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| **LinguaLearn | Translation App** | An innovative language learning application that offers a multitude of features to facilitate and enhance the language learning experience. Whether you're a beginner or an advanced learner, this app provides a versatile platform to engage with and master a new language.  Meher Amir(22i1973) | Sahil Kumar(22i2048) | Raiha Adnan (22i1875) |

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| **Subject**: Software Development Project |
| **Project** **Name**: LinguaLearn - Translation App |
| **Group** **Members**: Meher Amir(22i1973) | Sahil Kumar(22i2048) | Raiha Adnan (22i1875) |
| **Deliverable** **Number**: D1 |
| **Date of Submission**: November 10, 2023 |

**Main Body**

**a. Project Title and Introduction**

LinguaLearn is a language learning and translation application designed to assist users in learning new languages and enhancing their translation capabilities. LinguaLearn is a versatile language learning and translation software that offers a comprehensive platform for language enthusiasts and those seeking efficient translation services. It allows users to select the language they wish to learn, tailoring content and interactions accordingly, making it accessible for learners from diverse linguistic backgrounds. What sets LinguaLearn apart is its interactive AI conversations, which simulate real-life interactions in the target language, enabling users to engage with AI characters in real-time conversations. Additionally, the software employs speech recognition technology to evaluate users' pronunciation and fluency, providing immediate feedback and enhancing speaking skills. Offline mode ensures uninterrupted learning, even in areas with limited connectivity, and the vocabulary builder offers cultural insights and etiquette advice to deepen users' understanding of language nuances. With translation services, progress tracking, and a holistic approach to language learning, LinguaLearn offers a comprehensive language learning and translation experience that caters to a wide range of user needs. This document outlines the contents for Sprint 1, where we aim to develop key features and functionality of the app. Sprint 1 serves as the foundation for the LinguaLearn application, setting in motion the development of key features that make the app a powerful language learning and translation tool. It emphasizes personalization, interactivity, and feedback to enhance the language learning experience. As this sprint progresses, the app will be closer to offering users a comprehensive platform for learning new languages and improving their translation skills.

**b. User Stories**

Certainly, let's explain the selected user stories for development in Sprint 1 and their associated sub-user stories:

**1) User Interface for Login and Sign-Up:**

In this user story, the focus is on creating a user-friendly interface for the login and sign-up processes, including options for users to log in via Facebook, Google, or sign up for a new account. These authentication methods will make it easy for users to access the LinguaLearn app.

**2) Language Selection:**

**User Story:** Users should be able to select source and target languages for translations.

**Sub-User Stories:**

* **Display a user-friendly interface for language selection:** This sub-user story involves designing an intuitive and visually appealing interface for users to choose their source and target languages. This ensures ease of use.
* **Provide a list of supported languages:** LinguaLearn will need to compile and display a list of languages that users can choose from. This list may be extensive and should be regularly updated to reflect the app's language offerings.
* **Allow users to set a default source and target language:** This sub-user story is about enabling users to set their preferred source and target languages as defaults, ensuring a more convenient and personalized experience.

**3) Interactive AI Conversations:**

**User Story:** Users want to have interactive conversations with an AI assistant to improve their language skills.

**Sub-User Stories:**

* **Create a conversational AI interface:** This involves the development of an AI interface that can engage in conversations with users. It should be capable of natural and interactive communication.
* **Implement natural language processing for meaningful interactions:** To provide a valuable language learning experience, the AI should be able to understand and respond to user input effectively. Natural language processing techniques will be employed for this purpose.
* **Track and analyze user conversations to personalize the experience:** LinguaLearn aims to personalize interactions, and this sub-user story involves the development of features to analyze user conversations, track progress, and adapt the AI's responses accordingly.

**4) Translation:**

**User Story:** Users want the app to assist in pronunciation and language learning by recognizing and analyzing their speech.

**Sub-User Stories:**

* **Integrate a speech recognition system:** The application will incorporate a speech recognition system capable of understanding and analyzing user speech.
* **Provide real-time feedback on pronunciation and intonation:** This feature is designed to offer immediate feedback on how well users pronounce words and phrases, helping them improve their pronunciation and intonation.
* **Offer translation based on spoken language:** Users will be able to practice speaking in the source language, and the system will provide translations in the target language based on their spoken input.

These selected user stories and their sub-user stories represent critical components of LinguaLearn's functionality in Sprint 1. The development team will work on implementing these features, ensuring that the application aligns with the vision of offering a comprehensive language learning and translation experience. Each user story contributes to making LinguaLearn a valuable tool for language enthusiasts and learners.

**c. Structured Specifications for User Story 1: Language Selection**

**Specification 1: Language Selection Interface**

This specification outlines the requirements for the Language Selection Interface in LinguaLearn. The purpose of this interface is to allow users to easily choose the languages they want to work with, whether it's for language learning or translation purposes. Here are the key aspects of this specification:

**1. User-Friendly Interface:** The language selection interface should be designed to be highly user-friendly. It should provide an intuitive and visually appealing experience for users. This means that the interface should be clear, easy to navigate, and aesthetically pleasing. Users should be able to access this feature without confusion.

**2. Dropdown Menus for Source and Target Languages**: The interface should include dropdown menus for both source and target languages. These dropdown menus are essential for users to specify the languages they are currently working with (source language) and the language to which they want translations or language learning content (target language). Dropdown menus make language selection simple and organized.

**3. Access to a Wide Range of Supported Languages:** LinguaLearn aims to be inclusive and accommodate users from various linguistic backgrounds. Therefore, the application should provide access to a diverse and extensive list of supported languages. This means that users should have the option to select from a broad range of languages, ensuring that their language preferences are met, whether they are learning a less commonly taught language or a widely spoken one.

**4. Setting Preferred Default Languages:** To enhance the user experience, LinguaLearn should allow users to set their preferred default source and target languages. This functionality is about personalization. Users can set the languages they use most frequently as defaults, saving them time and ensuring a more convenient and personalized experience. This means that when they use the app, their chosen source and target languages will already be selected, and they won't need to adjust these settings repeatedly.

Overall, Specification 1 emphasizes the importance of a user-friendly, inclusive, and customizable language selection interface in LinguaLearn. This interface will be a fundamental component of the application, ensuring that users can easily set and adjust their language preferences to suit their individual language learning and translation needs.

**Specification 2: Supported Languages**

This specification details the requirements for managing and maintaining the list of supported languages in the LinguaLearn application. The list of supported languages is crucial for the translation and language learning functionalities of the app. Here's a breakdown of the key elements of this specification:

**1. List of Supported Languages:** The LinguaLearn application must maintain a comprehensive list of supported languages for translation. This list serves as the foundation for users to select their source and target languages, enabling them to translate and learn in the languages of their choice. The list should cover a wide range of languages to cater to a diverse user base.

**2. Up-to-Date and Regularly Updated:** It is imperative that the list of supported languages is kept up-to-date. Languages evolve, and new dialects and languages may emerge over time. LinguaLearn should ensure that the list is regularly updated to reflect these changes. This means that any additions, modifications, or removals of languages or dialects must be promptly implemented to maintain accuracy and relevancy.

**3. Inclusion of New Languages and Dialects:** LinguaLearn should be proactive in including new languages and dialects that become relevant or popular. Language is dynamic, and the application should adapt to accommodate emerging linguistic needs. Whether it's a new dialect spoken in a specific region or a language gaining global prominence, the app should be ready to add these to its list of supported languages.

By adhering to Specification 2, LinguaLearn ensures that its users have access to an up-to-date and diverse range of languages for translation and language learning. This proactive approach to language support enables the application to stay relevant and inclusive in the ever-changing linguistic landscape.

**Specification 3: Default Language Setting**

This specification outlines the requirements related to the default language settings in the LinguaLearn application. The default language setting is important for ensuring a personalized and convenient user experience. Here are the key elements of this specification:

**1. User-Configurable Default Languages:** LinguaLearn should allow users to set their default source and target languages in their profile settings. This feature enhances the user experience by eliminating the need to select their preferred languages each time they use the app. Users can configure these settings to align with their most frequently used languages.

**2. Persistence Across Sessions**: Once users configure their default language settings, it is crucial that these settings persist across different app sessions. Regardless of whether the user logs out, closes the app, or accesses it from another device, their chosen default source and target languages should remain unchanged.

**3. Ease of Adjustment:** While LinguaLearn offers users the flexibility to set default languages, it should also ensure that these settings are easily adjustable. Users may want to change their default languages for various reasons, and the app should provide a straightforward and intuitive way to make such adjustments.

**Specification 4: User Guidance**

This specification pertains to providing clear and concise user guidance within the LinguaLearn application, particularly in the context of language selection. The aim is to assist users in choosing the most appropriate source and target languages for their translation needs. Here are the key elements of this specification:

**1. Clear and Concise Guidance:** LinguaLearn should offer clear and concise guidance to users when they are selecting source and target languages. This guidance could be in the form of explanatory text, prompts, or labels that help users understand the purpose of these language selections and make informed choices.

**2.Tooltips or Explanations:** In cases where users might encounter complex or unfamiliar language pairings, LinguaLearn should provide tooltips or explanations. These additional information snippets can offer insights into the context and potential use cases for specific language selections, making the decision-making process more straightforward.

LinguaLearn enhances the user experience by allowing users to customize their default languages for convenience and by providing clear guidance to help them choose the most suitable source and target languages for their translation and language learning needs. This thoughtful approach contributes to a user-friendly and informative application interface.

**2. Scrum Board**

We have set up our Trello board to manage the Sprint 1 tasks. The Trello board will be managed by our team leads. Here are the three snapshots as requested:

**Snapshot 1:**

**Snapshot 2:**

**Snapshot 3:**

**NFR Specification:**

Non-functional requirements (NFRs) are the quality attributes or constraints that describe how a system performs its functions. They specify the "how" of a system's behavior, focusing on attributes like performance, scalability, security, usability, and maintainability. In the context of user stories, NFRs help ensure that the system meets the desired non-functional characteristics. Now, let's identify the non-functional requirements implied by these user stories and specifications:

**Usability:**

* The language selection interface should be user-friendly.
* Clear and concise guidance should be provided.
* Tooltips and explanations should be available for user assistance.
* Performance:

**Scalability:**

* The app should be able to support a wide range of supported languages.
* The list of supported languages should be regularly updated, indicating scalability in terms of data management.

**Security:**

* If language preferences are stored in user profiles, ensure that they are stored securely.
* Maintainability:
* The list of supported languages should be up-to-date, indicating that the system must be easily maintainable in terms of data updates.

**Reliability:**

* The default language setting should persist across app sessions, ensuring a reliable user experience.
* These non-functional requirements help ensure that the language selection feature not only works but also works well, efficiently, securely, and remains maintainable in the long term. It also ensures that the system offers good user experience and performs reliably.

**Work Division:**

**1. Team Lead (Scrum Master): (Sahil Kumar)**

Sahil plays a pivotal role in the agile development process by facilitating various aspects of the team's workflow. During Sprint Planning, he takes the lead in guiding the team through the selection of user stories and the setting of sprint goals, ensuring that the team is aligned with project objectives. He maintains a proactive presence in daily stand-up meetings, where he ensures that team members report their progress, and any impediments are promptly addressed. Task coordination is another area where Sahil excels, making sure that responsibilities are clear and well-distributed among team members. Additionally, he meticulously manages the Trello board, ensuring that it accurately reflects the status of tasks and user stories, providing the team with a clear and organized view of their project's progress. Sahil's contributions are instrumental in keeping the team on track and delivering high-quality results in an agile development environment.

**2. Designer (UX/UI Specialist): (Meher Amir)**

Meher plays a crucial role in enhancing the user interface and experience design of the LinguaLearn app. She dedicates her efforts to crafting visually appealing and user-friendly interfaces by creating wireframes, mockups, and design prototypes for the application. Her collaboration with the development team is vital, as it ensures that design elements are seamlessly integrated into the app, resulting in a cohesive user experience. Meher follows an iterative design approach, allowing her to adapt to changing requirements and continuously refine the design throughout each sprint. Her commitment extends to actively participating in Sprint Reviews, where she presents her completed design work to stakeholders and team members, gathering valuable feedback to further enhance the app's usability and aesthetics. Meher's contribution significantly contributes to the overall success of the LinguaLearn app by providing an engaging and well-crafted user experience.

**3. Project Manager (Product Owner Role): (Raiha Adnan)**

In the agile development process, Raiha plays a crucial role in ensuring the success of the sprint. She collaborates with the team to prioritize user stories, focusing on delivering the most valuable features in Sprint 1. Raiha also places a strong emphasis on requirement clarity, ensuring that user stories are well-defined with clear acceptance criteria, which serves as a guide for the development team. During the Sprint Review, she works closely with the team lead to accept user stories as "done." Additionally, Raiha excels in stakeholder communication, effectively managing feedback and expectations. On the other hand, the development team takes charge of implementing the technical aspects of selected user stories, actively participating in daily stand-up meetings to share progress and coordinate efforts. They engage in collaborative problem-solving with the team lead to overcome any impediments and embrace iterative development, making continuous improvements based on feedback and changing requirements throughout the sprint. Together, Raiha and the development team ensure a well-organized and adaptive sprint process.

This work division ensures that each team member has clear responsibilities and that their roles align with the Scrum framework. It facilitates efficient collaboration, allows for adaptability, and helps meet the sprint objectives effectively. Additionally, it's essential to maintain open communication among team members to ensure a successful Sprint 1. This document outlines our progress in Sprint 1 and provides the necessary information and artifacts as per the project requirements.