
 2. The system displays a summary of completed interviews, including scores and feedback.
 3. User views detailed analytics on their strengths and weaknesses.
 4. User decides on areas to focus on for improvement.
- **Postconditions:** User has a clear understanding of their performance and areas for improvement.

3.4 Non-Functional Requirements

Non-functional requirements may exist for the following attributes. Often these requirements must be achieved at a system-wide level rather than at a unit level. State the requirements in the following sections in measurable terms (e.g., 95% of transaction shall be processed in less than a second, system downtime may not exceed 1 minute per day, > 30 day MTBF value, etc).

3.4.1 Performance

- The system must generate interview questions and provide feedback within 3-6 seconds to ensure a smooth user experience.

3.4.2 Reliability

- The system must be highly reliable, with a target uptime of 99.5% or higher, ensuring users can access the service without interruptions.

3.4.3 Availability

- The service should be available 24/7, with minimal downtime for maintenance or updates.

3.4.4 Security

- User data, including personal information and interview results, must be securely stored and transmitted, following industry best practices for encryption and access control.

3.4.5 Maintainability

- User data, including personal information and interview results, must be securely stored and transmitted, following industry best practices for encryption and access control.

3.4.6 Portability

- The system should be accessible via various platforms, including desktop browsers and mobile devices, without requiring significant changes to the underlying codebase.

3.5 Inverse Requirements

The MVP will not include support for *non-technical interviews or domains outside the IT sector*. This will be considered for future iterations based on user demand.

3.6 Design Constraints

The initial version will be limited to a specific technology stack, primarily using Python for the AI engine and a web-based front-end framework (e.g., React or Angular). These choices will influence future design and scalability decisions.

3.7 Logical Database Requirements

The database must be capable of storing user profiles, interview question sets, responses, and performance data. It should be designed for scalability as the number of users grows.

3.8 Other Requirements

Legal and Compliance: The system must comply with relevant data protection regulations (e.g., GDPR for users in Europe) and ensure that all user data is handled with the utmost care.