



TAGUIG CITY UNIVERSITY



**JOBINT-HELPER: SKILL ENHANCER MOBILE APPLICATION WITH VOICE
RECOGNITION USING QUESTION FILTERING ALGORITHM FOR IT**

JOB INTERVIEW PREPARATION

A Thesis Presented to the Faculty of the Computer Science

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CHAPTER I INTRODUCTION

Project Context

The researchers are interested in developing and utilizing the current system. The researchers observed in news and some podcast of well-known developers that jobs in IT industry is so in-demand but the employment rate of students who graduated in IT related courses was so very low. According to Michelle Abad of Rappler. In a survey conducted from March 26 to 29, the SWS found that 69% or nearly 7 out of 10 Filipinos said it was difficult to find a job. Also, according to "Kuya Dev" a well-known developer in the Philippines said that a lot of IT Job seekers failed interviews because they're lack communication skills. So, the researchers found this study very interesting since they are currently 3rd year college student, and they are about to finish college. The researcher sought to develop an application that will enhance the communication and technical skills of undergraduates and fresh graduates' students of any IT related courses in order to prepare them in taking a job interviews.

After the student's graduate in college, they are most likely finding jobs in the market, they will look in the market or will scroll on the internet to look for a hiring, despite the job qualifications being unjustifiable such as 3-5 years of experience required for a simple entry-level job, unrealistic educational qualifications, age, and gender requirements. Fresh graduates often, before graduating college, practice their skills and communication for better acceptance in the company, as IT companies can be quite



selective when it comes to their hiring process, tending to be more strict with the qualifications they require from candidates - a reasonable approach, as many IT companies offer entry-level positions specifically for fresh graduates from IT or Computer Science (CS) programs, allowing new hires to not only apply their academic knowledge but also learn the specific work environment and processes of the company, providing them with the opportunity to gain practical experience and develop their skills while working in the IT industry, as IT companies often have specific requirements and needs that may not be fully addressed by a general academic curriculum, and by offering these entry-level roles, they can ensure that new hires are adequately prepared to contribute to the company's operations and projects, while also providing them with the necessary training and support to succeed in their roles. The researchers' project aims to provide multiple features to help fresh graduates of IT and CS to look for companies while providing already good results, while also allowing companies to look for the fresh graduates that are hardworking and can help them select the suitable employee for their company, as the app will help the user with their communication skills and technical coding skills and knowledge, while also providing algorithmic questions and necessary questions for the company to further inspect the user's knowledge and skills.

The core of the "JobInt-Helper" mobile application is a Question Filtering algorithm, which is ideally suited for the project's objectives. The Question Filtering algorithm helps filter interview questionnaire, and it used to process data by removing unwanted information based on specific criteria. In the context of search engines or recommendations, it can sort through a large dataset and filter out irrelevant results.



Fresh graduates of IT and CS can use this app for applying for jobs while also preparing them for a brighter future, this can gain them more and knowledge and understanding of what company will tackle, while also company can be reassured that the person who is applying for their job title can look further in the person who is applying for the job, the primary purpose of this app is to help people who are struggling to be ready for a job interview this app will help them and guide them to be prepare more voice and technical interview, while using our app we can support and help them for getting a new job and take next step of life

The app is designed to assist fresh graduates in IT and CS with job applications and preparation for interviews. It helps candidates gain knowledge about potential employers and prepares them for both voice and technical interviews. The primary goal is to support individuals in securing employment and progressing in their careers.

Purpose and Description

The purpose of this thesis is to create an application to help fresh CS and IT graduate to prepare them for job interview through voice recognition and technical question using Question Filtering and voice recognition.

Many fresh graduates are troubling looking for a job most are not ready and most got mental block, this paper will describe a mobile application that leverages artificial intelligence (AI) techniques to help fresh graduates from Computer Science (CS) and other IT related programs prepare for job interviews more effectively. The application will utilize voice recognition technology and a Question Filtering model to assess the user's



responses to common technical interview questions, providing valuable feedback and guidance to the user.

This thesis aims to address the challenges that many CS and IT related courses graduates face when transitioning from academia to the professional job market. The process of preparing for job interviews can be daunting, as it requires not only mastering technical concepts but also effectively communicating one's knowledge and problem-solving abilities.

The application will provide a comprehensive platform for interview preparation, combining voice recognition capabilities and a Question Filtering Algorithm to evaluate the user's responses to technical interview questions. The voice recognition feature will allow the user to practice their responses aloud, simulating a real interview environment, while the Question Filtering Algorithm will filter the questions that will going to answer by the users, providing feedback on their technical understanding, clarity of communication, and areas for improvement.

The application will offer a personalized and interactive experience for CS and IT graduates, empowering them to refine their interview skills, build confidence, and ultimately increase their chances of success in the job market.



Objective of the Study

General Objective

The general objective of this research is to develop the Job-Int Helper: a skill-enhancing mobile application with voice recognition that utilizes a question filtering algorithm to support IT job interview preparation.

Specific Objectives

The study specifically aims to develop and design a mobile application on with the following:

1. To assess the ability of the IT applicants before heading into an official interview.
2. To improve the communication skill level of IT applicants by providing resources as mock interviews question banks, and personalized feedback.
3. To develop an application that produce and recognize voice or audio using in answering the interview questions.
4. To develop an application that gives feedback to the answer of user from job interview questionnaire
5. To evaluate the application using the ISO 25010 with the criteria of functional suitability, performance efficiency, compatibility, usability, reliability, maintainability, and portability.



Conceptual Framework

The development of the conceptual models will help to completely understand the system. It shows the terminology and conceptual system of thinking.

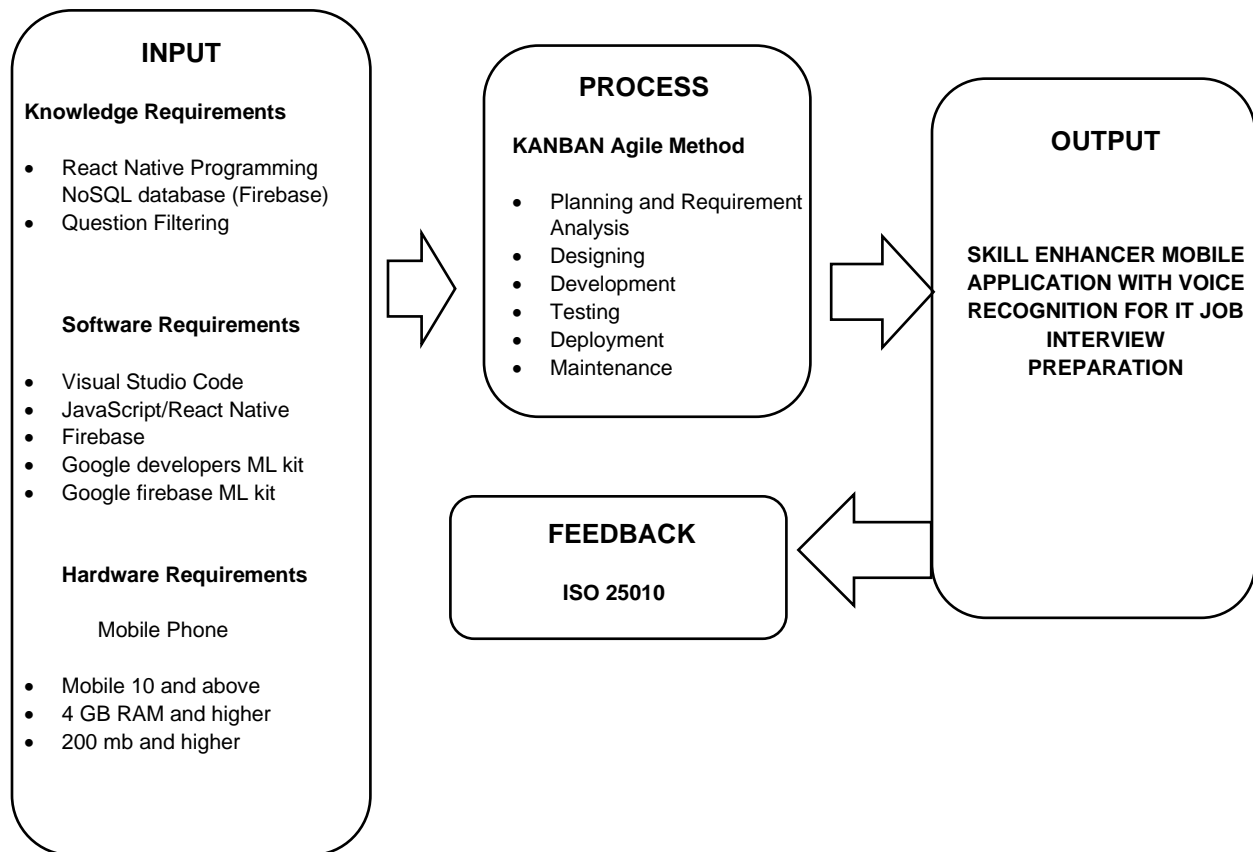


Figure 1: Conceptual Framework

Figure 1 shows the Conceptual Framework Model that explains the requirements needed to develop the application and the standard for evaluation to be used in the study. The model involves the input which include the knowledge, software and hardware requirements needed to develop the application. It also displays the process which the



research will going to use in the development of the application. And lastly it displays the output which will be the application.

Scope and Limitations

Scope

The research will mainly focus on the development of the Job-Int Helper: A Skill Enhancer Mobile Application with Voice Recognition using Question Filtering Algorithm for IT Job Interview Preparation. Our JobInt-Helper is a mobile application designed for IT job interview preparation, its featuring voice recognition technology and advanced algorithms for tailored assistance. And it covers technical and non-technical interview topics, catering to users of varying expertise levels.

Limitations

The application has several limitations. First, it is designed exclusively for mobile users, meaning it cannot be accessed on desktop or other non-mobile platforms. Additionally, the app is only compatible with devices running Android version 10 or higher and iOS version 11.1.1 or higher, restricting its use on older devices. Another limitation is that the application requires an active internet connection to function, so it cannot be used offline. Lastly, the accuracy of the voice recognition feature may be impacted by environmental factors, such as background noise or varying accents, which could affect the reliability of this functionality.



Significance of the Study

Given that the researchers of the study have been working to develop a system that will help undergraduate and fresh graduate students, the Job-Int Helper: A Skill Enhancer Mobile Application with Voice Recognition for IT Job Interview Preparation could serve as a model for academic success for both undergraduate and fresh graduate students. For them to perform well, this research may help them increase their preparedness to their future job interview.

Undergraduate Student – by providing a complete tool for improving their preparation for IT job interviews and giving them with vital skills and information required for success in today's competitive employment market.

Fresh Graduate Student – by providing a user-friendly platform for fresh graduate students to become acquainted with job interview procedures and technical questions early in their academic careers, allowing them to lay a solid basis for future career efforts.

Future Researchers – This study can provide to the future researchers about the application Job-Int Helper: A Skill enhancer Mobile Application with Voice Recognition for IT Job Interview Preparation Using Question Filtering. This will also serve as a platform for them to realize and understand the use of Question Filtering Algorithm.



Definition of terms:

Job-Int Helper: The name of the mobile application developed in this thesis to help persons, notably recent graduates of IT and Computer Science studies, prepare for job interviews in the IT business.

Skill enhancer: refers to a tool, platform, or application designed to improve or develop specific skills in users through various interactive methods, such as tutorials, exercises, simulations, or assessments.

Voice recognition: is a computer program's capacity to recognize and understand spoken words. In the Job-Int Helper program, voice recognition technology is used to assess users' spoken responses to interview questions.

IT Job Interview Preparation: The process of providing individuals with the essential skills, knowledge, and confidence to succeed in job interviews, particularly in the Information Technology (IT) business.

Question Filtering: Helps categorize and present relevant interview questions based on several factors, ensuring users get questions tailored to their needs

Undergraduate Student: A student who is enrolled in a bachelor's degree-granting university program but has not yet fulfilled all degree requirements. According to this data, the main users of the Job-Int Helper application are undergraduate students.



Freshmen Student: is referred to as a freshman. Those who are just starting their academic careers and who stand to gain from early exposure to job interview preparation using the Job-Int Helper application are referred to as freshman students in this context.

Technical Interview Questions: are designed to examine a candidate's technical knowledge, problem-solving skills, and ability to apply concepts important to the IT industry. The Job-Int Helper app contains a collection of such questions to help users practice and develop their skills.

ISO 25010: is an international standard for software quality standards and evaluation, outlining the qualities and sub-characteristics that characterize software quality. In this study, ISO 25010 criteria are utilized to assess the produced application's functional suitability, performance efficiency, compatibility, usability, dependability, maintainability, and portability.

Conceptual Paradigm: A model that depicts the key components, processes, and relationships of a system or study. In this thesis, the conceptual paradigm aids in comprehending the structure and functionality of the Job-Int Helper program.



CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter summarizes the relevant literature and studies on the topic at hand from many authors, journals, websites, and books that could aid in the development of the concept system: Skill enhancer Mobile Application with Voice Recognition

According to Li, Y., Zhang, Y., & Liu, Z (2023) in "A Novel Question Filtering Algorithm Based on Semantic Similarity and Relevance Analysis". It stated that a novel question filtering algorithm that effectively identifies relevant questions from a large dataset. The algorithm combines semantic similarity and relevance analysis techniques to ensure accurate filtering. Specifically, it employs a deep neural network model to extract semantic features from questions, and then calculates the similarity between the target question and each candidate question based on these features. This paper focuses specifically on the task of question filtering, making it highly relevant to our thesis. It also includes experimental results that can be used to compare the performance of different question filtering algorithms.

According to D. Ivanko et al. (2023), in their comprehensive review titled " A Review of Recent Advances on Deep Learning Methods for Audio-Visual Voice Recognition," they highlighted the significant progress made in audio-visual voice recognition (AVSR) from 2013 to 2023, highlighting the role of deep learning methods, particularly CNNs. It discusses how combining audio, and visual data can enhance voice recognition performance, especially in noisy environments. The review elaborates on various methodologies, datasets, and CNN-based architectures that have been employed



to improve AVSR. It underscores the importance of visual information, such as lip-reading, in complementing audio data to achieve higher accuracy in voice recognition systems. This paper provides a detailed overview of the state-of-the-art in AVSR and suggests future research directions (Mathematics, 2023).

According to Burns (2021), he stated that rapid integration of voice recognition technology into everyday life has prompted increasing interest in its application within professional settings. While its widespread use in personal devices is now commonplace, its adoption in business environments has been comparatively slower. However, recent developments suggest a growing recognition of its potential benefits, particularly in streamlining HR processes and enhancing recruitment practices. Despite initial apprehensions about the impact of AI on employment, studies such as the 2019 AI at Work report by Oracle and Future Workplace indicate a shift in attitudes among employees, with many expressing optimism and trust in AI-driven solutions. Voice recognition technology offers significant advantages for HR professionals, enabling tasks such as employee scheduling and data analysis to be performed more efficiently through voice commands. Tools like Ada have demonstrated the ability to reduce HR data query times substantially. Similarly, in recruitment, AI-powered voice technology shows promise for automating interview processes and evaluating candidate suitability based on spoken language cues. However, challenges such as candidate frustration and potential bias in automated processes remain areas of concern. Despite these challenges, there is a growing consensus among HR professionals regarding the potential of voice recognition technology to enhance workplace efficiency and employee engagement. Implementation



strategies typically involve starting small and leveraging existing voice-enabled platforms like Alexa or Google Assistant. As organizations adapt to post-pandemic work environments, the integration of voice recognition technology presents an opportunity to optimize productivity while maintaining essential human interactions.

According to Xu & Y (2022), it stated in their evaluation that growing significance of English proficiency in global economic exchange and cultural interaction, particularly in countries like China. It identifies challenges such as pronunciation differences and a lack of immersive language environments, emphasizing the increasing demand for effective English learning solutions. Introducing deep learning technology as a potential remedy, the passage underscores its role in assessing English voice recognition and pronunciation quality objectively. Furthermore, it highlights the pivotal role of computer-aided language learning in addressing language acquisition hurdles, especially in speaking proficiency. Deep learning's evolution and its transformative impact on voice recognition technology are discussed, culminating in the proposal of an English voice recognition and pronunciation quality evaluation model leveraging deep learning techniques. The model's key evaluation indicators include pitch, rhythm, speed, and intonation, offering a comprehensive framework for assessing English language proficiency.

According to Kheddar, H., Hemis, M., & Himeur, Y. (2024). The recently published paper, A Survey on Automatic Voice Recognition with Deep Learning Approaches, explore automatic voice recognition (ASR) using advanced deep learning techniques. Automatic voice recognition (ASR) is a technology that converts spoken



language into text. It has numerous applications such as voice assistants, voice-to-text software, and automatic captioning. The paper acknowledges the challenges of ASR, including the need for extensive training data and the difficulty of adapting to new environments. To address these challenges, the authors delve into three advanced deep learning techniques: deep transfer learning (DTL), federated learning (FL), and reinforcement learning (RL). They then compare these approaches and highlight areas for future research.

According to Samonte (2019), he tackled the integration of voice recognition technology and Filipino Sign Language (FSL) in educational settings represents a significant advancement in facilitating learning for students, particularly those with physical disabilities. This study underscores the potential benefits of such technologies, emphasizing their role in promoting efficient learning processes in classrooms. By providing deaf students with diverse methods for studying, learning, and retaining new information, including voice-to-text and voice-to-visual approaches, the developed system offers innovative solutions for inclusive education. Moreover, the incorporation of FSL as an alternative means of presenting Statistics lessons within the K-12 curriculum demonstrates a commitment to accommodating diverse learning needs. Through practical real-world applications and a balance of multiple learning strategies, this research strives to enhance the delivery of Statistics lessons in both face-to-face and self-paced learning environments. Initial findings suggest a notable advantage of utilizing voice recognition and FSL over traditional methods, highlighting the potential for improved practice and recall among target users.



According to Balagtas, J.M., & Teodoro, M. (2020), in “Development of a Smart Question Recommendation System for E-Learning Platforms using Natural Language Processing (NLP)”. His paper explores the development of a question recommendation system tailored for e-learning platforms in the Philippines. It uses NLP techniques to analyze and filter questions relevant to students' learning paths, aiming to improve engagement and learning outcomes.

According to De Vera, J.P., & Mallari, M.C. (2019), in “Efficient Information Filtering System for Filipino Digital Libraries”. He presents a study on how question and content filtering can be applied to digital libraries, which include Filipino research articles. The algorithm prioritizes relevant questions based on keywords and user input, enhancing accessibility to information.

According to Navarro, R. A., Santos, P. C., & Silva, L. F. (2018), in “A Study on the Optimization of Information Retrieval and Question Filtering Techniques in Filipino-Language Online Systems”. He investigates question filtering and information retrieval systems that are tailored to local languages such as Filipino. It highlights challenges in NLP and proposes enhancements to algorithms that filter questions based on semantic understanding in Filipino language contexts.

According to Patrick D. Cerna (2023), Rhodessa J. Cascaró(2023), Khian Orland S. Juan(2023), Bon Jovi C. Montes(2023), Aldrei O. Caballero(2023) automatic Speech Recognition (ASR) technology has revolutionized human-computer interaction, enabling voice commands and dictation across various applications. However, this technology



often struggles with regional dialects due to unique pronunciations and vocabulary. This paper tackles this challenge by investigating ASR for the Bisaya dialect, a widely spoken language in the Philippines.

According to Xu, Liu, and Yin (2020), conversational dialog systems for skill enhancers have been extensively explored in recent years. These systems employ various techniques, including natural language processing and machine learning algorithms, to enable effective communication between users and skill enhancers. The survey delves into the methodologies, architectures, and applications of such systems, providing insights into their development and potential areas for improvement. The cited research is relevant to the thesis titled "JobInt-Helper: A skill enhancer mobile application with voice recognition for IT job interview preparation using Convolutional Neural Network Algorithm." This connection arises from the shared focus on skill enhancer technology. While the cited study explores conversational dialog systems in general, the thesis specifically targets the development of a skill enhancer application tailored for IT job interview preparation. Both works contribute to the understanding and advancement of skill enhancer technologies, albeit in different contexts.

According to Chen, Y., & Liu, Z (2022) in "A Hybrid Question Filtering Approach Based on Semantic Similarity and Topic Modeling". The paper stated that hybrid question filtering approach that combines semantic similarity and topic modeling techniques. The approach first extracts semantic features from questions using a deep neural network model. Then, topic modeling is applied to identify the underlying topics of the questions.



By considering both semantic similarity and topic relevance, the hybrid approach can effectively filter out irrelevant questions.

According to Lian, Junxiang & Sun, Lin. (2024), they discovered that utilization of skill enhancers, such as Google Assistant, Siri, and others, has garnered increasing attention in educational contexts, particularly in the domain of language learning, where English is taught as a second or third language. These skill enhancers leverage Artificial Intelligence (AI) and Natural Language Processing (NLP) to facilitate communication with users in natural languages. The evolution of these voice-enabled technologies has significantly reshaped the interaction between humans and digital information, particularly evident during periods of heightened reliance on remote learning, such as the COVID-19 pandemic. Studies, such as those referenced by Sáiz-Manzanares, Marticorena-Sánchez, and Ochoa-Orihuel (2020), underscore the emerging role of Intelligent Personal Assistants (IPA) in educational settings, highlighting their potential to enhance learning outcomes. By providing immediate and intuitive responses to natural language stimuli, skill enhancers offer a unique opportunity for language learners to practice pronunciation and enunciation through interactive dialogue. However, challenges such as limited access to personal smart devices and connectivity issues may impede the widespread adoption of these technologies in educational contexts. Nevertheless, the burgeoning interest in leveraging skill enhancers for language learning underscores the transformative potential of AI-driven tools in facilitating language acquisition and improving educational experiences for non-native English speakers. Further research in



this area should focus on exploring strategies to overcome implementation barriers and maximize the efficacy of skill enhancers as educational aids.

According to Wang, X., & Zhang, L (2021) in "A Context-Aware Question Filtering Algorithm for Online Discussion Forums". Their paper focuses on question filtering in online discussion forums. The proposed algorithm considers the context of the questions, including the forum's topic, the user's profile, and the time of posting. By incorporating contextual information, the algorithm can better identify relevant questions and improve user experience.

According to Li, Y., & Liu, Z. (2020) in "A Deep Learning-Based Question Filtering Algorithm for Large-Scale Question Answering Systems". Their paper addresses the challenge of question filtering in large-scale question answering systems. The proposed algorithm utilizes deep learning techniques to extract semantic features from questions and calculate their similarity. By leveraging the power of deep learning, the algorithm can efficiently filter out irrelevant questions and improve the accuracy of question answering.

As stated by Liao (2019), Ganareal, Paguia & Agreda (2019), this paper builds upon existing literature on voice recognition systems, particularly focusing on the development of such systems for underrepresented languages like Bikol and Kapampangan. Prior studies have established the significance of voice recognition technologies, including their applications in voice encoding, speaker diarization, and automatic voice recognition (ASR). However, existing ASR works often face challenges due to the scarcity of voice corpora for many languages, leading to lower accuracy rates.



This paper addresses this gap by proposing a novel approach utilizing the CMU Sphinx Toolkit and traditional machine learning techniques based on Gaussian Mixture Models and Hidden Markov Models. By collecting a voice corpus from native speakers and experimenting with different configurations of tied states, the researchers achieve promising accuracy rates for Bikol and Kapampangan, contributing valuable insights to the field of voice recognition for less commonly studied languages.

According to Hernandez, A. et al. (2020), in the study Question Filtering for Automatic Voice Recognition of Filipino Language. They stated that a successful implementation of NLP would allow even non-technical and illiterate users to have access to technology by simply using their native tongue. Currently, there are very limited studies on the use of the Question Filtering (CNN) for Automatic Voice Recognition of Filipino Language. This paper presents a CNN model using SqueezeNet architecture for the Filipino language with 99.58% training accuracy, and 84.71% testing accuracy. This study would be helpful to the researchers since it tackles Question Filtering (CNN) for Automatic Voice Recognition of Filipino Language. It gives the researchers knowledge about the use of CNN model using SqueezeNet architecture which had a high training accuracy.

According to De Leon, J. (2023) in "A Question Filtering System for Online Learning Platforms in the Philippines". They paper aims to develop a question filtering system tailored to the specific needs of online learning platforms in the Philippines. The system focuses on filtering out irrelevant or low-quality questions to improve the overall learning experience for students and educators.



According to Reyes, M (2022) in "A Tagalog Question Filtering Algorithm for Social Media Platforms". They paper proposes a question filtering algorithm specifically designed for Tagalog-language content on social media platforms in the Philippines. The algorithm aims to identify and filter out irrelevant or spam questions, enhancing the quality of online discussions and interactions.

According to Santos, R (2021) in "A Question Filtering System for Philippine Government Online Forums". They paper explores the development of a question filtering system for online forums used by the Philippine government. The system aims to improve the efficiency and effectiveness of citizen engagement by filtering out irrelevant or repetitive questions.

Synthesis of the study

All the above information are important academic papers, innovations and motivation that helps our group create an application whose primary purpose is to help the IT related students to prepare for their job interview. According to these people, the use of voice recognition is various field was very evident in our society. Some of our citations stated about school related used of voice recognition like for learning languages. Other stated about the use of it in industries like agricultural purposes such as disease detection in crops, also in skill enhancers.

Smart phones are a solution for developing and analyzing user experience data using assistive technologies. Smartphone-based tools assist students in IT related courses in acquiring questionnaire. The primary features of using a Mobile Phones are



quick question browsing, voice recognition and extensibility for such students who wants to prepare for their job interview. It includes built- in accessibility features and capabilities for Mobile devices. This means that students who are IT related courses can use these features right away. Mobile phone has a lot of software flexibility that allows for optimal and smooth user navigation.

The researchers tend to build an application that would use Question Filtering and Automatic voice recognition. For the project proposal, such algorithms typically provide the better flexibility of use and reliability. Automatic voice recognition recognizes whatever the participant's voice commands deliver. This allows the application to proceed in processing the user's response to given questionnaire.

A few of the common features with other academic cited is the Voice to Text System using voice recognition and skill enhancer using Filtering Algorithm. This feature according to these authors was very helpful in so many industries. It really contributes to greater of academic achievement and competitive employment. Therefore, we are eager to help those students to be prepared in their job interview and be a productive member of society with the help of our application.



CHAPTER III

Research Methodology

In this chapter, the researcher discussed the research methodology used, and technical background required to develop this study. This discussion will show the flow of the application and its specification using screenshots and diagrams discussing the capabilities of the application.

Research method used

The research method we used in this study is quantitative. Data involves numerical measurements, such as counts, percentages, and averages, that are used to represent and analyze phenomena and predict outcomes. These methods rely on data collection tools like surveys, experiments, and existing datasets to produce objective, numerical insights. These data will be an invaluable tool for obtaining deep insights into participants' experiences, ideas, and viewpoints, resulting in a more nuanced grasp of the research issue.

Population, Sample Size and Sampling Technique

The researchers employed convenience sampling, a non-probability sampling technique, to recruit participants. The target population for this research are IT professionals seeking new job opportunities. Due to ease of access and familiarity with technology, a group of students enrolled in the CICT department, as well as fresh graduates from Taguig City University, Philippines, will participate in the study. The specific sample size will be determined based on participant availability, resource constraints, and desired statistical power. While convenience sampling offers practicality,



it can introduce bias. Therefore, the findings of this study may not be generalizable to the entire population of IT professionals.

The study utilizes consecutive and quota sampling as well, Consecutive sampling, chosen for its efficiency, allows us to recruit readily available participants meeting us criteria. This iterative approach enables data collection from multiple samples, potentially enriching our understanding of the phenomenon. While acknowledging limitations in generalizability, this method suits the current research design

Where:

n = the sample size

e = the margin of error

N = the population

1 = constant number

$$n = \frac{N}{1 + N(e)^2}$$

Description of Respondents

In this study, the target respondents are the College of Information and Communication Technology students at Taguig City University and graduated students who graduated from the course of BSCS, BSIT, BSIS AND, BSCE will be asked to cooperate with our research study.



RESPONDENTS (Bachelor of Science in Computer Science)	NUMBER OF RESPONDENTS	PERCENTAGE
BSCS & BSIS Students	30 Participants	60%
IT Professionals	10 Participants	20%
Fresh Graduate	10 Participants	20%
TOTAL	50	100%

Table 1: Respondents Diagram

Table 1 displays the matrix of respondents, presenting the population and sample size for different groups under consideration. The CICT undergraduate and fresh graduate population encompasses 50 individuals.

Research Instruments

For data collection, the researchers administered a survey to the respondents, followed by analysis and tallying.

The following steps outline the data collection process:

Step 1: Initially, the researchers distributed the survey form to the primary respondents, including the students under BSCS and BSIS course. Additionally, the survey was given to IT professionals in the IT industry or those with specialized IT expertise. During this step, participants were also briefed on the system's functionality and performance.



Step 2: Subsequently, the information gathered by the researchers is documented to facilitate an evaluation of the respondents' perceptions regarding the functional suitability, performance efficiency, compatibility, usability, reliability, maintainability, and portability of the system.

I. Information within this section includes demographic details such as age, gender, and classification, distinguishing between BSCS and BSIS students and IT professionals.

II. The survey instructs respondents to indicate their evaluation by placing a check mark in the appropriate box. This assessment covers the perception of the system's functional suitability, performance efficiency, compatibility, usability, reliability, maintainability, and portability.

III. The final segment presents the feedback provided by the respondents, focusing on:

1. Challenges and issues encountered during the system presentation.
2. Suggestions, recommendations, and comments provided by the respondents after the presentation and operation of the system.

Data Gathering Procedure

During the interview phase, researchers were tasked with utilizing the free time of the students to conduct the research interviews, they had the option to request students to participate in the research or job interview. The researchers were responsible for seeking out and communicating with an authorized person regarding the interviews they wished to conduct. Additionally, the researchers were instructed to distribute survey questionnaires and utilize Google Forms for online surveys. The respondents were to be provided with ample time to answer the questions. After gathering the data, the researcher would proceed to analyze the results using statistical processing techniques



employed in the study. This analysis would be finalized with a brief discussion of the findings within the group.

The information needs to be properly arranged and encoded in a format that is appropriate for examination. After completing this phase, come up with workable solutions and suggestions by deriving understanding from the encoded data, considering the ISO standard attributes of quality.

Statistical Treatment of Data

The researchers will make use of different types of statistical methods such as Weighted Mean, Likert Scale, and Percentage. With the use of this methods, the proposed system will be evaluated according to the respondent's feedback.

1. Weighted Mean

The researchers will be going to use weighted mean to get the respondent's perception of each indication in system evaluation based on ISO 25010 with the criteria of Functional Suitability, Performance Efficiency, Compatibility, Usability, Reliability, Maintainability, and Portability. Based on Likert Scale idea of the boundary of numerals, this weighted mean was interpreted.

$$\text{Formula: } \textit{Weighted Mean} = \frac{\sum fx}{n}$$

Where:

\sum = Summation Symbol

f = Frequency

x = Unit weight



n = Total number of respondents

2. Likert Scale

Table 2 shows the Likert Scale's rating system for assessing the respondent's replies. The researchers will be going to use this in assessing the respondent's response each question.

Table 2

Likert Scale

POINT	SCALE RANGE	EXPLANATION
4	4.00 - 3.00	Strongly Agree
3	2.99 – 2.00	Agree
2	1.99 – 1.00	Disagree
1	1.00 – 0.99	Strongly Disagree

3. Percentage

The researchers will use a 5-point Likert scale to gather data because it allows respondents to express varying degrees of agreement or disagreement with statements, providing a more nuanced understanding of their attitudes and perceptions. This scale is also simple to use and interpret, making it a popular choice for surveys to measure opinions, preferences, or behaviors.

$$\text{Formula: } P = \left(\frac{a}{b}\right) \times 100$$

Where:

P = Percentage



a = amount

b = total unit

100 = Constant value

Technical Requirements

Hardware Requirements

The proponents will discuss all the hardware requirements that will be used to create, implement, and deployment of the system. Here are the requirements to create the system:

Computer Specification:

This is the Development Requirements:

SPECIFICATION	BRAND AND MODEL
Processor	RYZEN 5 7000 SERIES
RAM	16GB
Storage	512GB
GPU	AMD Radeon

Table 3. Specification for development of the System

Table 3 shown the specification of the system that are used to create the system it includes the CPU, RAM, Storage and GPU that can work together to create and to make the system work efficiently.



This is the Deployment Requirements:

SPECIFICATION	NEEDED REQUIREMENTS
Processor	1.5 Ghz Octa core minimum either Snapdragon or Mediatek or any other processor.
RAM	3GB
Storage	32GB
GPU	Minimum of Mali-G52 MC2 in Mediatek, Adreno 512 in Snapdragon

Table 4. Specification for deployment of the System

Table 4 shown the minimum specification of the system that are applicable to run the application it includes the CPU, RAM, Storage and GPU that can work together to run the application efficiently.



Software Requirements

Operating System – Mobile OS



Figure 1: Mobile OS

Mobile OS is an operating system for mobile devices, particularly smartphones and tablets, which is based on a modified version of Linux kernel and other open-source software. Mobile operating system is required to install and run the application. This mobile OS are the Android and iOS.

Mobile minimum version – Android 14.0 (Upside-down cake) and iOS 17



Figure 2: Android 14.0 and iOS 17



Android 14, dubbed "Upside Down Cake," is Google's fourteenth major operating system version, set to launch in October 2023. This version focuses on increased privacy and security, giving users more control over app permissions and stronger malware protection.

The user interface has been updated to provide a more consistent and visually pleasing experience, making navigating easier. Performance changes ensure that apps load faster and run more smoothly, especially on older devices. Better power management increases battery life, allowing for longer periods of use between charges. Additionally, Android 14 provides greater customization choices, allowing users to tailor their smartphones to their preferences. Support for cutting-edge technology is also increased, with additional camera features, networking possibilities, and more. Android 14 "Upside Down Cake" is a substantial upgrade that improves security, performance, customization, and overall user experience.

iOS 17 is the latest version of Apple's mobile operating system, designed for iPhone devices. It introduces enhanced privacy features, improved user interface customization, and new communication tools such as enhanced FaceTime and messaging capabilities. The system also supports real-time live activities, widget customization on the lock screen, and interactive widgets on the home screen. iOS 17 enhances app performance and integrates advanced machine learning for optimized user experience, making it a robust platform for modern mobile applications.



Integrated Development Environment – Visual Studio Code

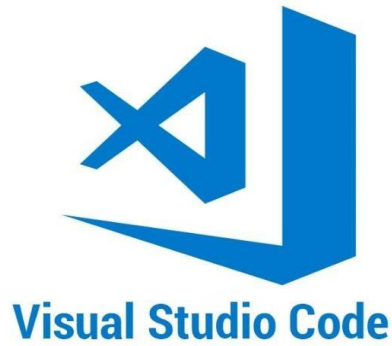


Figure 3: Visual Studio Code

The official integrated development environment (IDE) for developing various applications is called Visual Studio Code. also commonly referred to as VS Code, is a source-code editor developed by Microsoft for Windows, Linux, macOS and web browsers. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded version control with Git.

Programming Language – JavaScript



Figure 4: JavaScript



often abbreviated as JS, is a programming language and core technology of the Web, alongside HTML and CSS. 99% of websites use JavaScript on the client side for webpage behavior. Web browsers have a dedicated JavaScript engine that executes the client code.

TensorFlow Lite



Figure 5: TensorFlow Lite

It shows TensorFlow lite is a deep learning framework and is based on the TensorFlow framework. It is used to scale down a typically enormous TensorFlow model so that it can fit into modular gadgets like cell phones. With Android Studio, the access of model is by using TensorFlow lite. It is a complex procedure and is used to access a minimal reduction algorithm of the model



Database – Firebase



Figure 6: Firebase

One of Firebase's primary strengths, even today, is that it was designed from the start to be a real-time database. Real-time JSON (JavaScript Object Notation) data is stored in the Realtime Database, which is effectively a cloud-hosted NoSQL database. The ability to operate offline by using the local cache on the device to store any changes made is one of the main benefits of Firebase's real-time database. Data sync occurs when the app's connection is restored.



Network Requirements

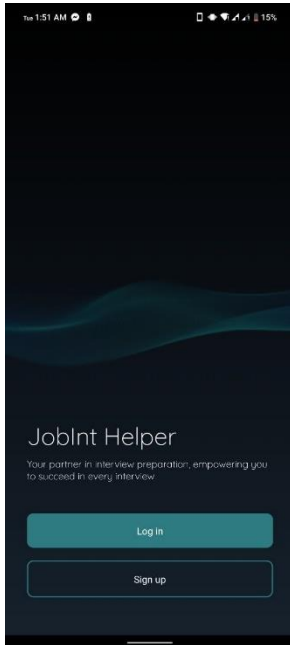


Figure 7: Internet Network

The Internet is a global computer network made up of linked networks that use standardized communication protocols to provide a variety of information and communication services. An internet network also has cost-effectiveness, data security, flexibility, and efficient storage. Additionally, it makes information sharing among employees easier, which boosts output and efficiency. Speaking-to-text, text-to-voice, login, registration, and other features will all require internet access for Firebase's cloud storage during application execution. The minimum mbps (megabits per second) of internet our application needs to run is 1-3 mbps.

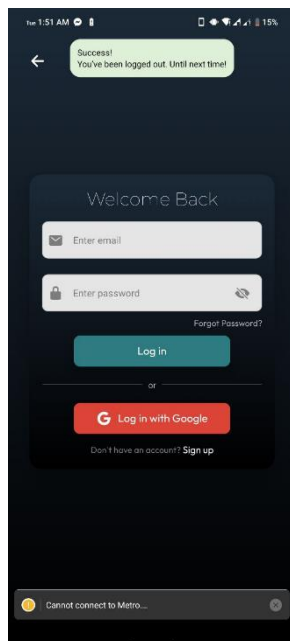


Project Design



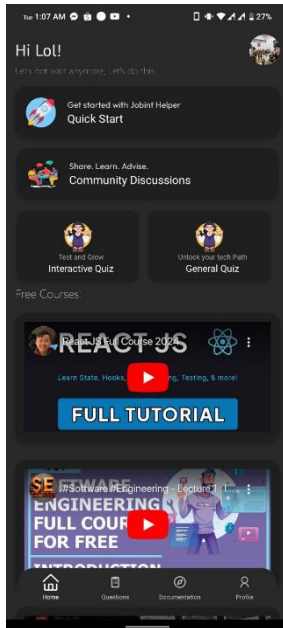
This image shows the welcome screen of the "JobInt Helper" application. The design is minimalist, featuring the app's name and tagline: "Your partner in interview preparation, empowering you to succeed in every interview." It provides two clear options: **Log in** and **Sign up** for users to either access or create an account.

Figure 8: Welcome boarding



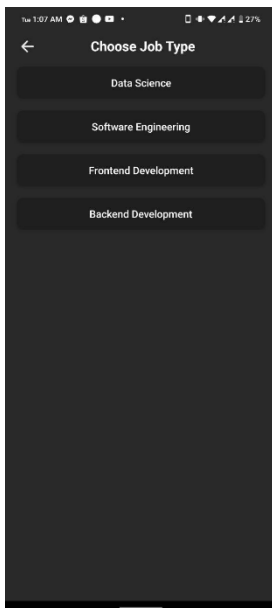
The image shows a login screen with an email and password input for the "JOBINT-HELPER: Skill Enhancer Mobile Application." The system supports user authentication through email/password or Google sign-in, offering an interface where users can securely log in to access job interview preparation features. This design is integral to the mobile app's overall functionality, ensuring that users can sign in to utilize features such as voice recognition, question filtering algorithms, and interview preparation tools efficiently.

Figure 9: login screen



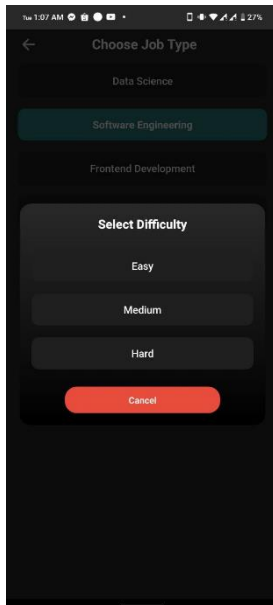
the image shows the "JobInt Helper" home screen with personalized greetings and key features like Quick Start, Community Discussions, Interactive Quiz, and General Quiz. It also offers Free Courses via embedded YouTube tutorials. The bottom navigation includes tabs for Home, Questions, Documentation, and Profile for easy access to app functions focused on IT job preparation and skill enhancement.

Figure 10: Dashboard



The image shows the job type selection screen that appears after selecting "Quick Start" in the "JobInt Helper" app. Users can choose from four job categories: Data Science, Software Engineering, Frontend Development, and Backend Development. This selection guides the app to tailor the interview preparation content, questions, and feedback based on the chosen job type. It ensures a personalized experience for the user's specific career path

Figure 11: Job Selection



The image shows the next step after selecting a job type in the "JobInt Helper" app. The user is prompted to select a difficulty level (Easy, Medium, or Hard) for the interview preparation. This selection customizes the complexity of the questions presented, tailoring the experience to the user's desired challenge level. The Cancel button allows users to exit the selection process. This feature provides flexibility in adjusting interview difficulty based on individual skill and preparation needs.

Figure 12: Selecting difficulty

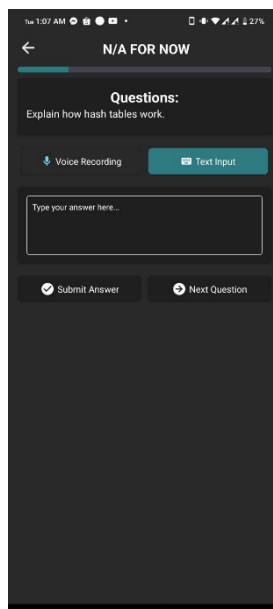
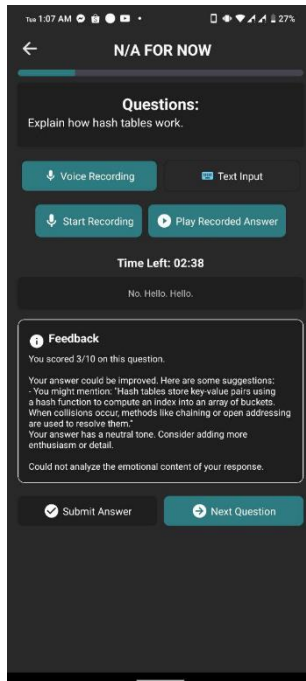


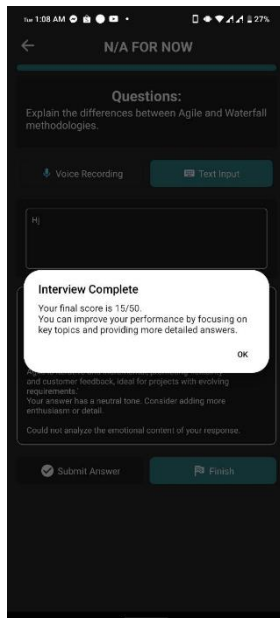
image shows the question-answer screen in the "JobInt Helper" app. The question displayed is "Explain how hash tables work." Users can choose to respond via Voice Recording or Text Input, providing flexibility in answering. There's a text box for typing answers, and two buttons at the bottom: Submit Answer and Next Question. This screen facilitates the core functionality of the app, allowing users to practice interview questions in different formats, submit answers, and move on to the next question, enhancing their interview preparation experience.

Figure 13: Interview Interface



This image shows the feedback screen after answering a question in the "JobInt Helper" app. The question is "Explain how hash tables work," and the user received a score of 3/10 with detailed feedback on improving their response. Suggestions include clarifying key points about hash tables and improving the emotional tone of the answer. There are options to record or play the recorded answer, with a time limit countdown for answering. The feedback encourages more enthusiasm or detail in responses, highlighting both technical and emotional aspects of the user's answer.

Figure 14: Voice answering method



The image shows the next step after selecting a job type in the "JobInt Helper" app. The user is prompted to select a difficulty level (Easy, Medium, or Hard) for the interview preparation. This selection customizes the complexity of the questions presented, tailoring the experience to the user's desired challenge level. The Cancel button allows users to exit the selection process. This feature provides flexibility in adjusting interview difficulty based on individual skill and preparation needs.

Figure 15: final assessment and scoring

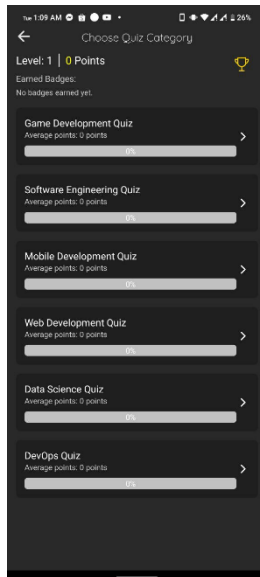
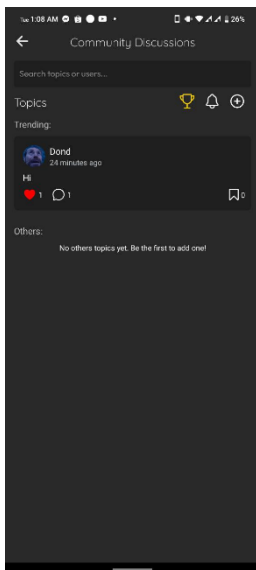


Figure 16: job quiz question

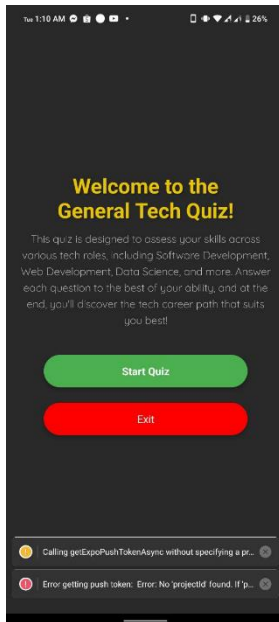
Each category displays an average points bar set at 0%, indicating that no points have been earned in any of the categories yet. Users can select a quiz category to start testing their knowledge and earning points to level up and earn badges.



feature encourages user interaction and knowledge sharing within the app.

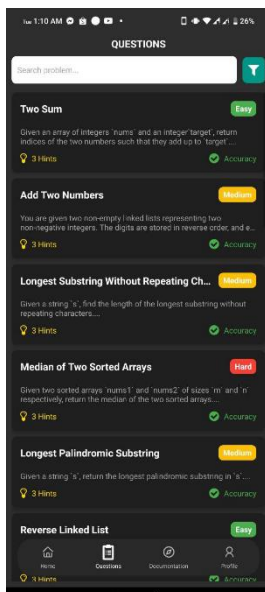
Figure 17: Community discussion

The image shows the Community Discussions screen in the "JobInt Helper" app. There is a search bar for finding topics or users, and a section labeled Topics that highlights trending posts. One post from a user named Dond says "Hi" and has received 1 like and 1 comment. Below, there's a message stating, "No other topics yet. Be the first to add one!" indicating the community is still growing. Users can engage by liking, commenting, or bookmarking posts, and there's an option to add new topics using the + button. This



The image shows the introduction screen for the General Tech Quiz in the "JobInt Helper" app. The text explains that the quiz assesses skills across various tech roles, such as Software Development, Web Development, Data Science, and more. Users are encouraged to answer questions to the best of their ability to discover the tech career path that suits them best. The screen has two buttons: Start Quiz (green) to begin the quiz and Exit (red) to leave.

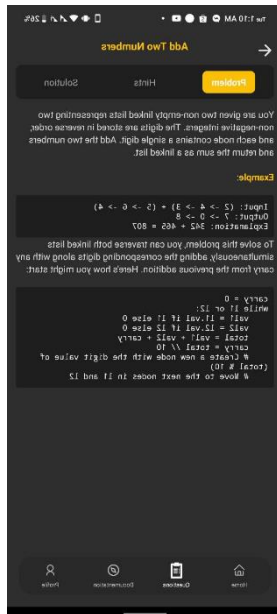
Figure 18: General quiz



The image displays the Questions screen in the "JobInt Helper" app, where users can search for and view various interview problems. The questions are categorized by difficulty (Easy, Medium, Hard) and include well-known coding challenges. Each question provides hints (e.g., "3 Hints") and tracks user performance with an "Accuracy" marker. There's also a filter button, allowing users to refine their search. This screen is essential for practicing technical problems in preparation for coding interviews.

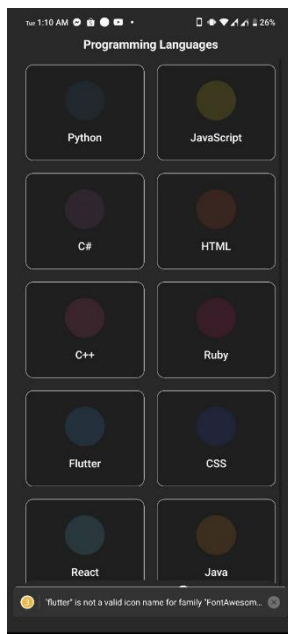
coding interviews.

Figure 19: Technical question prep interview



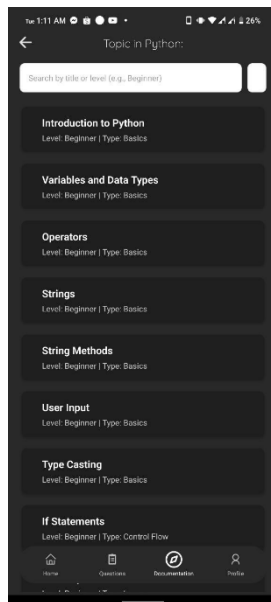
The image shows the detailed view of the problem Add Two Numbers in the "JobInt Helper" app. The screen is divided into three tabs: Problem, Hints, and Solution. The problem description explains that the user is given two non-empty linked lists representing two non-negative integers, where each node contains a single digit. The task is to add the two numbers and return the sum as a linked list.

Figure 19: Tech question problem, hint, solution



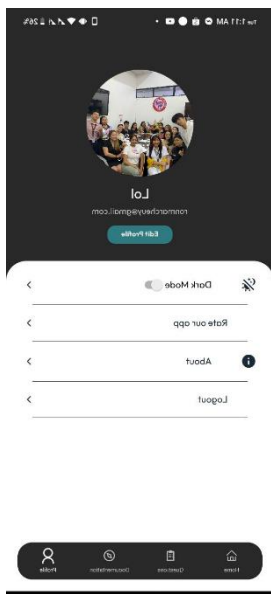
The image shows a selection screen for **Programming Languages** in the "JobInt Helper" app. Users can choose from a variety of popular programming languages, including: This screen allows users to select a programming language, likely to view related topics, problems, or documentation

Figure 20: Documentation list



The image shows a list of topics in Python in the "JobInt Helper" app. Each topic includes the level (Beginner) and type (Basics or Control Flow). The topics displayed are:

Figure 21: Documentation list topics



The image shows the Profile screen in the "JobInt Helper" app. It includes the user's display name Loi and email address ronmarcheuy@gmail.com. There is a button to Edit Profile along with additional options such as:

Home, Questions, Documentation, and Profile, allowing easy access to different sections of the app. This screen provides a simple and clean interface for managing personal settings and account information.

Figure 22: About

Diagrams

System Architecture

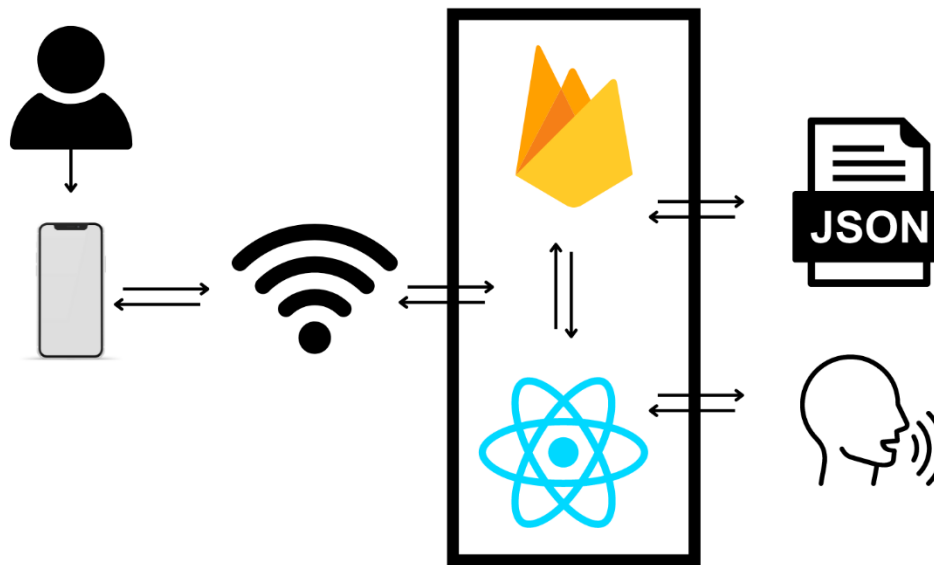


Figure 23: System Architecture

The figure 23 presents an overview of the application's underlying system architecture. The diagram provides a graphical representation of the mapping out of the four different components that make up the software system's physical implementation. The application will be accessed by the user via a mobile device, specifically a smartphone. There are three different components contained within the program, and all of these will communicate with one another to ensure that the application runs well. The software development kit (SDK) libraries which is the ML KIT can communicate effectively with the models for voice recognition, and the models, in turn, will output information that will be sent to the libraries and also to the internet so that it may be uploaded into a



database. Another procedure that takes place while text recognition is being implemented is the software development kit (SDK) library interacting with the machine learning models for a result in a request. At the same time, if the application requires data from the database, the internet will function as a medium via which the system can access the database.

Data Flow Diagram (Context Level, Level 1)

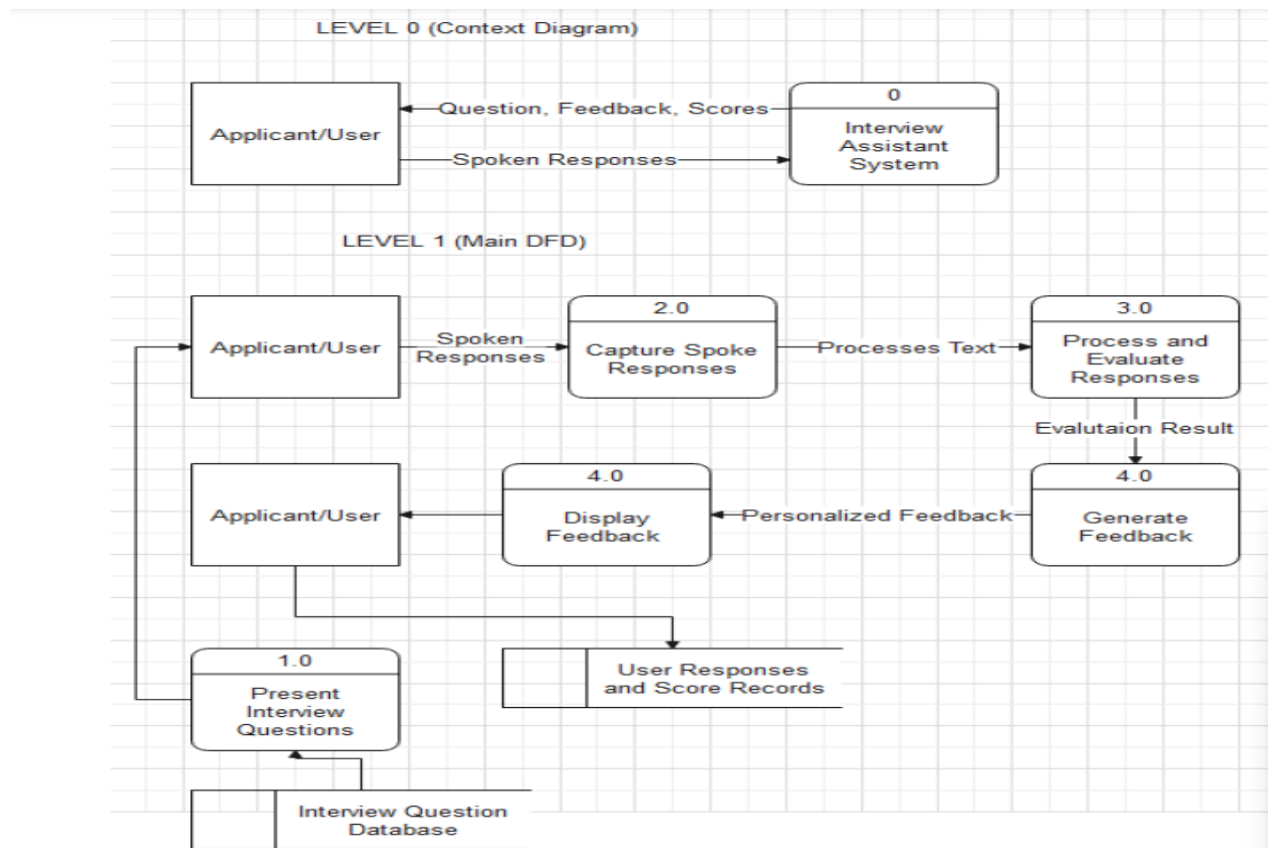


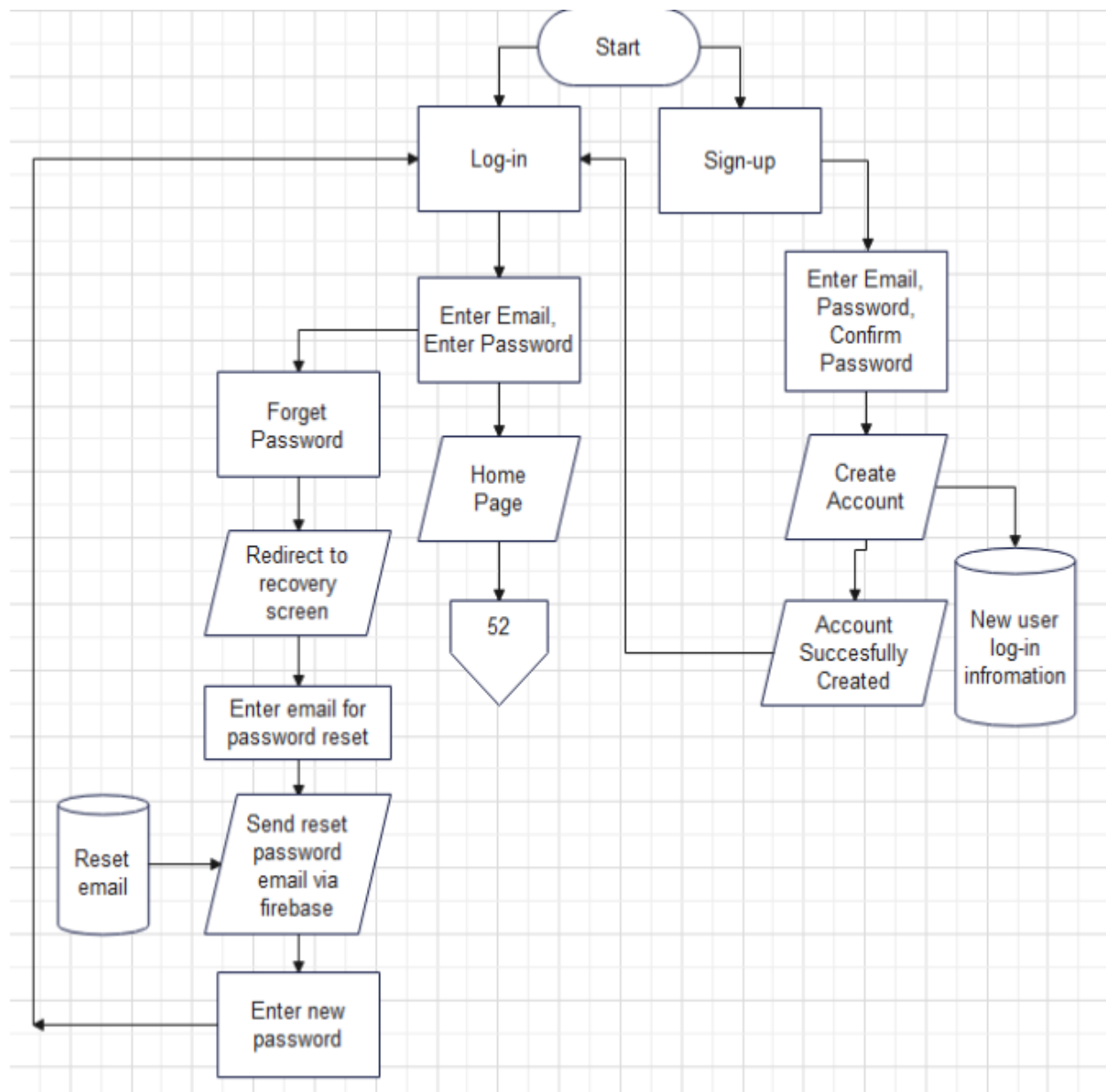
Figure 24: Context Level Diagram

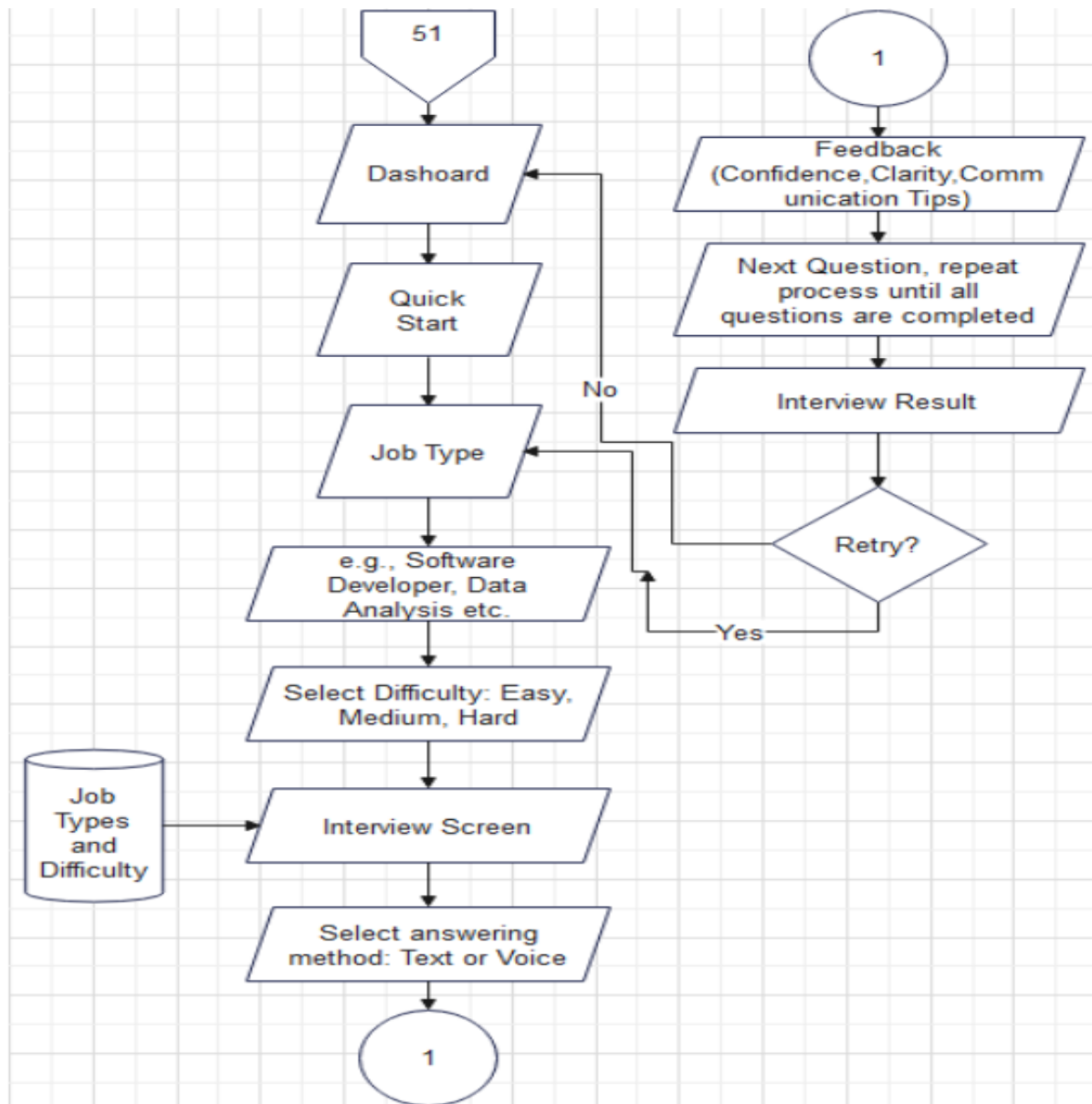


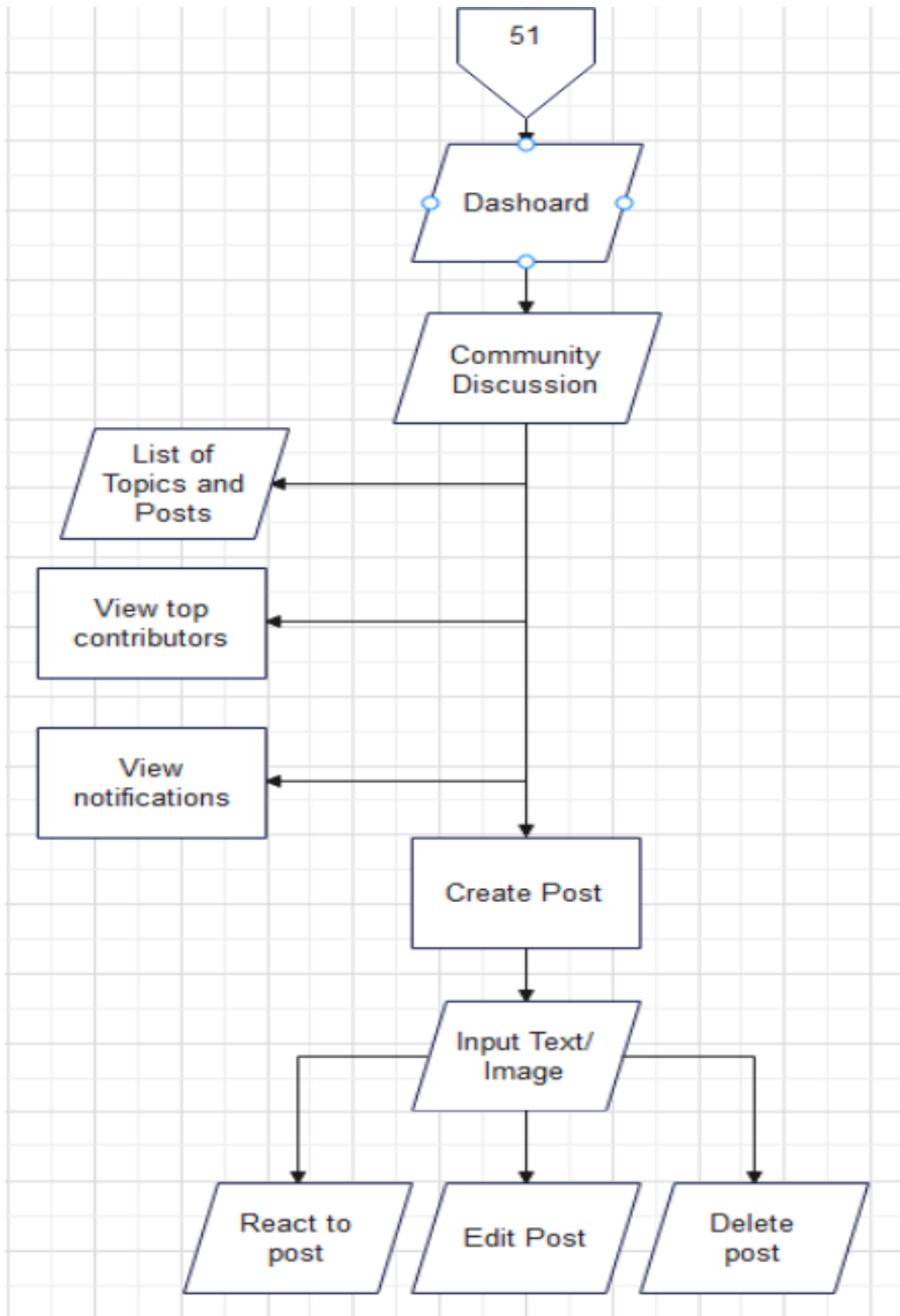
In the diagram above, a context diagram is used to display the Job-Int Helper: A Skill enhancer Mobile Application with Voice Recognition for It Job Interview Preparation Using Question Filtering plus the users that interacts with it. The arrows indicate the directions and the types of data flowing between the software and every single user component.

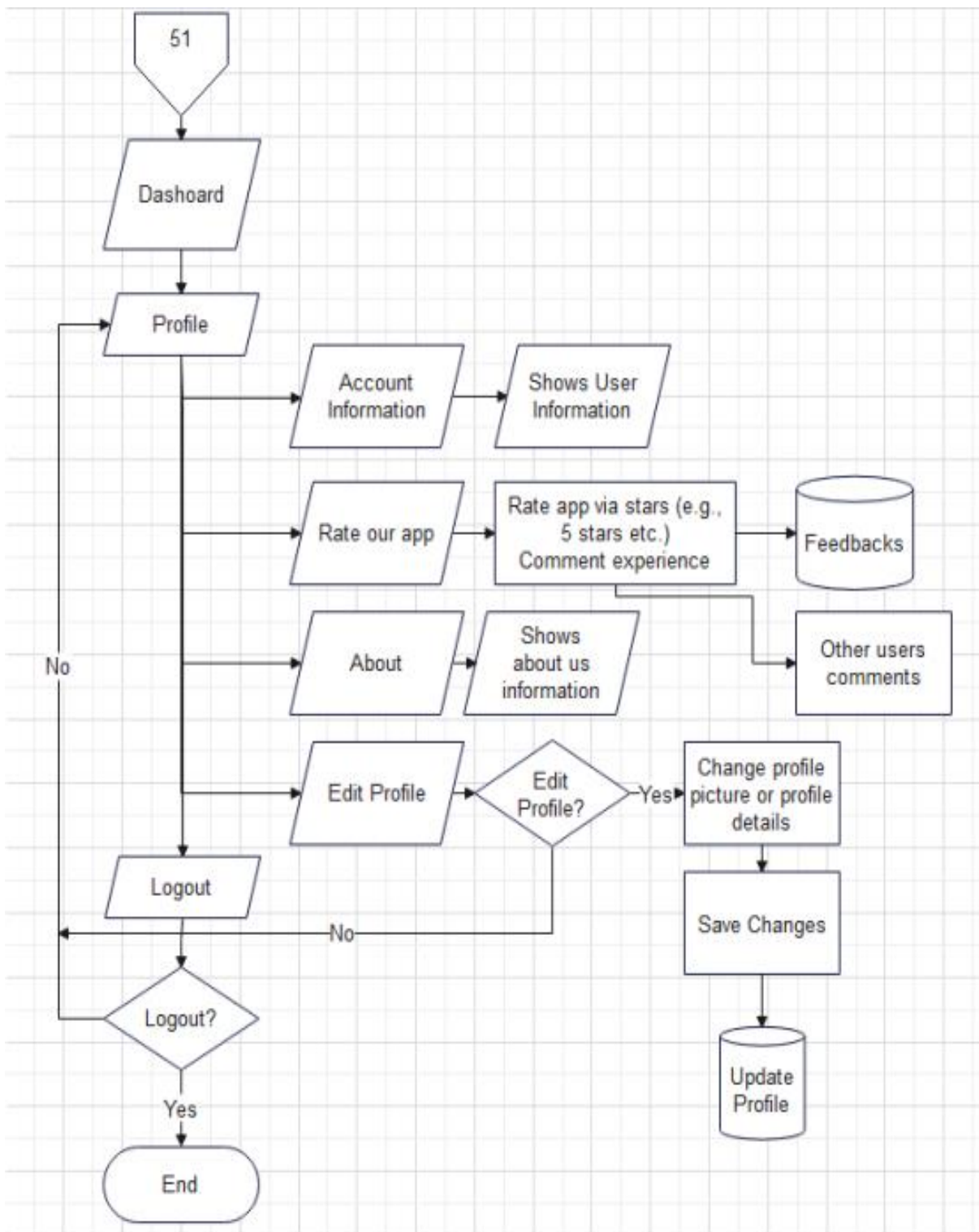


Proposed Flowchart









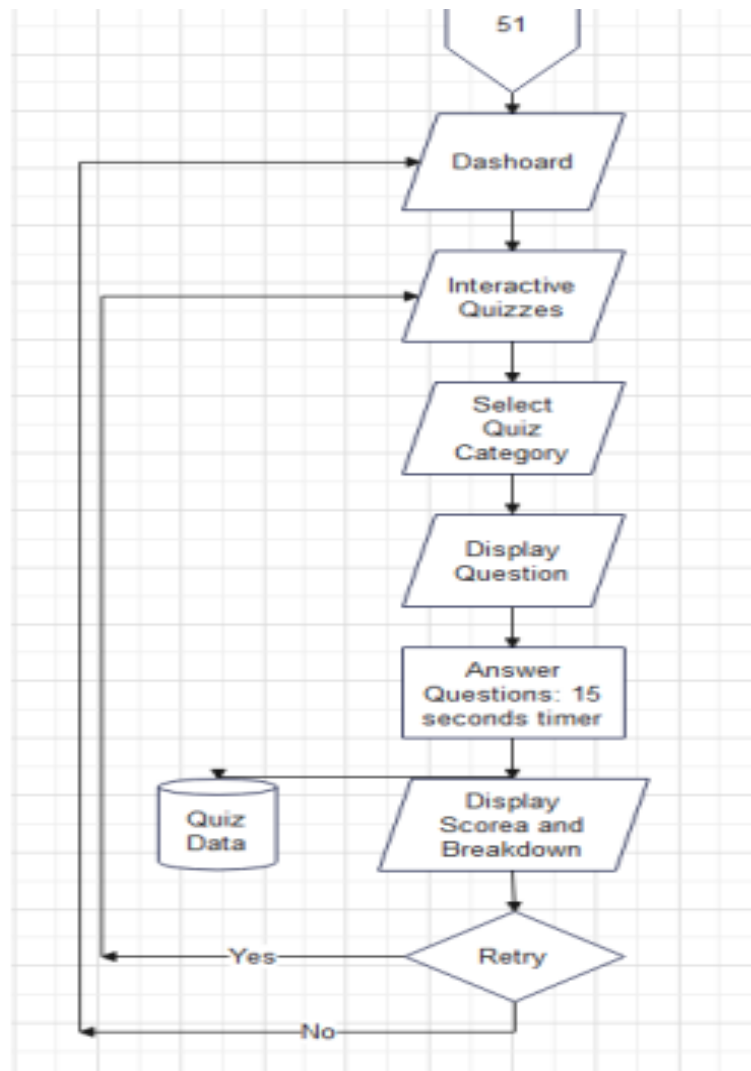


Figure 25: Flow Chart Diagram

Figure 25 shows the system flowchart of the proposed application Job-Int Helper. The process starts by entering login screen from there the user will be present four options to go through login with username and password, change his / her password, sign up using the application or exit the application. Following this the user will be at the home screen to select Job position. The user will select a Job position then it will be moved to the questionnaire page. The user will answer those questionnaires via voice recognition



then the app will detect the user's voice. Finally, after the answering the questionnaires, the app will display the answer of user via text with the comments regarding the user's answer

Unified Modeling Language (Prototype)

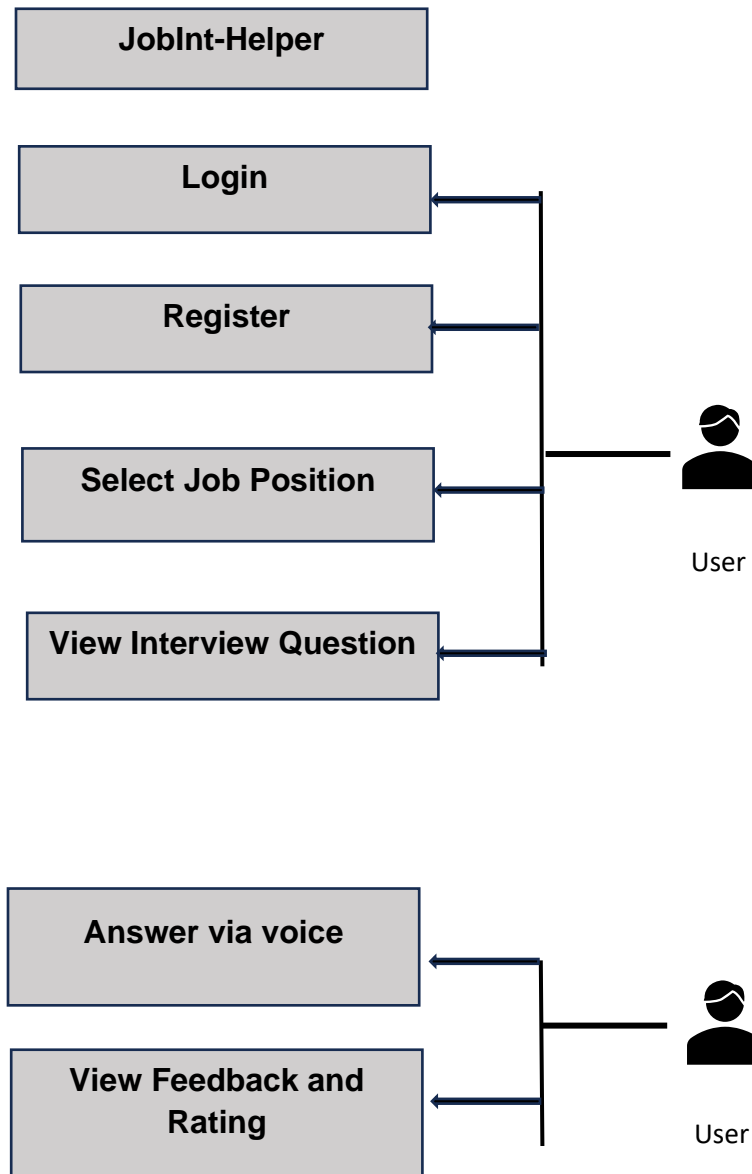


Figure 26: Unified Modeling Language (Prototype)



Figure 26 depicts the design of our system, with a reduced version for clarity. This graphic depicts the process flow and operational sequence of our system. This figure provides a full explanation of how our system works. The diagram focuses on major components and their interactions, highlighting the logical progression from one stage to the next. In this prototype, we intend to provide a clear and comprehensive description of the system's architecture. Each diagram element has been deliberately crafted to accurately depict the underlying operations and data flow. This technique guarantees that stakeholders understand the system's core workings, allowing for better communication and collaboration among team members. In short Figure 17 is an important tool for communicating the system's design, facilitating a complete grasp of its operating dynamics, and assuring alignment among all project participants.



Database Structure (Firebase Database)

```
| └─ userId2
|
|   └─ username: "user2"
|   └─ email: "user2@example.com"
|   └─ role: "user"
|
| └─ interviewQuestions
|   └─ questionId1
|     └─ questionText: "What is object-oriented programming?"
|     └─ category: "Programming"
|
|   └─ questionId2
|     └─ questionText: "Explain the concept of recursion."
|     └─ category: "Algorithms"
|
| └─ interviewAnswers
|   └─ answerId1
|     └─ userId: "userId1"
|     └─ questionId: "questionId1"
|     └─ answerText: "Object-oriented programming is a programming paradigm based
on the concept of objects."
```



```
| |
|   └─ answerId2
|     └─ userId: "userId2"
|     └─ questionId: "questionId2"
|       └─ answerText: "Recursion is a programming technique where a function calls
itself."
|
└─ feedback
    └─ feedbackId1
        └─ userId: "userId1"
        └─ questionId: "questionId1"
        └─ rating: 4
        └─ comment: "Well explained!"
    └─ feedbackId2
        └─ userId: "userId2"
        └─ questionId: "questionId2"
        └─ rating: 5
        └─ comment: "Great answer!"
```

Figure 27: Firebase Database Structure



Figure 27 explains how our Firebase database works. It demonstrates how data is shown in the database console and organized during imports. The figure begins with data input, which is then validated and formatted before being added to Firebase. It also illustrates real-time data synchronization across several devices to ensure consistency. The import procedure involves data parsing, error management, and database integration. Figure 18 provides a comprehensive picture of our Firebase data handling method.

System Development

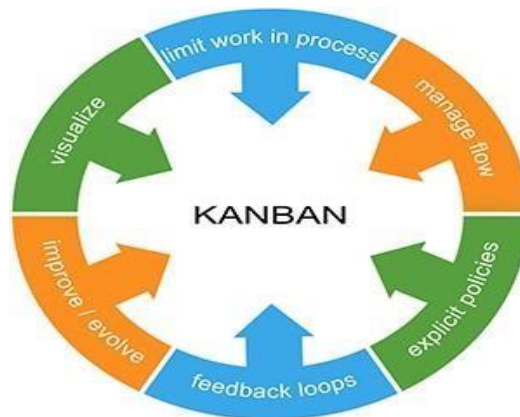


Figure 28: AGILE METHODOLOGY (KANBAN)

Our team uses the KANBAN AGILE technique to support an iterative and adaptive approach to project management. We prioritize rapid development and iteration over protracted testing phases via continuous delivery and feedback loops. By visualizing workflow and limiting work in progress, we assure effective task management and project component delivery. This methodology allows our team to respond quickly to changing



requirements and participant feedback, promoting a dynamic and collaborative development process. As a result, we can efficiently evolve the JOB-INT HELPER application by iteratively refining its features and functionality while staying focused on our overall goals.

1. Requirements

Functional Requirements:

- The system should present users with interview questions. It should analyze user responses and provide feedback.
- The system should be able to coherently understand user responses

Non-Functional Requirements:

- The system should have a user-friendly interface.

2. System Architecture:

The ITS employs a client-server architecture:

- Client-side: This user interface allows users to interact with the system, session history, submit answers, voice recognition, and receive feedback. (JavaScript)
- Server-side: This component handles core functionalities like problem generation, response evaluation, and feedback personalization (Technologies: TensorFlow)
- Database: Stores user information, learning progress, and problem sets. (Technology: Firebase)

3. Developments Methodology



The Agile development methodology was adopted for its iterative and flexible nature. The project was divided into sprints, focusing on specific functionalities in each cycle. User testing was conducted after each sprint to gather feedback and refine the system.

4. Development Tools and Technologies:

- Programming Languages: JavaScript/React Native
- Frameworks: TensorFlow (for reinforcement learning)
- Database: Firebase
- Development Environment: Integrated Development Environment (IDE) like PyCharm or Visual Studio Code

5. System Implementation:

- The development process involved:
- Designing the user interface for question presentation and feedback.
- Implementing functionalities for user interaction, voice recognition and response evaluation.
- Integrating the client-side interface with the server-side logic and database.

6. System Testing and Evaluation:

- Unit testing ensured individual components functioned as intended.
- Integration testing verified seamless interaction between different parts of the system.
- User testing involved users from the target audience to assess usability, effectiveness, and overall user experience.



Algorithm Discussion

The Question Filtering Algorithm employs advanced techniques such as semantic similarity analysis, topic modeling, and natural language processing (NLP) to evaluate and categorize interview questions based on various criteria. These criteria include the job position, the technical skills required, and the relevance of the question to common industry practices in IT. By analyzing the language and content of each question, the algorithm identifies key patterns and selects the most pertinent questions for the user's interview preparation.

This algorithm is primarily used to filter questions based on user-selected difficulty. It supports multiple job types and allows for dynamic filtering within the user interface. The function enhances the user experience by delivering questions that are tailored to the user's preferences, ensuring relevance and difficulty alignment.

Comparison of the Algorithm

- **Comparison of the algorithm (Strength and weakness)**
- **table (different Algo with Literature Strength and weakness)**

Algorithm	Strengths	Weaknesses
Question Filtering	<ul style="list-style-type: none">- These algorithms can process large volumes of queries quickly and efficiently, handling data at a scale that would be impossible for humans.- Automated filtering can work in real-time,	<ul style="list-style-type: none">- Algorithms may struggle to handle complex or ambiguous queries that fall outside of predefined rules, leading to false positives or false negatives.- Tuning the algorithm to be overly strict may result



	delivering results almost instantaneously	in valid questions being filtered out (over-filtering), while being too lenient might allow irrelevant or harmful queries through (under-filtering).
Rule-Based Filtering	Effective in high-dimensional spaces <ul style="list-style-type: none">- Simple, customizable, and easy to implement.	Inefficient for large datasets, manual configuration of rules.
Content-Based Filtering	<ul style="list-style-type: none">- Simple and intuitive- Scales well with large datasets, automatic filtering based on content.	<ul style="list-style-type: none">- Prediction is computationally intensive.- Requires detailed metadata, no user preference consideration.
Collaborative Filtering	<ul style="list-style-type: none">- Resistant to overfitting- Adaptive to user preferences, personalized recommendations.	<ul style="list-style-type: none">- Less interpretable than single decision trees- Requires user data, cold-start problem, computationally intensive.



Features

- **Difficulty-based Filtering:** Filters questions based on the selected difficulty level (e.g., "easy", "medium", "hard"), ensuring relevant content is served to the user.
- **Case-Insensitive Matching:** Performs case-insensitive matching to prevent errors caused by inconsistent capitalization in the dataset.
- **Custom Alert for No Results:** Displays a custom alert if no questions match the selected difficulty, providing clear feedback to the user.
- **Question Shuffling:** Randomly shuffles the filtered questions to ensure variety and prevent repetitive question patterns.

Function of Question Filtering ALGORITHM

JavaScript code:

```
// utils/analysisUtils.js

export const filterQuestionsByDifficulty = (questions, difficulty) => {

  if (!questions) return [];

  return questions.filter(

    (question) => question.difficulty.toLowerCase() === difficulty.toLowerCase()

  );

};

// components/InterviewScreen.js
```




```
useEffect(() => {  
  
  if (jobType && difficulty) {  
  
    const selectedQuestions = filterQuestionsByDifficulty(  
  
      jobQuestions[jobType],  
  
      difficulty  
  
    );  
  
    if (!selectedQuestions || selectedQuestions.length === 0) {  
  
      Alert.alert(  
  
        "No Questions Found",  
  
        No questions found for ${jobType} at ${difficulty} difficulty.,  
  
        [{ text: "OK", onPress: resetSelection }]  
  
      );  
  
      setInterviewQuestions([]);  
  
    } else {  
  
      // Shuffle and limit to 5 questions  
  
      const shuffledQuestions = shuffleArray(selectedQuestions).slice(0, 5);  
  
      setInterviewQuestions(shuffledQuestions);  
  
    }  
  
  }  
}
```



```
}, [jobType, difficulty]);
```

Function Description:

Input Parameters questions: This is a collection (usually an array) of questions where each question contains information about its content, including its difficulty level.

difficulty: This is a string (e.g., "easy", "medium", "hard") that represents the difficulty level the user has selected. The function needs to filter the questions based on this level.

The primary task of a filtering algorithm is to return a subset of data from a larger dataset based on some criteria. In this case, the criterion is that the difficulty level of a question must match the selected difficulty and to the job type that has been select.

Constructor:

The Question Filtering Algorithm does not use a class-based or object-oriented constructor because it is implemented as a stateless utility function in JavaScript. It does not require initialization of objects or data structures. Instead, the function `filterQuestionsByDifficulty` is a reusable, independent function that processes input data (questions and difficulty) and returns a filtered result.

In JavaScript, such functions are typically defined in utility files and can be called directly wherever needed in the codebase, without the need for object instantiation or constructors.

Methods:

questions: An array of question objects, where each object contains details about a specific question, including its difficulty (e.g., "easy", "medium", "hard").



difficulty: A string that specifies the difficulty level

Explanation:

The question filtering algorithm is part of a React Native app that personalizes the interview experience for users. The user selects both a job type and a difficulty level, and the algorithm filters questions based on those criteria. This ensures that users are presented with interview questions that are relevant to both the job role and the difficulty they are comfortable with.

Once the questions are filtered, they are shuffled using a separate utility function. The shuffle operation ensures that users don't see questions in a predictable order, enhancing variety. If no questions are available for the chosen job type and difficulty, the app displays a custom alert message to inform the user, allowing them to adjust their selection.

Uses

Question Filtering: This algorithm is primarily used to filter questions based on user-selected difficulty. It supports multiple job types and allows for dynamic filtering within the user interface.

User Interaction: The function enhances the user experience by delivering questions that are tailored to the user's preferences, ensuring relevance and difficulty alignment.



CHAPTER IV

RESULT AND DISCUSSION

This chapter gives the results, and a discussion of the insights gained regarding how the study was conducted.

RESPONDENTS TOTAL POPULATION SAMPLE SIZE

RESPONDENTS	TOTAL POPULATION	SAMPLE SIZE
BSCS & BSIS Students	30	30
IT Professionals	10	10
Fresh Graduate	10	10
TOTAL	50	50

Table 5: Respondents of the Study

The table above shows the respondents of the study which include the total population of BSCS & BSIS Students is 30 with a sample size of 30. the total population of Fresh Graduate is 10 with a sample size of 10, for the population of IT professionals is 10 with a sample size of 10, which have a total 50 respondents.



Evaluation and Scoring (Likert Scale)

POINT	SCALE RANGE	EXPLANATION
4	4.00 - 3.00	Strongly Agree
3	2.99 – 2.00	Agree
2	1.99 – 1.00	Disagree
1	1.00 – 0.99	Strongly Disagree

Table 6: Likert Scale

Project Evaluation

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals with 30 respondents. One set of questionnaires was prepared for the evaluation of the system based on ISO/IEC 25010 in terms of the following variables:

1. Functional Suitability

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals at the proposed Development of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for It Job Interview Preparation in terms of Functionality Suitability

Indicators	BSIS/BSCS Students		Fresh Graduates		IT Professionals		Average	
	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation
Functional Completion	3.30	Strongly Agree	3.10	Strongly Agree	3.30	Strongly Agree	3.23	Strongly Agree
Functional Correctness	3.43	Strongly Agree	3.30	Strongly Agree	3.60	Strongly Agree	3.44	Strongly Agree
Functional Appropriateness	3.83	Strongly Agree	3.50	Strongly Agree	3.80	Strongly Agree	3.71	Strongly Agree



ss								
Overall Weighted Mean	3.52	Strongly Agree	3.30	Strongly Agree	3.57	Strongly Agree	3.46	Strongly Agree

Table 7. Table for Functional Suitability

Table 7 presents the evaluation of 3rd and 4th-year BSIS/BSCS students, Fresh Graduates, and IT Professionals on the proposed JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for IT Job Interview Preparation in terms of Functional Suitability. The overall weighted mean of the indicators is 3.46, which is interpreted as "Strongly Agree." This indicates that the system is functionally suitable and meets the users' expectations effectively. Among the indicators, Functional Appropriateness received the highest average weighted mean of 3.71, interpreted as "Strongly Agree," demonstrating that the system effectively supports its intended purpose. Functional Correctness followed with an average weighted mean of 3.44, also interpreted as "Strongly Agree," highlighting that the system produces accurate and reliable outputs. Meanwhile, Functional Completion achieved the lowest average weighted mean of 3.23, which is still interpreted as "Strongly Agree," indicating that the system sufficiently provides the functionalities required by the users. The results reflect that the application is well-suited for its intended use, with consistent feedback from all user groups affirming the system's functional reliability and appropriateness. However, further refinement in ensuring complete functionality may enhance user satisfaction even further.



2. Performance Efficiency

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals at the proposed Development of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for It Job Interview Preparation in terms of Performance Efficiency.

Indicators	BSIS/BSCS Students		Fresh Graduates		IT Professionals		Average	
	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation
Time Behavior	3.17	Strongly Agree	3.40	Strongly Agree	3.40	Strongly Agree	3.32	Strongly Agree
Resource Utilization	3.93	Strongly Agree	3.60	Strongly Agree	3.80	Strongly Agree	3.78	Strongly Agree
Capacity	3.37	Strongly Agree	3.10	Strongly Agree	3.30	Strongly Agree	3.26	Strongly Agree
Overall Weighted Mean	3.49	Strongly Agree	3.37	Strongly Agree	3.50	Strongly Agree	3.45	Strongly Agree

Table 8. Table for Performance Efficiency

Table 8 presents the evaluation of 3rd and 4th-year BSIS/BSCS students, Fresh Graduates, and IT Professionals on the proposed JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for IT Job Interview Preparation in terms of Performance Efficiency. The overall weighted mean of the indicators is 3.45, which is interpreted as "Strongly Agree." This indicates that the system is highly efficient across all indicators. It is evident that Resource Utilization received the highest average rating of 3.78, interpreted as "Strongly Agree," signifying that the system efficiently utilizes resources during operation. On the other hand, Capacity garnered the lowest rating of 3.26, which is still interpreted as "Strongly Agree," demonstrating that the



system adequately handles its intended functions. Meanwhile, Time Behavior achieved an average rating of 3.32, also interpreted as "Strongly Agree," indicating effective time management during system operations. These results highlight that the system is robust, reliable, and efficient in meeting user expectations for performance. However, the slight variation in scores suggests potential areas for further optimization, particularly in system capacity.

3. COMPATIBILITY

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals at the proposed Development of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for It Job Interview Preparation in terms of Compatibility.

Indicators	BSIS/BSCS Students		Fresh Graduates		IT Professionals		Average	
	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation
Co-existence	3.93	Strongly Agree	3.80	Strongly Agree	3.90	Strongly Agree	3.88	Strongly Agree
Interoperability	3.23	Strongly Agree	3.40	Strongly Agree	3.40	Strongly Agree	3.34	Strongly Agree
Overall Weighted Mean	3.58	Strongly Agree	3.60	Strongly Agree	3.65	Strongly Agree	3.61	Strongly Agree

Table 9. Table for Compatibility

Table 9 presents the evaluation of 3rd and 4th-year BSIS/BSCS students, Fresh Graduates, and IT Professionals on the proposed JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for IT Job Interview



Preparation in terms of Compatibility. The overall weighted mean of the indicators is 3.61, which is interpreted as "Strongly Agree." This indicates that the system is highly compatible and can effectively integrate with its intended environment and other systems. Among the indicators, Co-existence received the highest average weighted mean of 3.88, interpreted as "Strongly Agree," demonstrating that the system efficiently operates alongside other systems without interference. On the other hand, Interoperability achieved an average weighted mean of 3.34, also interpreted as "Strongly Agree," indicating that the system can interact effectively with other systems and exchange information seamlessly. The results reflect that the application meets the compatibility requirements, with consistent feedback from all user groups affirming its ability to coexist and interoperate with other systems. This reinforces the system's reliability and adaptability in diverse operating environments.

4. MAINTAINABILITY

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals at the proposed Development of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for It Job Interview Preparation in terms of Maintainability.

Indicators	BSIS/BSCS Students		Fresh Graduates		IT Professionals		Average	
	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation
Modularity	3.67	Strongly Agree	3.90	Strongly Agree	4.00	Strongly Agree	3.86	Strongly Agree
Reusability	3.07	Strongly Agree	3.40	Strongly Agree	3.50	Strongly Agree	3.32	Strongly Agree



Analyzability	3.30	Strongly Agree	3.50	Strongly Agree	3.80	Strongly Agree	3.53	Strongly Agree
Modifiability	3.67	Strongly Agree	3.90	Strongly Agree	4.00	Strongly Agree	3.86	Strongly Agree
Overall Weighted Mean	3.43	Strongly Agree	3.68	Strongly Agree	3.83	Strongly Agree	3.64	Strongly Agree

Table 10. Table for Maintainability

Table 10 presents the evaluation of 3rd and 4th-year BSIS/BSCS students, Fresh Graduates, and IT Professionals on the proposed JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for IT Job Interview Preparation in terms of Maintainability. The overall weighted mean of the indicators is 3.64, which is interpreted as "Strongly Agree." This indicates that the system is maintainable and meets user expectations for modularity, reusability, analyzability, and modifiability. Among the indicators, Modularity and Modifiability both received the highest average weighted mean of 3.86, interpreted as "Strongly Agree," indicating that the system is well-structured into manageable components and can be modified efficiently when needed. Analyzability followed with an average weighted mean of 3.53, also interpreted as "Strongly Agree," suggesting that the system's functionality can be effectively analyzed to identify errors or improvements. Meanwhile, Reusability obtained the lowest average weighted mean of 3.32, which is still interpreted as "Strongly Agree," reflecting the system's ability to be reused across various components or contexts. These results demonstrate that the system is reliable and easy to maintain, with positive feedback across all user groups. The high ratings for modularity and modifiability emphasize the system's adaptability and ease of management for future improvements.



5. RELIABILITY

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals at the proposed Development of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for It Job Interview Preparation in terms of Reliability.

Indicators	BSIS/BSCS Students		Fresh Graduates		IT Professionals		Average	
	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation
Maturity	3.97	Strongly Agree	3.40	Strongly Agree	3.60	Strongly Agree	3.66	Strongly Agree
Availability	3.93	Strongly Agree	3.90	Strongly Agree	3.90	Strongly Agree	3.91	Strongly Agree
Fault Tolerance	3.93	Strongly Agree	3.90	Strongly Agree	3.90	Strongly Agree	3.91	Strongly Agree
Recoverability	3.57	Strongly Agree	3.40	Strongly Agree	3.40	Strongly Agree	3.46	Strongly Agree
Overall Weighted Mean	3.85	Strongly Agree	3.65	Strongly Agree	3.70	Strongly Agree	3.99	Strongly Agree

Table 11. Table for Reliability

Table 11 presents the evaluation of 3rd and 4th-year BSIS/BSCS students, Fresh Graduates, and IT Professionals on the proposed JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for IT Job Interview Preparation in terms of Reliability. The overall weighted mean of the indicators is 3.99, which is interpreted as "Strongly Agree." This indicates that the system is highly reliable and consistently meets the expectations of its users. Among the indicators, both Availability and Fault Tolerance received the highest average weighted mean of 3.91, interpreted as "Strongly Agree." This highlights the system's ability to remain operational



and maintain functionality even in the event of issues or failures. Maturity followed with an average weighted mean of 3.66, also interpreted as "Strongly Agree," indicating that the system performs its functions dependably under normal operating conditions. Meanwhile, Recoverability received the lowest average weighted mean of 3.46, which is still interpreted as "Strongly Agree," suggesting that the system is capable of recovering from faults efficiently, though there may be room for improvement in this area. The results reflect that the system demonstrates strong reliability across all aspects, ensuring high availability and fault tolerance, which are critical for user satisfaction and system performance.

6. USABILITY

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals at the proposed Development of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for It Job Interview Preparation in terms of Usability.

Indicators	BSIS/BSCS Students		Fresh Graduates		IT Professionals			Average
	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation
Appropriateness Recognizability	3.90	Strongly Agree	3.60	Strongly Agree	3.70	Strongly Agree	3.73	Strongly Agree
Learnability	3.90	Strongly Agree	3.70	Strongly Agree	3.80	Strongly Agree	3.80	Strongly Agree
Operability	3.40	Strongly Agree	3.30	Strongly Agree	3.50	Strongly Agree	3.40	Strongly Agree
User-Error Protection	3.29	Strongly Agree	3.00	Strongly Agree	3.10	Strongly Agree	3.13	Strongly Agree



User Interface Aesthetics	3.50	Strongly Agree	3.30	Strongly Agree	3.50	Strongly Agree	3.43	Strongly Agree
Overall Weighted Mean	3.60	Strongly Agree	3.38	Strongly Agree	3.52	Strongly Agree	3.50	Strongly Agree

Table 12. Table for Usability

Table 12 presents the evaluation of 3rd and 4th-year BSIS/BSCS students, Fresh Graduates, and IT Professionals on the proposed JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for IT Job Interview Preparation in terms of Usability. The overall weighted mean of the indicators is 3.50, which is interpreted as "Strongly Agree." This indicates that the system is highly usable, and users find it effective and easy to interact with. Among the indicators, Learnability received the highest average weighted mean of 3.80, interpreted as "Strongly Agree," reflecting that the system is easy to learn for users. Appropriateness Recognizability followed with an average weighted mean of 3.73, also interpreted as "Strongly Agree," indicating the system is easy to recognize. Operability followed with an average weighted mean of 3.40, also interpreted as "Strongly Agree," indicating that the system operates smoothly with minimal difficulty. User-Error Protection received the lowest average weighted mean of 3.13, interpreted as "Strongly Agree," suggesting that the system provides adequate protection against errors, but there may be room for improvement in reducing user mistakes. Lastly, User Interface Aesthetics garnered a weighted mean of 3.43, also interpreted as "Strongly Agree," which points to a good user interface, but there is potential for enhancing its visual appeal. These results show that the proposed system is well-received in terms of usability, with all user groups agreeing that it is easy to use



and effective. However, the system could benefit from improvements in user-error protection and user interface aesthetics to further enhance the overall user experience.

7. PORTABILITY

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals at the proposed Development of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for It Job Interview Preparation in terms of Portability.

Indicators	BSIS/BSCS Students		Fresh Graduates		IT Professionals			Average
	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation
Adaptability	3.50	Strongly Agree	3.50	Strongly Agree	3.60	Strongly Agree	3.53	Strongly Agree
Installability	3.40	Strongly Agree	3.40	Strongly Agree	3.50	Strongly Agree	3.43	Strongly Agree
Replicability	3.50	Strongly Agree	3.50	Strongly Agree	3.60	Strongly Agree	3.53	Strongly Agree
Overall Weighted Mean	3.47	Strongly Agree	3.47	Strongly Agree	3.57	Strongly Agree	3.50	Strongly Agree

Table 13. Table for Portability

Table 13 presents the evaluation of 3rd and 4th-year BSIS/BSCS students, Fresh Graduates, and IT Professionals on the proposed JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for IT Job Interview Preparation in terms of Portability. The overall weighted mean of the indicators is 3.50, which is interpreted as "Strongly Agree." This indicates that the system is highly portable and adaptable across different devices and environments. Among the indicators,



Adaptability and Replicability each received an average weighted mean of 3.53, interpreted as "Strongly Agree," highlighting that the system can easily adjust to different platforms and can be reliably replicated across various settings. Installability followed closely with a weighted mean of 3.43, also interpreted as "Strongly Agree," indicating that the system can be installed without significant difficulty. Overall, the results demonstrate that the system is portable, with the ability to function across different environments and be easily replicated, making it a flexible and scalable solution.

8. SECURITY

Evaluation of 3rd and 4th year BSIS/BSCS students, Fresh Graduate and IT Professionals at the proposed Development of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for It Job Interview Preparation in terms of Security.

Indicators	BSIS/BSCS Students		Fresh Graduates		IT Professionals			Average
	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation	W. M.	Interpretation
Confidentiality	3.67	Strongly Agree	3.70	Strongly Agree	3.80	Strongly Agree	3.72	Strongly Agree
Integrity	3.33	Strongly Agree	3.20	Strongly Agree	3.30	Strongly Agree	3.28	Strongly Agree
Non-repudiation	4.00	Strongly Agree	4.00	Strongly Agree	4.00	Strongly Agree	4.00	Strongly Agree
Accountability	3.67	Strongly Agree	3.70	Strongly Agree	3.80	Strongly Agree	3.72	Strongly Agree
Authenticity	4.00	Strongly Agree	4.00	Strongly Agree	4.00	Strongly Agree	4.00	Strongly Agree
Overall Weighted Mean	3.73	Strongly Agree	3.72	Strongly Agree	3.78	Strongly Agree	3.74	Strongly Agree



Table 14. Table for Security

Table 14 presents the evaluation of 3rd and 4th-year BSIS/BSCS students, Fresh Graduates, and IT Professionals on the proposed JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm for IT Job Interview Preparation in terms of Security. The overall weighted mean of the indicators is 3.74, which is interpreted as "Strongly Agree." This indicates that the system is perceived as highly secure by all user groups, with a strong focus on protecting user data and ensuring secure operations. Among the indicators, Non-repudiation and Authenticity each received the highest average weighted mean of 4.00, interpreted as "Strongly Agree," highlighting that the system ensures that actions are traceable and that users are accurately identified. Confidentiality followed closely with an average weighted mean of 3.72, interpreted as "Strongly Agree," indicating that users feel confident that their sensitive data is kept private. Accountability received a rating of 3.72, showing strong agreement that the system ensures that actions can be traced back to responsible parties. Finally, Integrity had the lowest rating of 3.28, also interpreted as "Strongly Agree," suggesting that while the system maintains data integrity, there may be room for improvement in ensuring data accuracy and consistency. These results reflect that the system is secure, with all critical aspects of security—such as confidentiality, authenticity, and non-repudiation—being well-addressed. The slightly lower score for Integrity suggests that enhancing data consistency could further strengthen the security framework.



CHAPTER V

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

This chapter summarizes the study on the research named “JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm For It Job Interview Preparation”. The conclusion was drawn from the research outcomes and observations on the manual process. Recommendations were based on the findings and conclusion of the study.

Summary Of Findings

The proponents' survey examines the capabilities of JobInt-Helper: Skill Enhancer Mobile Application with Voice Recognition Using Question Filtering Algorithm For IT Job Interview Preparation by using questionnaires. They were able to test and determine the respondent's level of satisfaction with the system's ISO Standard in terms of Functional Stability, Performance Efficiency, Compatibility, Usability, Reliability, Security, Maintainability, and Portability by using structural equations. The result's foundations for the developed systems of the proponents.

Based on the assessment given to the 50 respondents the majority of them are IS and CS students with total number of 30, 10 fresh graduates, and 10 IT professionals. They Strongly Agree that the system's capability to carry out its intended functions, based on the system's functional suitability overall weighted average of 3.83, which indicates that it is functionally suitable.



In term of Performance Efficiency, respondents Strongly Agreed that the system works well, with an overall weighted average of 3.49. It is acceptable that the system's performance efficiency is relatively high.

In terms of Compatibility, respondents Strongly Agreed that the system is compatible with any type of mobile phones and can run on any operating system, It received a 3.58 total weighted mean rating, which indicates its compatibility level

In terms of Maintainability, the system has received a total weighted mean of 3.07, which is which is deemed commendable. Respondents strongly agreed that the system is efficient in diagnosing the root causes of issues, updating the program, resolving bugs, and identifying errors.

In terms of Reliability, respondents strongly agreed that the systems could obtain the data, as well as verify user input, and only allow authorized users access to it. received a weighted average score of 3.85.

In terms of Usability, it received an overall weighted mean of 3.60, which results that the respondent strongly agreeing that the system is user-friendly to use, checks the user's input, and is useful in their ranking process.

In terms of Portability, the results demonstrate that the system is portable, with the ability to function across different environments and be easily replicated, making it a flexible and scalable solution. As a result it received 3.47 points as an overall weighted average which means that respondent agreed that the portable to used.



In terms of Security, it received an acceptable overall weighted average of 3.73, These results reflect that the system is secure, with all critical aspects of security such as confidentiality, authenticity, and non-repudiation—being well-addressed.

Conclusions

The researchers reached the following conclusions based on their findings:

- With a weighted mean of 3.83, the system is highly capable of fulfilling its intended functions, showcasing strong alignment with its objectives.
- Achieving a weighted mean of 3.49, the system performs reliably and efficiently, meeting user expectations in terms of speed and responsiveness.
- The system's ability to operate across various mobile devices and platforms is evident with a weighted mean of 3.58, reflecting its flexibility and adaptability.
- A commendable weighted mean of 3.07 indicates that the system is efficient in addressing bugs, making updates, and diagnosing errors, ensuring ease of maintenance.
- The system scored a high weighted mean of 3.85, emphasizing its dependability in handling data accurately, verifying inputs, and restricting access to authorized users only.
- With a weighted mean of 3.60, the system is recognized as user-friendly, intuitive, and beneficial for users in their specific tasks, particularly in ranking processes.



- A weighted mean of 3.47 reflects the system's portability and ability to function seamlessly across various environments, making it a scalable and versatile solution.
- The system scored a solid weighted mean of 3.73, affirming its robustness in securing data and addressing key security aspects like confidentiality, authenticity, and non-repudiation.

Recommendations

The researchers put together some recommendations for the improvement of related future studies. Only the IS and CS students and Fresh graduates related to those courses will use this system as the system was tailored for them.

Future researchers may consider the following:

- Optimize the voice recognition feature to ensure faster and more accurate response times
- Expand compatibility testing to include more diverse devices and operating systems, ensuring seamless performance across all platforms.
- Incorporate advanced security measures, such as multi-factor authentication and real-time threat detection, to enhance the system's already solid security rating of 3.73.
- Gather feedback from a broader range of users to identify usability improvements and ensure the app remains intuitive and user-friendly

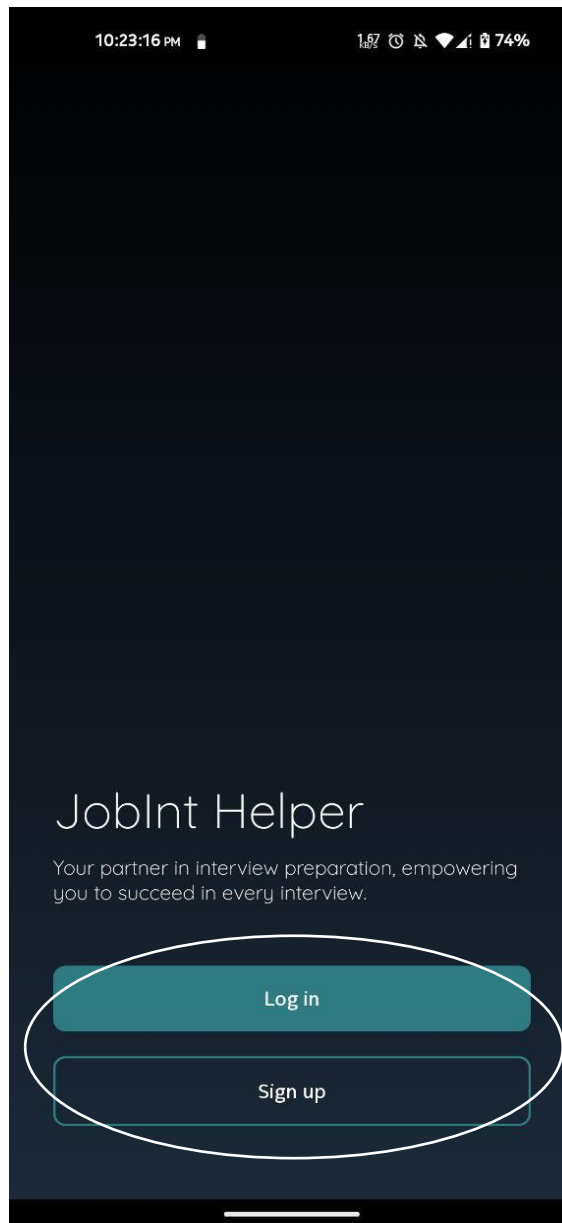


- Establish a feedback loop with users, including IS/CS students, IT professionals, and fresh graduates, to regularly update and improve the app based on evolving user needs.
- The future researchers can also consider making the application available on web browsers for further compatibility enhancement and making it more cross platform



JobIntHelper - User's Manual/Screenshots of the System

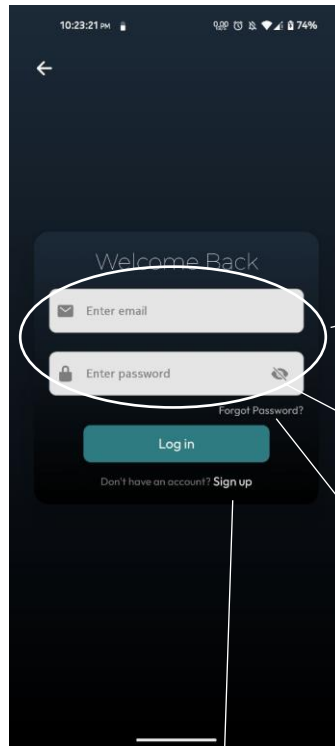
User onboarding screens



If you already have an account then proceed to login, otherwise proceed to Sign up.



Login in Screen



Enter your valid Email and Password

You can enable 'Show Password' by pressing the 'Eye'

Press the 'Forgot Password' if you have forgotten your password. A link will be sent to your email.

Press 'Sign-up' if you don't have an account. This will redirect you to the account creation



Sign Up Page

Enter an active Email Address. Emails such as reset password will be sent here.

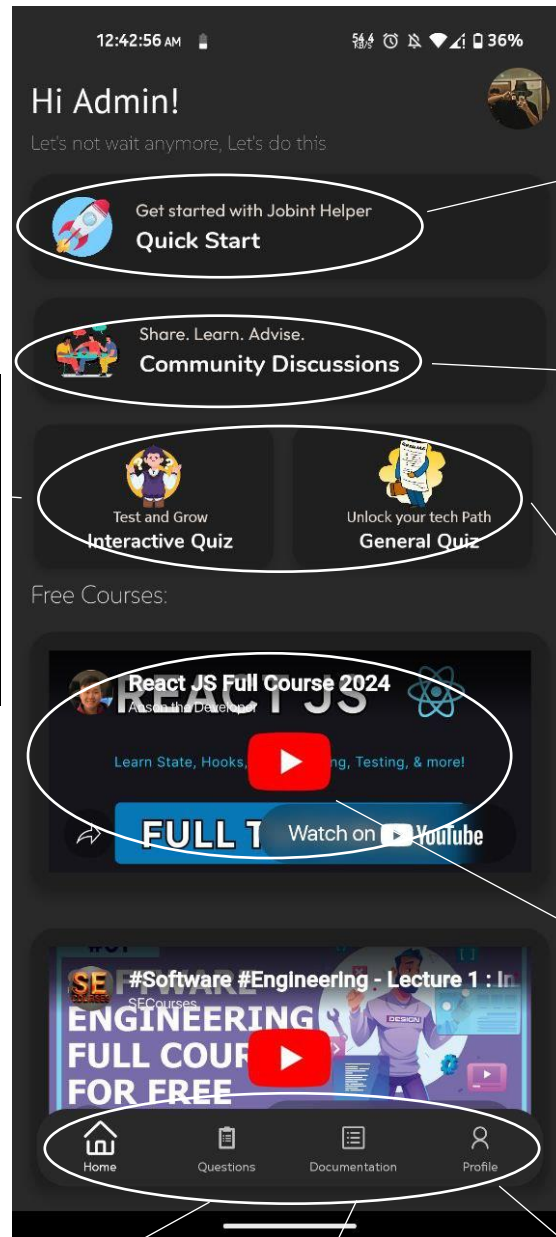
Enter a password with at least 6 characters (ex. Hahah123, re-enter your password to confirm.

After fulfilling all conditions, tap 'Sign-Up' when done.



Dashboard

Pressing 'Interactive Quiz' will test your knowledge in different fields.



Pressing 'Quick Start' will re-direct you to the Interview Practice Session. In here you can choose your desired field and select a difficulty

Press 'Community Discussion' to view and create threads for user's discussion about interview, experience, guides, tips etc.

Press 'General Quiz' to get a field recommendation from us. (Software Engineer, Data Analyst)

Tap the play button if you want to watch videos about programming languages or Courses (React.js, Software engineer, etc.



Interview Practice Session page

The screenshot shows a mobile app interface for an interview practice session. At the top, the status bar displays the time 10:25:19 PM, battery level at 75%, and various system icons. The app's title bar shows a back arrow and the text 'Interview Practice'. Below this, a progress bar is partially filled. The main content area displays 'Question 1' with the text 'Does Radial basis kernel function exist in SVM?'. A timer below the question indicates 'Time Left: 02:59'. There are two input options: 'Voice' with a microphone icon and 'Text' with a text box icon. The 'Text' option is selected, and a text input field with the placeholder 'Type your answer here...' is visible. At the bottom, there are two buttons: 'Submit' with a checkmark icon and 'Next' with a right arrow icon.

Questions about the field that you choose.

Timer of how many minutes you have left to answer that questions.

If you want to answer the questions via Voice recording.

If you want to answer that question via Text.

Tap this Submit button if you have your answer. Then you'll receive feedbacks and

Tap this Next button after you submit your answer to move the next

Press 'Questions' if for the Technical Interview Reviewer. This features Q&A's.

Press 'Documentation' to read about all of the available programming languages. This also shows the basics of each programming languages

Tap this if you want to go to your profile



Interactive Quiz

Your level. Each level contains 100 points if you want to level up,

Your badges which is the Newbie badge (Bronze badge). Tap the leaderboard icon to see the badge requirements and all badges

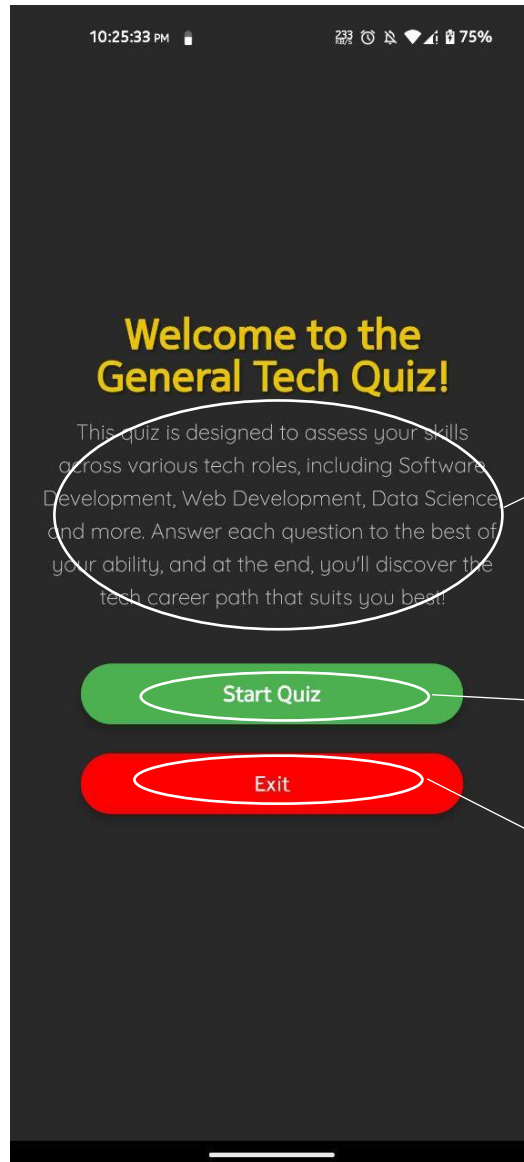


Tap this if you want to see the Top users of this Quiz (Level and badges). And the badge requirements.

Shows points of how many questions you answered correctly. Each correct answers equivalent to 10 points.



General Tech Quiz



Description about the General the Quiz.

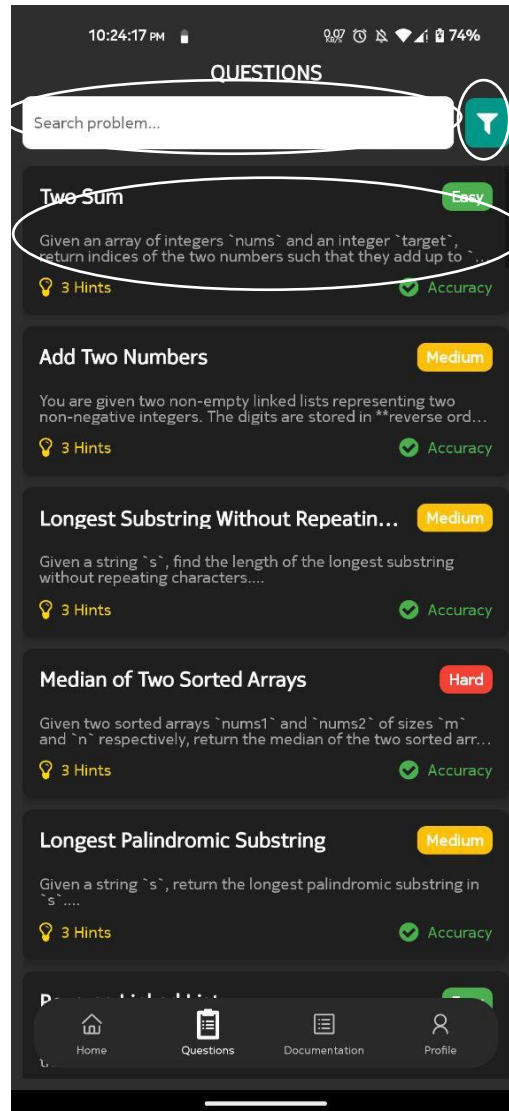
Tap this if you want to start the quiz.

Tap this if you want to



Technical Interview Page

Search bar, if you want to search a problem.

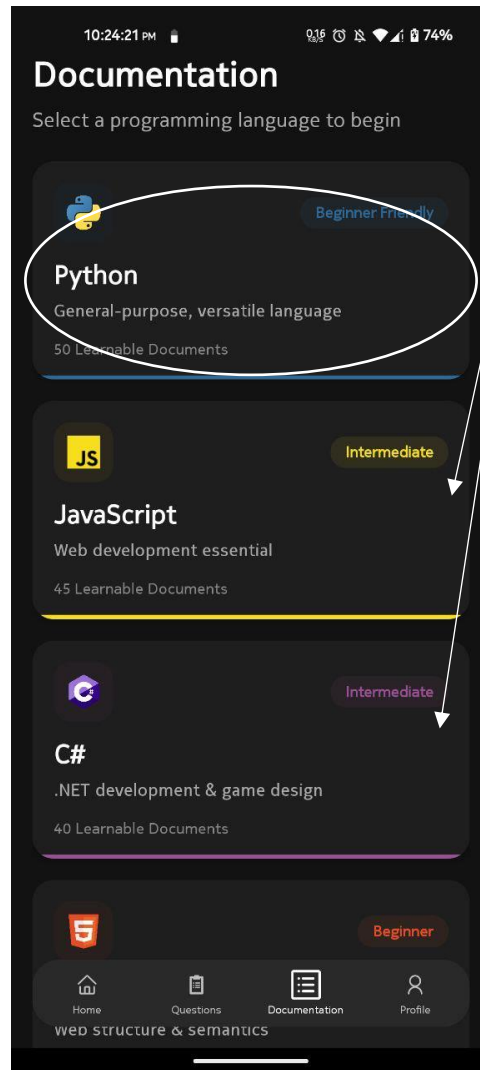


Tap this if you want to filter the topic (easy, medium, hard)

Set of Topics and Descriptions.



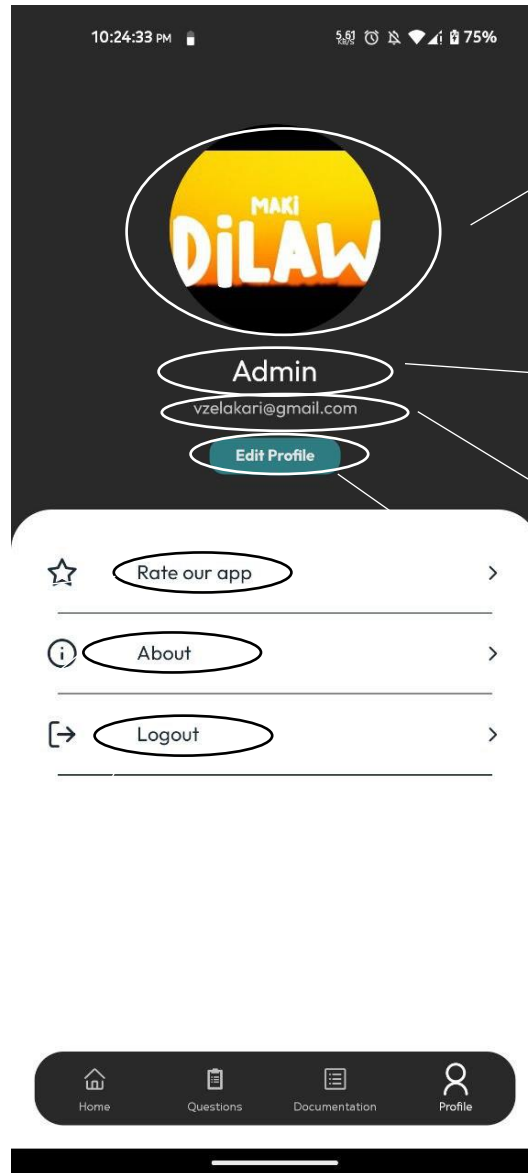
Documentation Page



Tap this if you start to learn this language then you'll see a lot of topics about this language.



Profile Page



Your Profile picture.

Your Username.

Your Email account.

Tap this if you want our rate our app.

Tap this to see the Mission and Vision and the developers of this app.

Tap this you to edit your profile picture, username, phone number and gender.

Tap this if you want to log out your account. then it will navigate you to the login page after you logout.



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