US1

As an OlderPerson, I want to know exactly what ALFRED does with my personal data, and share it only on my specific permission.

Related Information

- **User Needs**: Understanding data usage and control over personal data.
- **Purpose**: To ensure transparency and user control over personal data.

Technical Requirements

1. Implement a user interface that clearly displays what personal data is collected, how it is used, and the purposes for which it is shared.
2. Develop a consent management system that allows users to grant or revoke permissions for data sharing at any time.
3. Ensure compliance with the European Data Protection Directive (95/46/EC), specifically Article 6, which mandates fair and lawful processing of personal data.
4. Create a logging mechanism to track user consent and data sharing actions for auditing purposes.
5. Ensure that all data processing activities are transparent and documented, with clear communication to users about their rights regarding their personal data.

Feasibility Feedback

- The user story is technically feasible, provided that the necessary user interface and backend systems are developed to manage data transparency and consent. There may be potential risks related to user understanding of data usage, which can be mitigated through user education and clear communication.

Acceptance Criteria

1. The user interface must display all collected personal data and its usage clearly.
2. Users must be able to grant or revoke permissions for data sharing easily.
3. Compliance with the European Data Protection Directive must be demonstrated.
4. A logging mechanism must be in place to track user consent and data sharing actions.
5. Users must receive clear communication regarding their rights and data processing activities.

User Value
This user story delivers value by empowering older users with knowledge and control over their personal data, enhancing their trust in the ALFRED system and ensuring compliance with data protection laws.

US2

As an OlderPerson, I want to use ALFRED as much as possible with speech interaction.

Related Information

- **User Needs**: The ability to interact with ALFRED using speech to enhance usability and accessibility.
- **Purpose**: To provide a seamless and user-friendly experience for older users who may have difficulty with traditional input methods.

Technical Requirements

1. Implement a speech recognition system that accurately understands commands from older users, taking into account potential speech variations and clarity.
2. Develop a push-to-talk feature that allows users to activate speech interaction with a physical button, ensuring they have control over when to engage with ALFRED.
3. Ensure that ALFRED provides clear auditory feedback, speaking loudly and clearly to enhance user understanding.

4. Integrate a user-friendly interface that allows users to easily access speech interaction features without extensive technical knowledge.
5. Include a tutorial or help feature that explains how to use speech interaction effectively, addressing common concerns and questions from users.
6. Enable wake-word activation for speech interaction, such as 'Hey ALFRED', ensuring the system can recognize and respond to this command effectively.
7. Test the wake-word activation feature for effectiveness and user satisfaction, ensuring it works in various environments and is reliable for older users.

Feasibility Feedback

- The user story remains technically feasible with the addition of wake-word activation. However, implementing this feature may require additional resources for testing and refinement to ensure it meets user expectations, especially in terms of accuracy and responsiveness in different environments.

Acceptance Criteria

1. The speech recognition system must accurately understand at least 90% of commands from older users.
2. The push-to-talk feature must be easily accessible and functional for users.
3. Auditory feedback must be clear and loud enough for users to understand.
4. The interface must be intuitive and require minimal technical knowledge to navigate.
5. The tutorial or help feature must effectively address common user concerns and questions.
6. The wake-word activation feature must be tested for effectiveness and user satisfaction in various environments.

User Value
This user story delivers value by enabling older users to interact with ALFRED through speech, enhancing usability and accessibility, and fostering independence for those with age-related impairments.

US3

As an OlderPerson, I want to have an ALFRED device that only listens to me when I ask it to.

Related Information

- **User Needs**: The ability to control when the ALFRED device listens to ensure privacy and security.
- **Purpose**: To provide users with confidence that their conversations are not being overheard without their consent.

Technical Requirements

1. Implement a voice recognition system that can accurately learn and recognize the user's voice over time, ensuring that ALFRED only responds to that specific voice.
2. Develop a training mode where users can teach ALFRED their voice through a series of phrases, enhancing the accuracy of voice recognition.
3. Ensure that the voice recognition system can differentiate between the user's voice and other voices in the environment to prevent unauthorized activation.
4. Integrate a feedback mechanism that allows users to confirm or correct ALFRED's understanding of their voice, improving the system's learning process.
5. Include a privacy setting that allows users to temporarily disable voice recognition if they choose, ensuring they have full control over when ALFRED listens.
6. Implement a physical button that users can press to activate the listening mode, ensuring that the device only listens when explicitly requested.
7. Develop a visual indicator (e.g., LED light) that shows when the device is actively listening to provide users with clear feedback.

Feasibility Feedback

- The user story is technically feasible, as current voice recognition technologies can be trained to recognize specific voices. However, the effectiveness of the system will depend on the quality of the training data and the environment in which

ALFRED operates. Thorough testing will be necessary to ensure reliability and user satisfaction.

Acceptance Criteria

1. The voice recognition system must accurately learn and recognize the user's voice within a specified number of training phrases.
2. The training mode must allow users to effectively teach ALFRED their voice.
3. The system must successfully differentiate between the user's voice and other voices in at least 90% of tests.
4. The feedback mechanism must allow users to confirm or correct ALFRED's understanding of their voice.
5. The privacy setting must allow users to disable voice recognition easily and effectively.
6. The physical button must be easily accessible and functional for users.
7. The visual indicator must clearly show when the device is listening.

User Value
This user story delivers value by empowering older users to control when the ALFRED device listens, enhancing their sense of privacy and security, and fostering trust in the technology.

US4

As an OlderPerson, I want to have an ALFRED device that can be easily adapted for users that have visual or hearing troubles.

Related Information

- **User Needs**: The ability to customize the ALFRED device to accommodate users with visual or hearing impairments, ensuring accessibility and usability for all users, including those with color blindness or complete blindness.
- **Purpose**: To provide an inclusive experience for all users, regardless of their sensory abilities.

Technical Requirements

1. Implement customizable font sizes and styles for text displayed on the ALFRED device to accommodate users with visual impairments, including options for braille display compatibility.
2. Develop a color contrast adjustment feature to enhance readability for users with low vision and color blindness, including preset themes for common types of color blindness.
3. Integrate auditory feedback options, such as adjustable volume levels and speech clarity settings, to assist users with hearing impairments.
4. Include a feature that allows users to repeat the last spoken phrase for better comprehension.
5. Ensure that all buttons and touchpoints on the device are large enough for easy manipulation by users with dexterity issues.
6. Provide visual indicators (e.g., flashing lights) for alerts and notifications to assist users with hearing impairments.
7. Create a user-friendly setup process that includes clear instructions and support for customizing accessibility features.
8. Implement a screen reader feature that provides audio descriptions of on-screen content for users who are blind or have severe visual impairments, including navigation instructions and content summaries.
9. Include tactile feedback on buttons and touchpoints to assist users with visual impairments in identifying controls by touch.

Feasibility Feedback

- The user story is technically feasible, as current technologies can support customizable accessibility features. However, thorough user testing will be necessary to ensure that these features meet the needs of users with varying degrees of visual and hearing impairments, particularly for those who are blind or have severe visual impairments.

Acceptance Criteria

1. Customizable font sizes and styles are implemented and functional.
2. Color contrast adjustment feature enhances readability for users with low vision and color blindness.
3. Auditory feedback options are adjustable and assist users with hearing impairments.
4. The repeat phrase feature is functional and effective.

5. Buttons and touchpoints are large and easy to manipulate.
6. Visual indicators for alerts are clear and effective.
7. The setup process is user-friendly and supports accessibility customization.
8. The screen reader feature provides accurate audio descriptions of on-screen content.
9. Tactile feedback effectively assists users in identifying controls by touch.

User Value
This user story delivers value by ensuring that older users with visual or hearing impairments can effectively use the ALFRED device, enhancing their overall experience and promoting inclusivity.

US5

As an OlderPerson, I want to use ALFRED to contact help in case of an emergency.

Related Information

- **User Needs**: The ability to quickly and easily contact help during an emergency situation to ensure safety and security, even if the user is unable to call for help themselves.
- **Purpose**: To provide users with a reliable means of communication in critical situations, including automatic detection of emergencies.

Technical Requirements

1. Implement a dedicated emergency button on the ALFRED device that users can press to immediately contact help.
2. Develop a feature that allows users to set up emergency contacts (e.g., family members, caregivers) that ALFRED can reach out to in case of an emergency.
3. Integrate a voice command feature that enables users to verbally request help, such as saying 'ALFRED, I need help!'
4. Ensure that ALFRED can send location information to emergency contacts or services to facilitate quick assistance.
5. Include a confirmation feature that alerts the user when help has been contacted, providing reassurance.
6. Create a user-friendly setup process that allows users to easily configure their emergency contacts and preferences.
7. Ensure that the device is wearable and waterproof, allowing users to carry it with them at all times, including during physical activities.
8. Integrate health monitoring sensors that can detect irregular heart rates or other concerning health indicators, automatically contacting help if necessary.
9. Implement a feature that listens for unusual sounds or lack of movement, triggering an emergency call if the user appears to be in distress.
10. Develop a fall detection feature that automatically contacts emergency services if the device detects a fall and the user does not respond within a specified time frame.

Feasibility Feedback

- The user story is technically feasible, as the implementation of emergency communication features and health monitoring technologies is supported by existing technologies. However, thorough testing will be necessary to ensure reliability and user satisfaction, particularly in high-stress situations and for automatic detection features.

Acceptance Criteria

1. The emergency button is easily accessible and functional.
2. Users can set up emergency contacts without difficulty.
3. The voice command feature accurately recognizes the command to request help.
4. The system successfully sends location information to emergency contacts in at least 90% of tests.
5. The confirmation feature provides clear feedback when help is contacted.
6. The setup process is intuitive and user-friendly.
7. The device is wearable and waterproof.
8. Health monitoring sensors accurately detect irregular heart rates and trigger emergency calls.
9. The sound detection feature effectively identifies unusual sounds or lack of movement.

10. The fall detection feature automatically contacts emergency services when needed.

User Value
This user story delivers value by ensuring that older users can quickly and easily contact help in emergencies, enhancing their safety and security, and fostering trust in the ALFRED device.

US6

As an OlderPerson, I want to receive a medicine reminder from ALFRED.

Related Information

- **User Type**: OlderPerson
- **Feature**: Medicine Reminder
- **Purpose**: To ensure timely medication intake.

Product Details

- **Product Name**: ALFRED
- **Functionality**: Sends reminders for medication.

Technical Requirements

1. The system must allow users to set multiple reminder times for different medications.
2. Reminders should be sent via push notifications, SMS, and voice alerts, depending on user preference.
3. The reminder message must include the name of the medication, dosage, and time to take it.
4. The system should store user preferences for reminders securely and allow for easy updates.
5. The application must be compatible with both iOS and Android platforms.
6. The reminder feature must comply with accessibility standards to ensure usability for older persons.
7. The system should log reminders sent and allow users to confirm if they have taken their medication.
8. The reminder should include a rumble alert followed by a voice reminder for wearable devices, ensuring the voice reminder is clear and audible.
9. The system should allow users to select the voice type (e.g., male, female) for the voice reminder.

Acceptance Criteria

1. The reminder is sent at the specified time.
2. The reminder is clear and easy to understand.
3. The user can customize reminder times.
4. The user can confirm if they have taken their medication.

US7

As an OlderPerson, I want to have ALFRED detect falls and send an emergency alert to a specific contact.

Related Information

- **User Type**: OlderPerson
- **Feature**: Fall Detection and Emergency Alert
- **Purpose**: To ensure safety and prompt assistance in case of a fall.

Product Details

- **Product Name**: ALFRED
- **Functionality**: Detects falls and sends alerts.

Technical Requirements

1. The system must utilize accelerometer and gyroscope sensors to accurately detect falls.
2. The fall detection algorithm should have a configurable sensitivity level to minimize false positives.
3. Upon detecting a fall, the system should automatically send an emergency alert to a predefined contact via SMS, email, or app notification.
4. Users should be able to customize their emergency contact list through the ALFRED app.
5. The system should provide a confirmation prompt to the user after a fall is detected, allowing them to cancel the alert if they are not in need of assistance.
6. The application must be compatible with both iOS and Android platforms.
7. The system should log all fall detection events and alerts sent for user review.
8. The fall detection feature must comply with accessibility standards to ensure usability for older persons.
9. The system should provide clear audio and visual alerts to ensure the user is aware of the emergency alert being sent.
10. The fall detection feature should be tested for accuracy and reliability to ensure user safety.
11. The system should allow users to set preferences for the type of alert (SMS, email, app notification).
12. The audio alerts must be loud enough to be heard in typical home environments, and visual alerts should include flashing lights or notifications on the device screen.

Acceptance Criteria

1. The system accurately detects falls.
2. The system sends an emergency alert to a predefined contact.
3. The user can customize the contact list for emergency alerts.
4. The user receives a confirmation prompt after a fall is detected.

US8

As an OlderPerson, I want to use ALFRED to communicate with my friends and family.

Related Information

- **User Type**: OlderPerson
- **Feature**: Communication
- **Purpose**: To maintain social connections and reduce feelings of isolation.

Product Details

- **Product Name**: ALFRED
- **Functionality**: Enables communication with friends and family.

Technical Requirements

1. The system must allow users to send and receive text messages easily, with a simple interface that includes large buttons and clear text.
2. The system should support voice calls with a one-touch dial feature for quick access to contacts.
3. The system should support video calls with a simple initiation process, including a preview feature to ensure the user is ready before connecting.
4. The communication interface should provide visual indicators (e.g., notifications) for incoming messages and calls.
5. The system should include a 'Favorites' feature that allows users to quickly access frequently contacted friends and family.
6. The application must be compatible with both iOS and Android platforms.
7. The communication feature must comply with accessibility standards to ensure usability for older persons, including options for larger text and high-contrast visuals.
8. The system should provide tactile feedback for users who may have difficulty hearing notifications, such as vibrations for incoming messages and calls.
9. The communication interface should allow for easy access to privacy settings, enabling users to manage their visibility and control who can contact them.
10. The system should offer a simple way to block or report unwanted contacts, with clear instructions on how to do so.

11. The system should provide a tutorial or onboarding process to help users understand how to use the communication features effectively.
12. The system should allow users to customize notification settings for messages and calls, including sound and vibration options.
13. The system should include a 'Help' feature that users can access at any time for additional support with communication features.
14. The system should provide a summary of recent communications, including missed calls and unread messages, to keep users informed.

Acceptance Criteria

1. The system allows users to send and receive messages easily.
2. The system supports voice and video calls with simple initiation processes.
3. The system provides tactile feedback for notifications.
4. The system allows users to access privacy settings easily.

US9

As a MedicalCaregiver, I want to have ALFRED determine the user's heart rate so that I can monitor their health effectively and respond to any concerns in a timely manner.

Related Information

- **User Type**: MedicalCaregiver
- **Feature**: Heart Rate Monitoring
- **Purpose**: To ensure timely interventions and health management for users.

Product Details

- **Product Name**: ALFRED
- **Functionality**: Monitors and reports heart rate.

Technical Requirements

1. The system must accurately measure the user's heart rate using wearable sensors.
2. The heart rate data should be displayed in real-time on the ALFRED interface for immediate access by the caregiver.
3. The system should provide alerts if the heart rate exceeds predefined thresholds, with customizable alert settings for caregivers.
4. The system should log historical heart rate data for review and analysis by caregivers.
5. The application must be compatible with both iOS and Android platforms.
6. The heart rate monitoring feature must comply with medical device regulations and standards to ensure safety and reliability.
7. The system should allow caregivers to set reminders for regular heart rate checks based on the user's health needs.
8. The system should provide a user-friendly interface that allows caregivers to easily switch between different vital sign measurements (heart rate, body temperature, breathing frequency).
9. The system should include a 'Help' feature that caregivers can access for additional support with heart rate monitoring.
10. The system should ensure data privacy and security, allowing caregivers to access only the necessary information about the user.
11. The heart rate monitoring feature should include options for caregivers to set personalized thresholds based on individual user health profiles.
12. The system should provide educational resources or tips for caregivers on interpreting heart rate data and responding to alerts.
13. The user interface should be designed with large buttons and clear text to enhance usability for caregivers, especially those with limited technical skills.

Acceptance Criteria

1. The system accurately measures and displays the user's heart rate.
2. The system sends alerts for abnormal heart rates.
3. The system logs historical heart rate data for caregiver review.
4. The system provides a user-friendly interface for switching between vital sign measurements.

US10

As a developer, I want to have the ALFRED API to be well defined and well documented.

Related Information

- **User Needs**: Developers require a clear and comprehensive API documentation to effectively integrate and utilize the ALFRED system.
- **Purpose**: To ensure that developers can easily understand and implement the API functionalities without confusion.

Product Details

- **Product Name**: ALFRED API
- **Target Audience**: Developers who will be using the ALFRED API for integration.

Technical Requirements

1. The ALFRED API must include comprehensive documentation that covers all endpoints, request/response formats, and error handling.
2. Code samples must be provided for common use cases to facilitate understanding and implementation.
3. The documentation should outline the design principles and permissions required for app developers to ensure compliance with the ALFRED concept.
4. The API must be versioned to allow for backward compatibility and ease of updates.
5. A clear authentication mechanism must be documented to ensure secure access to the API.
6. The documentation should include a FAQ section to address common developer queries and issues.
7. The API must be tested for performance and reliability, with results documented for developers' reference.

Feasibility Feedback

- The user story is technically feasible, as creating well-defined and documented APIs is a standard practice in software development. However, it requires a dedicated effort to ensure that the documentation is clear, comprehensive, and user-friendly. Potential risks include incomplete documentation or failure to keep it updated with API changes.

User Value

- This user story delivers value by providing developers with the necessary resources to effectively use the ALFRED API, enhancing their productivity and reducing integration issues.

Acceptance Criteria

1. The API documentation is complete and covers all endpoints, request/response formats, and error handling.
2. Code samples for common use cases are included in the documentation.
3. Design principles and permissions for app developers are clearly outlined.
4. The API is versioned and maintains backward compatibility.
5. A secure authentication mechanism is documented.
6. A FAQ section addressing common developer queries is included.
7. Performance and reliability testing results are documented.