A blue and white background

Description automatically generated**NarcoTech**

**Quality Assurance**

**Alexa Physio Reminder Skill**

**Appointment Reminder System for O.P.S**

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# Introduction

**Purpose of the Document**

This document serves as a guide for testing and quality assurance of the O.P.S. Appointment Reminder Skill. It outlines the testing strategy, plan, scenarios, criteria, execution and results to ensure the skill functions according to the specifications outlined in the Specifications & Requirements document. The document will provide clarity surrounding potential issues and areas for improvement.

**Document Overview**

The testing document outlines a thorough framework for testing the O.P.S. Appointment Reminder skill. It includes the testing strategy, plan, cases, execution and results associated with the Testing Phase of the software development process for this project.

# Testing Objectives

**Scope and Objectives**

This document should serve to provide a thorough understanding of the level of quality of the product and highlight key areas for improvement. The objectives of this document are as follows:

* Define testing scope
* Specify test criteria
* Identify testing methodologies
* Describe test scenarios
* Define acceptance criteria
* Identify bugs

**Overview of the Product**

To enhance the efficiency of managing physiotherapy sessions, an Alexa skill should be developed to streamline the appointment scheduling process. This advanced skill will empower users to easily schedule their sessions without manual intervention. By implementing this solution, the burden of scheduling is significantly reduced for both patients and the healthcare facility. Patients can effortlessly interact with Alexa, while the healthcare staff at O.P.S can focus on more critical aspects of patient care. This streamlined system ensures that appointments are promptly scheduled, allowing patients to focus on their recovery journey.

**Reference Documents**

For a better understanding of the specifications associated with this product, a review of the following documents should be carried out:

* Specifications & Requirements Documentation
* Design Documentation

# Test Strategy

**Testing Approach**

Due to limited time, limited costs and the nature of the system, execution-based testing will be carried out manually by the Quality Assurance personnel. Testers will actively engage in the testing process, simulating the actions of end-users. This will provide insight into the user experience and allow a better understanding of the usability of the system. Testing will be both functional and non-functional with the non-functional tests focusing on security and usability.

**Test Levels**

Due to the small scale of the project and the limited timeframe, testing will primarily be performed at the System Level. This is attributed to the fact that the system is not large enough at this stage to be reasonably split into smaller units/sub-systems.

**Test Environment**

1. **Hardware:** Testing will be facilitated on a computer with the following requirements:

* 8 Gb RAM
* 256 Gb Storage
* 2.5 GHz 4 Cores
* Functional Microphone
* Functional Speaker

1. **Software:** Testing will be carried out in the Amazon Alexa Developer Console.
2. **Network Configuration:** Testing will require a stable internet connection of at least 50mbps
3. **Test Data:** Testers will use diverse datasets that cover various scenarios to thoroughly test the application.

# Test Requirements

## User Requirements

1. The system will allow the user to enter their name and check their appointment information.
2. The Alexa Skill will provide the user with the ability to check the date, time and therapist associated with their upcoming appointments.
3. The system will allow the user to check the time of the appointment on a given date.
4. The system will allow the user to add a reminder for an appointment.
5. The system will allow the user to remove the reminder associated with a given appointment.
6. The system will allow the user to check which therapist is assigned to the given appointment.
7. The system will allow the user to change information associated with an appointment.
8. The system will send a reminder to the user before their scheduled appointment.

## Functional Requirements

1. The system should be able to provide a list of appointments associated with the user.
2. The system should be able to provide the name of the physiotherapist associated with a specified appointment.
3. The system should be able to provide the time of an appointment on a specified date.
4. The system should be able to confirm if a user has an appointment on a given date.
5. The system should be able to provide the following information about an appointment:
   1. Date
   2. Time
   3. Physiotherapist
6. The system should allow the user to cancel an appointment on a specific date.
7. The system should allow the user to add a new appointment to their schedule list.
8. The system should allow the user to ask for the information to be repeated.
9. The system should allow the user to update the information associated with an appointment.
10. The system should allow the user to ask for information on how the skill works.

## Non-Functional Requirements

1. **Availability:** The skill will be available to users at all times to enable them to check their schedule at any given moment.
2. **Compatibility and Interoperability:** The system should be compatible with a wide range of Alexa-enabled devices.
3. **Data Storage and Management:** User data and appointment records should be securely stored and easily retrieved by authorized users.
4. **Performance Requirements:** The system should provide timely responses to users, ensuring a good user experience.
5. **Scalability :** The system should be scalable to handle an increasing number of users and appointments without significantly impacting performance.
6. **Security Requirements:** Users should not be able to access each other’s schedules, protecting the privacy of patients using the reminder system.
7. **Usability:** The interface should be intuitive and user-friendly, allowing users to easily adapt to interacting with the skill.

# Test Cases

## Deleting A Reminder

### Good Data: User prompts Alexa using the correct commands and invocation names to delete a reminder

|  |  |
| --- | --- |
| Test Case Identification Number | TC01 |
| Test Case Name | Good |
| Test Description | Test case where the user prompts Alexa using the correct commands and invocation names to delete a reminder. The expected results should match the actual results. |
| Preconditions | * User must prompt Alexa by using the wake word “Alexa” * Followed by a launch word, such as “delete” * Then the invocation, “the reminder for my physiotherapy appointment” |
| Test Steps | * User clearly and specifically states what appointment they want to delete |
| Test Data | “Alexa, delete the reminder for my physiotherapy appointment on Wednesday at 9AM” |
| Expected Results | Alexa deletes the reminder and provides confirmation that the reminder is deleted. |
| Actual Results | Alexa deletes the reminder and provides confirmation that the reminder is deleted. |

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. Test Case - TC01

### Bad Data: User prompts Alexa to delete a reminder that does not exist

|  |  |
| --- | --- |
| Test Case Identification Number | TC02 |
| Test Case Name | Bad |
| Test Description | Test case where the user prompts Alexa using the correct commands and invocation names to delete a reminder that does not exist. The expected results should match the actual results. |
| Preconditions | * User must prompt Alexa by using the wake word “Alexa” * Followed by a launch word, such as “delete” * Then the invocation, “the reminder for my physiotherapy appointment” |
| Test Steps | * User asks Alexa to delete the appointment that does not exist |
| Test Data | “Alexa, delete the reminder for my physiotherapy appointment on Wednesday at 9AM” |
| Expected Results | Alexa indicates that the reminder does not exist. |
| Actual Results | Alexa indicates that the reminder is deleted. |

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. Test Case - TC02

### Extreme Data: User prompts Alexa to delete a reminder with an invalid date and time

|  |  |
| --- | --- |
| Test Case Identification Number | TC03 |
| Test Case Name | Extreme |
| Test Description | Test case where the user prompts Alexa using the correct commands and invocation names to delete a reminder that does not exist. The expected results should match the actual results. |
| Preconditions | * User must prompt Alexa by using the wake word “Alexa” * Followed by a launch word, such as “delete” * Then the invocation, “the reminder for my physiotherapy appointment” |
| Test Steps | * User prompts Alexa using the “Alexa” wake word * User uses the correct launch word * User asks Alexa to delete the appointment |
| Test Data | “Alexa, delete the reminder for my physiotherapy appointment on Tennis at 25AM” |
| Expected Results | Alexa responds indicating an error, does not delete a reminder but prompts the user to enter the information again. |
| Actual Results | Alexa responds indicating an error, does not delete a reminder but prompts the user to enter the information again. |

## Adding A Reminder

### Good Data: User prompts Alexa using the correct commands and invocation names to add a reminder

|  |  |
| --- | --- |
| Test Case Identification Number | TC04 |
| Test Case Name | Good |
| Test Description | Test case where the user prompts Alexa using the correct commands and invocation names to add a reminder. The expected results should match the actual results. |
| Preconditions | * User must prompt Alexa by using the wake word “Alexa” * Followed by a launch word, such as “remember” * Then the invocation, “my July 15th 2024 appointment” |
| Test Steps | * User prompts Alexa using the “Alexa” wake word * User uses the correct launch word * User clearly and specifically states what they would like Alexa to do * Once Alexa understands, Alexa does what was requested |
| Test Data | “Alexa, remember my July 15th 2024 appointment at 10AM with Mark” |
| Expected Results | Alexa replies “Is the appointment on 2024-07-15 at 10:00 with Physiotherapist Mark correct?”  Once confirmed, Alexa saves the date and information |
| Actual Results | Alexa replies “Is the appointment on 2024-07-15 at 10:00 with Physiotherapist Mark correct?”  Once confirmed, Alexa saves the date and information |

### 

. Test Case - TC04

### Bad Data: The user prompts Alexa to add a new reminder with an invalid time.

|  |  |
| --- | --- |
| Test Case Identification Number | TC05 |
| Test Case Name | Bad |
| Test Description | Test case where the user inputs invalid information as a time. The expected results should match the actual results. |
| Preconditions | * User must prompt Alexa by using the wake word “Alexa” * Followed by a launch word, such as “add” * Then the invocation, “a new reminder” |
| Test Steps | * User prompts Alexa to add a reminder * Alexa prompts the user for a time and date * User inputs an invalid response |
| Test Data | “Alexa, add a new reminder.”  “Coffee” |
| Expected Results | Alexa responds indicating an error, does not create a new reminder but prompts the user to enter the information again. |
| Actual Results | Alexa responds indicating an error, does not create a new reminder but prompts the user to enter the information again. |

### Extreme Data: User inputs invalid information for adding a reminder

|  |  |
| --- | --- |
| Test Case Identification Number | TC06 |
| Test Case Name | Extreme |
| Test Description | Test case where the user uses unsuitable information and Alexa cannot understand it and provide a response. The expected results should match the actual results. |
| Preconditions | * User must prompt Alexa by using the wake word “Alexa” * Followed by a launch word, such as “add” * Then the invocation, “a physiotherapy appointment reminder for my appointment” |
| Test Steps | * User uses the “Alexa” wake word * User doesn’t provide a date and uses an invalid time * Alexa cannot fulfil the request because the information is unsuitable |
| Test Data | “Alexa, I need a reminder for my appointment at 25AM this week” |
| Expected Results | Alexa responds indicating an error, does not create a new reminder but prompts the user to enter the information again. |
| Actual Results | Alexa responds indicating an error, does not create a new reminder but prompts the user to enter the information again. |

## Checking Appointment Schedule

### Good Data: User correctly prompts Alexa to provide their appointment schedule

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| --- | --- |
| Test Case Identification Number | TC07 |
| Test Case Name | Good |
| Test Description | Test case where the user prompts Alexa using the correct commands and invocation names to provide their appointment schedule. The expected results should match the actual results. |
| Preconditions | * User must prompt Alexa by using the wake word “Alexa” * Followed by a launch word, such as “what” * Then the invocation, “my upcoming appointments” |
| Test Steps | * User prompts Alexa to list their upcoming appointments |
| Test Data | “Alexa, what are my upcoming appointments?” |
| Expected Results | Alexa responds with a list of the user’s upcoming appointments. |
| Actual Results | Alexa responds with a list of the user’s upcoming appointments. |

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. Test Case – TC07

## Checking Appointment Information

### Good Data: User correctly prompts Alexa to check what time an appointment is

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| --- | --- |
| Test Case Identification Number | TC08 |
| Test Case Name | Good |
| Test Description | Test case where the user prompts Alexa using the correct commands and invocation names to provide their appointment schedule. The expected results should match the actual results. |
| Preconditions | * User must prompt Alexa by using the wake word “Alexa” * Followed by a launch word, such as “what” * Then the invocation, “time is my appointment” |
| Test Steps | * User prompts Alexa to give them the time of an appointment on a specific date |
| Test Data | “Alexa, what time is my appointment on July 15th 2024?” |
| Expected Results | Alexa responds with the time of the given appointment. |
| Actual Results | Alexa responds with the time of the given appointment. |

# Revision History

|  |  |  |
| --- | --- | --- |
| **Review** | **Date** | **Reviewed By** |
| Initial Quality Assurance Review | 17/11/2023 | **Project Manager** – Tarika Birch  **Quality Assurance Specialist** – Kelilah Mayers |