Final Project Documentation

Contents

Talkify

Introduction

Talkify is a virtual assistant aimed at bringing voice-activated functionality to Windows, allowing users to interact with their computer through voice commands. With a strong focus on Human-Computer Interaction (HCI) principles, Talkify ensures a seamless and user-friendly experience, making everyday tasks more intuitive and efficient, all through the power of voice control.

Features:

- Voice-Controlled Operations:
- Custom Voice Commands:
- Instructions Page
- Voice Prompt
- Application Path Amendment:

Operations Performed Through Voice

- **Play Music:** Enjoy your favorite tunes with a simple voice command.

- **Volume Control:** Adjust the volume with ease using voice commands.

- **Brightness Control:** Seamlessly control screen brightness through voice prompts.

- **Web Search:** Search the web effortlessly by vocalizing your queries.

- **Weather Update:** Get real-time weather updates for any city with a voice command.

- **Date Information:** Obtain today's date with a simple voice prompt.

Flow One: Operation Performing

Interaction Description: From the home screen, the user is presented with one call to action button: on which after clicking the Talkify starts listening to its user. Now User can perform any operation as indicated in the feature list by just talking with our app

Universal Design:

- **Multi-Modal Interaction:** Incorporating voice commands as a means of interaction introduces a multi-sensory approach by utilizing both auditory (speech) and potentially visual (on-screen feedback) channels. This multi-modal interaction caters to users with different sensory preferences or limitations, enhancing accessibility.

- **Error Tolerance in Speech Recognition:** The system's ability to understand and process spoken commands reflects tolerance for error in speech recognition. It includes features that interpret a range of spoken inputs, accommodating variations in pronunciation, accent, or phrasing, allowing users to interact comfortably even with occasional recognition errors.
- **Natural Interaction:** Utilizing speech as a primary means of interaction makes the system intuitive and natural for users. This aligns with creating an interface that users can easily grasp and employ without extensive learning or navigation.

Flow Two: Home Screen to Add Command Operation

Interaction Description: Within the Settings screen, selecting the "Add Command" option navigates the user to the Add Command page. Here, users can input a command, and upon entering the correct path, they receive a success message; otherwise, an error message is displayed.

Norman's Principles and Golden Rules:

- **Perceptible Information:** The system provides feedback (success/error messages) promptly upon user action, ensuring perceptibility and aiding users in understanding the outcome of their input.
- **Tolerance for Error:** By notifying users of incorrect paths, the system exhibits tolerance for error. It guides users to rectify mistakes rather than halting the process entirely.
- **Consistency:** The layout and functionality remain consistent across screens, enhancing predictability and reducing cognitive load for users.
- **Simple and Intuitive to Use**: The interface offers clear, distinct buttons for different functionalities (voice activation, menu). This simplicity aids in intuitive navigation, allowing users to easily access desired features.

HCI Models Considered:

- **GOMS Model**: While not explicitly detailed in the flows, the GOMS model could assess the overall efficiency of the system in terms of executing tasks (e.g., time taken to add a command, navigating through screens).
- **KLM Model:** The KLM model could be utilized to estimate the time required for specific actions, such as activating voice recognition or accessing settings from the home screen.

Other HCI Concepts Used

Navigation Design

Mechanisms Used to Interact with the User:

- **Hamburger Menu:** This is used to offer additional navigation options and access various screens, such as settings.
- **Breadcrumbs:** These are employed to indicate the user's current location within the navigation system.

- **Call to Action Buttons:** These are utilized to initiate voice input listening.

Interaction Styles:

- **Point-and-Click Interface:** All screens contain buttons, making it a fundamental method for user interaction.
- **Windows:** Error windows have been added to the user interface.
- **Pointers:** A pointer is used to interact with the software and initiate voice input.
- **Buttons:** Various buttons are utilized, including those for starting and stopping voice input.

GitHub Link

Find the complete project on GitHub at https://github.com/AhmadShamailButt/HCI-Project-Talkify . The repository includes the entire codebase. To run the project, clone the repository using 'git clone, navigate to the project directory, install dependencies, configure settings, and run the project using the provided command. Access the application through your web browser at the specified URL or port. For additional details, refer to the repository on GitHub.