**Software Requirements Specification Document**

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| **Project Name** | **Senior Wellness** |
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| **Team Name** | Team 05 |
| **Members** | Kowshik, Rashmitha, Nishchith, Rohith,  Raghuveer, Jaswanth |

# **Brief problem statement**

Many older and middle-aged individuals face challenges when navigating modern technology, making it difficult for them to manage tasks like online payments and social media interactions , Application and device navigations. This struggle also increases their vulnerability to scams. Current resources tend to be too generic or not specifically designed for their needs, often leaving them dependent on others for assistance.

# **System requirements**

**Frontend**:

* **React.js**: For building the UI, quizzes, navigation tutorials, and integrating text hover-to-speech (using Web Speech API).
* **React Router**: To manage navigation and routing within the web app.
* **CSS Framework**: Material-UI or Bootstrap to build a responsive, user-friendly interface.

**Backend**:

* **Node.js with Express**: To handle server-side logic and communication with the database and third-party services (like Dialogflow and Firebase).
* **REST API**: Set up endpoints for scam detection, user authentication, quiz submissions, etc.

**Database**:

* **MongoDB (Cloud or Local)**: For storing user data, quiz results, and scam-related data.
* **Mongoose**: As the ODM (Object Data Modeling) library to interact with MongoDB.

**AI and Chatbot**:

* **Dialogflow**: For implementing AI-based conversational agents to provide answers and voice assistance. It can handle message, link, and call scam identification queries.

**Authentication**:

* **Firebase Authentication**: For secure user logins using both text and speech recognition. Firebase is easy to integrate with your React frontend and Node.js backend.

**Text-to-Speech**:

* **Web Speech API**: For implementing the hover-to-speech feature, allowing text on the website to be read aloud to users.

**Platform Compatibility:**

* The system should run on any platform that supports modern web browsers (e.g., Chrome, Firefox) for frontend access.
* The backend must be deployable on a cloud platform that supports Node.js, such as Firebase or Heroku.

**Security:**

* Basic security measures, such as HTTPS and Firebase Authentication, will suffice for the scope of the course project.

**Performance:**

* Prioritize functional correctness over extensive optimization, focusing on core features like chatbot response, quizzes, and scam detection.

**Accessibility:**

* Ensure the system is user-friendly with large buttons, clear fonts, and features like text-to-speech for accessibility.

# **Users profile**

The primary users of the system are **older and middle-aged individuals** who often struggle with navigating modern technology. These users are typically less familiar with computers and smartphones, and they may find it challenging to perform tasks like online payments, social media usage, or identifying online scams.

#### Key User Characteristics:

* **Age Group**: 30+
* **Tech Savviness**: Low to moderate familiarity with computers, smartphones, and common software applications.
* **Learning Preferences**: These users prefer step-by-step guidance, simple interfaces, and clear, accessible instructions.
* **Common Challenges**:
  + Difficulty managing online tasks such as payments and account management, interacting with Apps and setting up common device settings .
  + Limited awareness of scams (messages, links, calls) and ways to prevent them.
  + Reliance on others for tech-related tasks due to unfamiliarity with modern software.

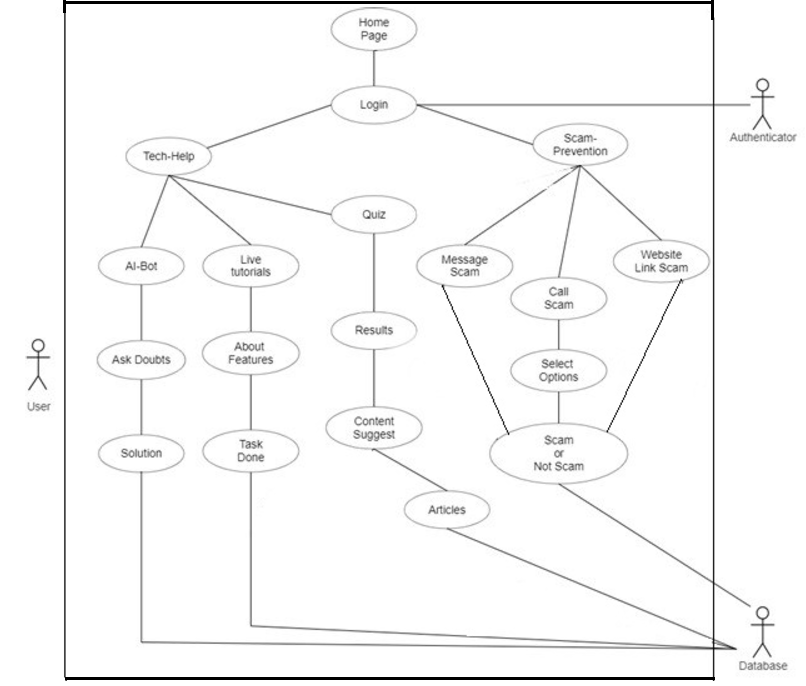
#### Modes of Interaction:

* **AI Bot**: Users will interact with the chatbot for real-time assistance, either by typing or through voice commands, depending on their comfort level.
* **Quizzes and Tutorials**: Users will take simple quizzes to improve their tech knowledge and follow interactive tutorials that guide them step-by-step in performing tasks like navigating apps.
* **Scam Prevention**: Users will receive alerts and advice regarding potential scams, with the option to take quizzes to enhance their scam awareness.
* **Accessibility Features**: Users may utilize speech-based login, text-to-speech features, and simplified navigation to accommodate their learning needs

# **Feature requirements (described using use cases)**

| **No.** | **User Case Name** | **Description** | **Release** |
| --- | --- | --- | --- |
|  | Signup and login with credentials | Signup with name , email or phone number using voice or keyboard | R1 |
|  | TechHelp AI bot | Interactive Step by Step Explanation of Required Tech related Doubts When the User ask their doubts | R2 |
|  | TechHelp Quiz-1 | User takes a Quiz to test their tech literacy , now a tailored Suggestions of Article’s and video’s and step by step explanations are suggested for learning ( App Navigation Test) | R1 |
|  | TechHelp Quiz-2 | User takes a Quiz to test your tech literacy , now a tailored Suggestions of Article’s and video’s and step by step explanations are suggested for learning ( Web Navigation, Phone settings , Payments ,Android and IOS navigation) | R2 |
|  | Scam link or popup verification | A visual stimulation of most common Digital Scam in which User has to Identify whether it is a Scam or not and then is directed to Articles which can be read | R2 |
|  | Scam messages Verification | User Can see The message and Use this feature in which the User is asked multiple questions and Based on his answers it can be identified whether it is a Scam or not | R2 |
|  | Scam Call Simulation | A Scam Call Simulation in which There is A Script in which the Scammer Asks the User Multiple Questions and User Replies with Options He chooses and finally Based on the Options he chooses the System identifies Whether the User Has been able to identify the Scam or not | R2 |
|  | TechHelp Tutorials-1 | User can do hands on tutorial practice with interactive Guidance guiding the User to navigate to the required functions of  1) WhatsApp Navigation  2) Google maps and location | R1 |
|  | TechHelp Tutorials-2 | User can do hands on tutorial practice with interactive Guidance guiding the User to navigate to the required functions of  1)Ringtone Change Settings  2)Language Change Settings | R2 |
|  | Web text to speech | User can use text to speech for any web text for any AI or chatbot answers for articles and quiz questions | R1 |
|  | Speech input to text | Users can give speech as input for consultations with chatbots and Ai assistant | R2 |
| 12. | Multilingual support | Users can choose and change their languages of Choice | R2 |
| 13. | Articles for knowledge | Based on User’s score in Quiz user is suggested articles | R1 |
| 14. | Embedded Video | Based on User’s score in Quiz user is suggested Videos | R1 |
| 15. | Voice Navigation | User can Navigate to the page he Wants to by Calling the Customized page names | R2 |

**Use case diagram**



**Use case description**

| **Use Case Number:** | UC-01 |
| --- | --- |
| **Use Case Name:** | Signup and Login |
| **Overview:** | This use case allows users to sign up using their name, email, or phone number with either voice or keyboard input and log in using the provided credentials.. |
| **Actors:** | User |
| **Pre condition:** | The user is on the signup or login screen and has access to the input method (keyboard or voice).. |
| **Flow:** | Main (success) Flow:  1. The user selects 'Signup' or 'Login'.  2. The user provides credentials (name, email, or phone number) using either voice or keyboard input.  3. The system validates the input.  4. The user creates a password for signup (if applicable).  5. The system confirms the signup/login and redirects the user to the main dashboard. |
|  | Alternate Flows:  1. Invalid Input: If the user provides invalid credentials (e.g., invalid email), the system prompts an error message and allows re-entry.  2. Forgotten Password: The user clicks 'Forgot Password' and follows the steps to recover it. |
| **Post Condition:** | The user is successfully logged in or signed up and has access to their account. |

| **Use Case Number:** | UC-02 |
| --- | --- |
| **Use Case Name:** | TechHelp AI Bot – Interactive Tech Assistance |
| **Overview:** | This use case enables users to receive step-by-step interactive explanations for tech-related queries using the TechHelp AI bot. The bot guides users through solving their doubts interactively. |
| **Actors:** | User, TechHelp AI Bot |
| **Pre condition:** | The user is connected to the TechHelp platform and initiates a query through the bot. |
| **Flow:** | Main (success) Flow:  1. The user asks a tech-related question via text or voice.  2. The AI bot interprets the query and breaks it down into simple steps.  3. The bot provides the first step of the solution interactively.  4. The user follows the instruction and confirms completion.  5. The bot proceeds with the next step, guiding the user through the entire process until the query is resolved.6. The user completes the process and confirms the issue is resolved. |
|  | Alternate Flows:  1. If the user is stuck on a step, the bot offers further assistance, alternative approaches, or video tutorials.  2. If the query is out of the bot's scope, it suggests reaching out to live support. |
| **Post Condition:** | The user successfully resolves their tech-related issue or receives guidance for further help.. |

| **Use Case Number:** | UC-03 |
| --- | --- |
| **Use Case Name:** | TechHelp Quiz – Tech Literacy Assessment |
| **Overview:** | This use case allows users to take a quiz that tests their tech literacy. Based on the results, the system provides tailored suggestions for articles, videos, and step-by-step explanations to improve their knowledge, including an app navigation test. |
| **Actors:** | User, TechHelp Quiz System |
| **Pre condition:** | The user is logged into the TechHelp platform and accesses the quiz section.. |
| **Flow:** | Main (success) Flow:  1. The user selects the 'Take a Quiz' option.  2. The quiz system presents a series of questions assessing the user's tech knowledge and app navigation skills.  3. The user answers the questions.  4. The system evaluates the user's responses and calculates a score.  5. Based on the score, the system provides tailored suggestions, including articles, videos, and interactive step-by-step tutorials.  6. The user reviews the suggestions and can choose to start learning. |
|  | Alternate Flows:  1. If the user skips questions, the system prompts them to complete the quiz.  2. If the user scores below a certain threshold, the system recommends beginner-level resources. |
| **Post Condition:** | The user receives personalized learning recommendations and can start improving their tech literacy. |

| **Use Case Number:** | UC-04 |
| --- | --- |
| **Use Case Name:** | TechHelp Quiz – Tech Literacy Assessment (Navigation & Settings) |
| **Overview:** | This use case allows users to take a quiz assessing their tech literacy in web navigation, phone settings, payments, and Android/iOS navigation. Based on the quiz results, tailored suggestions of articles, videos, and step-by-step explanations are provided to enhance learning. |
| **Actors:** | User, TechHelp Quiz System |
| **Pre condition:** | The user is logged into the TechHelp platform and starts the quiz... |
| **Flow:** | Main (success) Flow:  1. The user selects 'Take a Quiz' for tech literacy focused on web and mobile navigation.  2. The quiz presents questions related to web navigation, phone settings, payments, and Android/iOS navigation.  3. The user answers the questions.  4. The system evaluates the answers and generates a score.  5. Based on the score, the system provides tailored learning suggestions, including articles, videos, and step-by-step tutorials on the specific topics where improvement is needed.  6. The user reviews the suggestions and can begin the learning process. |
|  | Alternate Flows:  1. If the user skips or cannot answer certain questions, the system prompts them to review foundational resources first..  2. If the score is low, the system suggests beginner content tailored to specific areas like payments or phone settings. |
| **Post Condition:** | The user receives personalized learning materials and begins improving their tech literacy in the areas tested. |

| **Use Case Number:** | UC-05 |
| --- | --- |
| **Use Case Name:** | Scam Link or Popup Verification |
| **Overview:** | This use case allows users to visually identify and verify if a link or popup is a scam through a digital simulation. If the user identifies a scam, they are directed to relevant articles for further education. |
| **Actors:** | User |
| **Pre condition:** | The user has access to the Scam Verifier and encounters a suspicious link or popup. |
| **Flow:** | Main (success) Flow:  1. The system presents a visual simulation of common digital scams (e.g., fake popups, phishing emails).  2. The user reviews the simulated scenario and decides if it appears to be a scam.  3. The user clicks 'Identify as Scam' or 'Not a Scam'.  4.The system analyzes the user's input:   * If identified as a scam, the system confirms it and provides feedback. * If not identified as a scam, the system may give additional hints or feedback if the simulation was actually a scam.   5. The system displays the result, confirming whether it is a scam or not. |
|  | Alternate Flows:  If the user skips input, the system prompts them to respond. If they select 'I don't know,' the system suggests basic scam guides. Users can also access articles on common digital scams to improve their awareness. |
| **Post Condition:** | The user is informed whether the scenario was a scam or not and gains insights from educational articles, contributing to a safer browsing experience. |

| **Use Case Number:** | UC-06 |
| --- | --- |
| **Use Case Name:** | Scam Messages Verification |
| **Overview:** | This use case allows users to verify suspicious messages by answering a series of questions. Based on their responses, the system identifies whether the message is a scam or not. |
| **Actors:** | User |
| **Pre condition:** | The user has access to the Scam Verifier and encounters a suspicious message. |
| **Flow:** | Main (success) Flow:  1. The user sees a suspicious message and opens the Scam Verifier feature.  2.The system displays a series of questions about the message (e.g., sender details, unusual requests, links present).  3. The user answers the questions based on the message details.  4.. The system analyzes the answers provided by the user.  5. The system displays the result, indicating whether the message is likely a scam or not.  6. If identified as a scam, the user is provided with tips on how to handle the situation safely. |
|  | Alternate Flows:  If the user skips any questions, the system prompts them to answer for better accuracy. If unsure, the user can select 'Not Sure,' and the system provides general tips on recognizing scams. |
| **Post Condition:** | The user is informed whether the message is a scam, with additional tips for identifying similar threats in the future. |

| **Use Case Number:** | UC-07 |
| --- | --- |
| **Use Case Name:** | Scam Call Simulation |
| **Overview:** | This use case simulates a scam call scenario where a scammer asks the user multiple questions. The user responds by selecting from provided options, and based on their answers, the system determines whether they have successfully identified the scam. |
| **Actors:** | User |
| **Pre condition:** | The user has access to the Scam Call Simulation feature. |
| **Flow:** | Main (success) Flows:  1. The system simulates a scam call, with the scammer asking multiple questions (e.g., personal information, urgent requests).  2. The user listens to the questions and selects answers from predefined options (e.g., "Yes," "No," "I’m not sure").  3. Based on the user's responses, the system evaluates if they are identifying red flags and signs of a scam.  4. The system informs the user if they successfully identified the scam or missed key indicators.  5. If the user identifies the scam, the system provides feedback and safety tips. If they fail, the system offers guidance on common scam tactics. |
|  | Alternate Flows:  f the user skips a question, the system prompts them to answer for accurate assessment. If the user selects 'I’m not sure' for most questions, the system offers additional educational resources on identifying scams. |
| **Post Condition:** | The user is informed whether they identified the scam or not, and provided tips to avoid falling for similar scams in the future. |

| **Use Case Number:** | UC-08 |
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| **Use Case Name:** | TechHelp Tutorials – Interactive Navigation Guidance |
| **Overview:** | This use case allows users to engage in hands-on tutorials with interactive guidance, helping them navigate essential functions of WhatsApp and Google Maps for location services. |
| **Actors:** | User, TechHelp Tutorial System |
| **Pre condition:** | The user is logged into the TechHelp platform and has access to the tutorials section. |
| **Flow:** | Main (success) Flow:  1. The user selects the 'Hands-On Tutorial' option for WhatsApp or Google Maps.  2. The tutorial presents an interactive interface with step-by-step guidance.  3. The user follows the on-screen instructions to navigate to the required functions (e.g., sending a message on WhatsApp or sharing a location on Google Maps). 4. The system provides real-time feedback and tips based on the user's actions.  5. The user completes the tutorial tasks successfully and gains confidence in using the applications. |
|  | Alternate Flows:  1. If the user encounters difficulties, the system offers additional hints or alternative instructions.  2. If the user skips a step, the system prompts them to go back and complete it before proceeding.The user successfully completes the tutorial and is able to confidently navigate the essential functions of WhatsApp and Google Maps. |
| **Post Condition:** | The user receives personalized learning resources to enhance their knowledge of scam prevention and is encouraged to apply what they’ve learned. |

| **Use Case Number:** | UC-9 |
| --- | --- |
| **Use Case Name:** | TechHelp Tutorials – Comprehensive Interactive Guidance |
| **Overview:** | This use case allows users to engage in hands-on tutorial practice with interactive guidance, helping them navigate essential functions of various applications and settings, including payment apps, Android and iOS settings, and more. |
| **Actors:** | User, TechHelp Tutorial System |
| **Pre condition:** | The user is logged into the TechHelp platform and has access to the tutorials section. |
| **Flow:** | Main (success) Flow:  1. The user selects the 'Hands-On Tutorial' option for one of the available topics.  2. The tutorial presents an interactive interface with step-by-step guidance for the chosen topic (e.g., Payment Apps or Google Account Management).  3. The user follows the on-screen instructions to navigate to the required functions (e.g., setting up payment methods, adjusting privacy settings).  4. The system provides real-time feedback and tips based on the user's actions.  5. The user completes the tutorial tasks successfully and gains confidence in using the applications and settings. |
|  | Alternate Flows:  1. If the user encounters difficulties, the system offers additional hints or alternative instructions.  2. If the user skips a step, the system prompts them to go back and complete it before proceeding. |
| **Post Condition:** | The user successfully completes the tutorial and is able to confidently navigate essential functions across a variety of applications and settings. |

| **Use Case Number:** | UC-10 |
| --- | --- |
| **Use Case Name:** | Web Text-to-Speech Functionality |
| **Overview:** | This use case allows users to convert any web text into speech, enabling them to listen to AI or chatbot answers, articles, and quiz questions. |
| **Actors:** | User, Text-to-Speech System |
| **Pre condition:** | The user is on a webpage containing text to convert to speech.. |
| **Flow:** | Main (success) Flow:  1. The user highlights the text they wish to convert to speech.  2. The user selects the 'Read Aloud' option or clicks a text-to-speech button.  3. The system processes the text and converts it into speech.  4. The audio output is played, allowing the user to listen to the content.  5. The user can pause, resume, or stop the audio playback as needed. |
|  | Alternate Flows:  1. If the text is too long, the system prompts the user to shorten the selection or convert it in segments.  2. If the audio playback fails, the system provides troubleshooting suggestions (e.g., checking audio settings). |
| **Post Condition:** | The user successfully listens to the converted text, enhancing their understanding of the content.. |

| **Use Case Number:** | UC-11 |
| --- | --- |
| **Use Case Name:** | Speech Input to Text Functionality |
| **Overview:** | This use case enables users to provide speech input for consultations with chatbots and AI assistants, converting their spoken words into text for further processing. |
| **Actors:** | User, Speech Recognition System |
| **Pre condition:** | The user is on the chatbot or AI assistant interface, ready to input speech. |
| **Flow:** | Main (success) Flow:  1. The user clicks the 'Microphone' icon or activates the speech input feature.  2. The system prompts the user to speak clearly.  3. The user provides their speech input.  4. The system captures the audio and converts it into text.  5. The converted text is displayed in the chat interface for the chatbot or AI assistant to process.  6. The user can edit the text if needed before submission. |
|  | Alternate Flows:  1. If the speech input is unclear, the system prompts the user to repeat or clarify their input.  2. If the microphone is not functioning, the system provides troubleshooting steps. |
| **Post Condition:** | The user successfully provides speech input, which is converted to text and processed by the chatbot or AI assistant for consultation. |

| **Use Case Number:** | UC-12 |
| --- | --- |
| **Use Case Name:** | Multilingual Support Functionality |
| **Overview:** | This use case allows users to select and change their preferred languages within the application, enhancing accessibility and user experience. |
| **Actors:** | User, Multilingual Support System |
| **Pre condition:** | The user is logged into the application and is on a page with language options available. |
| **Flow:** | Main (success) Flow:  1. The user accesses the language settings option from the menu.  2. The system displays a list of available languages.  3. The user selects their preferred language from the list.  4. The system updates the application interface and content to the selected language  5. The user confirms the change and continues using the application in their chosen language. |
|  | Alternate Flows:  1. If the user selects a language not supported by the system, a message informs them of the limitation  2. If the user cancels the language change, the system retains the previous language setting. |
| **Post Condition:** | The user successfully changes the application language, and all text is displayed in the selected language. |

| **Use Case Number:** | UC-13 |
| --- | --- |
| **Use Case Name:** | Article Suggestions Based on Quiz Score |
| **Overview:** | This use case suggests articles to users based on their scores in quizzes, providing tailored content to enhance their knowledge. |
| **Actors:** | User, Article Recommendation System |
| **Pre condition:** | The user has completed a quiz, and their score has been calculated. |
| **Flow:** | Main (success) Flow:  1. The user finishes the quiz, and the system calculates the score.  2. The system analyzes the score and identifies relevant articles for the user.  3. The system presents a list of suggested articles related to the user's performance.  4. The user reviews the suggestions and can click on articles to read them.  5. The user can bookmark or save articles for later reference. |
|  | Alternate Flows:  1. If no articles are found related to the score, the system suggests general articles on the topic.  2. If the user does not wish to see article suggestions, they can opt out of this feature. |
| **Post Condition:** | The user receives tailored article suggestions that align with their quiz performance, aiding in their learning process. |

| **Use Case Number:** | UC-14 |
| --- | --- |
| **Use Case Name:** | Video Suggestions Based on Quiz Score |
| **Overview:** | This use case suggests videos to users based on their scores in quizzes, providing tailored content to enhance their knowledge. |
| **Actors:** | User, Video Recommendation System |
| **Pre condition:** | The user has completed a quiz, and their score has been calculated.. |
| **Flow:** | Main (success) Flow:  1. The user finishes the quiz, and the system calculates the score.  2. The system analyzes the score and identifies relevant videos for the user.  3. The system presents a list of suggested videos related to the user's performance.  4. The user reviews the suggestions and can click to play the videos directly within the platform  5. The user can save or bookmark videos for later viewing. |
|  | Alternate Flows:  1. If no videos are found related to the score, the system suggests general videos on the topic.  2. If the user does not wish to see video suggestions, they can opt out of this feature. |
| **Post Condition:** | The user receives tailored video suggestions that align with their quiz performance, aiding in their learning process. |

| **Use Case Number:** | UC-15 |
| --- | --- |
| **Use Case Name:** | Voice Navigation |
| **Overview:** | This use case allows users to navigate to different pages by speaking customized page names, providing a hands-free browsing experience.. |
| **Actors:** | User |
| **Pre condition:** | The user has access to the Voice Navigation feature and the system recognizes voice commands. |
| **Flow:** | Main (success) Flow:  1. The user activates the Voice Navigation feature by speaking the trigger phrase (e.g., "Navigate to...").  2. The system listens for the user's voice command.  3. The user says the name of the page they want to visit (e.g., "Home Page," "Settings," "Contact Us").  4. The system recognizes the command and navigates to the corresponding page.  5. The system confirms the navigation by providing visual or audio feedback (e.g., "You are now on the Home Page"). |
|  | Alternate Flows:  If the system doesn't recognize the command, it prompts the user to repeat the page name. If the user says an invalid or unrecognized page name, the system asks for a valid page name. |
| **Post Condition:** | The user is successfully navigated to the requested page using voice commands. |