**Software Engineering**

**Software Requirements Specification**

**(SRS) Document**

**inTENt**

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**Version 1.0**

**Martin Nolan**

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1. Introduction

* 1. **Purpose:**

The goal of this project is to allow users to enjoy a quick 10 minute workout to kickstart their day or to allow them to wind down at the end of the day with a workout and some meditation.

* 1. **Intended audience:**

This document is intended for Martin Nolan (project manager and developer), Dr Mary Ellen Foster (supervisor) and University of Glasgow staff members who will mark this project.

* 1. **Scope:**

These software goals allow me to develop an advanced project for Amazon’s Alexa using the SDK to fulfil the requirements of the 4th year Computing Science project at the University of Glasgow.

## 2. General Description

**2.1 Product perspective:**

This app will be used mainly indoors through Alexa enabled devices, allowing users to complete a workout or meditate in their free time after the skill has been activated on their device.

**2.2 Product features:**

This allows you to complete a quick 10-minute workout at varying intensities, targeting specific body parts or a 10-minute meditation session to help you destress and unwind from the world.

The functionality of this app will be dependent on the user’s device, for example, if the user has an Echo Dot (voice output only) device then the workout and meditation session will only be guided by voice. However, if the user has a device such as an Echo Show which allows for visual output, the user will be shown tutorials on how to complete the exercise when in workout mode and shown peaceful images when in meditation mode.

When in workout mode, there will be options for the user to choose whether they want to have music playing in the background to help motivate them throughout the workout. In both modes, the user will be provided with healthy tips and tricks to improve their lifestyle – a setting which can be turned on and off by the user.

Incorporating Amazon’s Alexa routines, the user can choose to have daily reminders turned on to remember them to complete either a daily workout or meditation session.

**2.3 User class and characteristics:**

**University Student**

Thomas is a 21 year-old Computing Science student studying at the University of Glasgow. He enjoys staying active by playing football with his flatmates at the weekend. However, he also works part time in a local retail shop which means that he rarely has time to fit in a full gym workout into his busy schedule. Thomas would like to be able to complete a very quick workout in the morning before leaving for his lectures. He would also like to be able to choose which areas of his body to train so that he doesn’t complete a leg workout the same day as he is playing football with his friends.

**Project Manager - Working from home**

Sarah is a 30 year-old project manager living in London with her husband and two kids. Currently Sarah is working from home due to Coronavirus restrictions placed on the country. She is also not able to attend her regular exercise class as gyms are also closed. Sarah would like to be able to destress at the end of her working day by exercising and then meditating at home in a separate room from where she would normally be working in. She would also like to be able to get quick tips and tricks on how to improve her lifestyle to help her deal with the added pressure of working from home.

**Electrical Engineer - Working outdoors**

James is a 25 year-old electrical engineer from Edinburgh who has had to continue to work outdoors installing broadband during the Coronavirus pandemic. James spends most of his day completing manual labour jobs so would like to be able to relax after he finishes work by meditating for 10 minutes. On his days off from work, he likes to stay active so would like to be able to complete a quick morning workout, choosing the intensity level depending on how he feels that day. Whilst exercising, he would like to be able to play some background music whilst exercising to keep him motivated.

* 1. **Operating environment:**

This software is designed to be used in all Alexa enabled devices, including Sonos devices, Amazon’s Echo Dot (providing audio output) and Amazon’s Show device (providing visual and audio output).

* 1. **Assumptions and dependencies:**

The application assumes that the users will have adequate skill in enabling Alexa skills and opening Alexa apps using their voice as input. The application is dependent on having a consistent internet connection to open the Alexa skill and complete a workout or meditation session.

## 3. System Requirements

**3.1 Functional requirements:**

* Alexa should welcome the user and allow them to pick one of two modes: workout or meditation.
* If the user is an existing user then they should be provided with a different welcome interaction.
  + If the workout mode is chosen:
    - The user should then present with options allowing them to choose which area of their body they would like to target. This can be upper body, lower body, or full body.
    - Once a specific body area has been chosen, the user should then be presented with the level of intensity. This can either be light, moderate, or vigorous.
    - Once the workout has started, Alexa should give verbal confirmation of the exercise and length in seconds.
    - During the workout, there should be background music playing to motivate the user - Integration with Spotify can be researched if there is enough time left to develop this feature.
    - The user should be able to turn off the background music in settings if desired. – Found through the help section.
    - The user should be able to rest for 30 seconds in between each exercise.
    - When the user is resting, Alexa should explain how to perform the next exercise.
    - If the application is being used on a device capable of visual output, the device screen should show examples of how to complete the exercises.
    - At the end of each workout the user should be given a congratulations message and presented with a “healthy tip of the day”. (Also display this on screen for devices capable of visual output).
    - As the user exits the application, they should be asked if they wish to set up daily reminders (at a specified time) to work out. This should be incorporated with Alexa routines.
  + If the meditation mode is chosen:
    - The user should be presented with options to either listen to relaxing music/background noise for 10 minutes or complete a guided breathing session.
      * If the guided breathing session is chosen, the user will be taken through this session and then after 10 minutes, this session will end, providing the user with the option of daily reminders to meditate.
      * If the background music session is selected, the user will be provided with options allowing them to select noises such as bird noises, rain, thunderstorms etc. This should also allow the user to choose “random” – An option which chooses a sound at random to play for 10 minutes.
      * If the user is using a device capable of visual output, the device should display peaceful images to the user.
* At any time, the user should be able to ask for help, stop or cancel an interaction.
  + If the user requests help, they should be provided with information about how to use the different modes of the app depending on the mode they are currently in. For example, help on how to perform certain exercises.

## 4.External Interface Requirements

**4.1 User Interface:**The user interface shall follow the basic Alexa functionality conventions and conversational style of interface and functionality conventions. The interface will prompt users for input at desired times when using both voice only and visual I/O devices.

If the user’s device supports visual output, they will be presented with examples of how to complete specific exercises when in workout mode and be presented with relaxing images when in meditation mode.

**4.2 Hardware Interfaces:**This application can run on any hardware which supports Amazon’s Alexa interface. The program does not write information directly to the user’s device but instead it uses a database which is located on a network server. The user’s device transfers and receives data from the server using basic networking protocols.

**4.3 Software Interfaces:**The system requires the user to have configured and activated the inTENt skill through the Amazon Alexa app on their mobile device before it can be used on their virtual assistant device.

## 5. List of Diagrams

**5.1 Conversation Scripts:**

**Happy Path - Meditation Sounds**

Person:

Alexa, open inTENt.

Alexa:

Good morning! Welcome to inTENt! I can help you get started with a quick 10-minute workout or unwind with 10 minutes of meditation. Which will it be?

Person:

Meditation.

Alexa:

Great! Before we begin the session, what is your name?

Person:

My name is John.

Alexa:

Hi John, lovely to meet you. You can choose to follow a 10 minute guided breathing session or listen to relaxing sounds for 10 minutes. Which would you prefer?

Person:

I would like to listen to relaxing sounds.

Alexa:

Okey-dokey! I can play many different sounds. You can say things like rain, birds, thunder or random. If you choose random, I will pick a sound for you. What would you like to hear?

Person:

Rain

Alexa:

Great choice!

\*\*play rain sounds for 10 minutes\*\*

Alexa:

Your 10-minute meditation session has ended. Thank you for using inTENt. I hope you have a wonderful day!

**Happy Path - Guided Breathing**

Person:

Alexa, open inTENt.

Alexa:

Good morning! Welcome to inTENt! I can help you get started with a quick 10-minute workout or unwind with 10 minutes of meditation. Which will it be?

Person:

Meditation.

Alexa:

Great! Before we begin the session, what is your name?

Person:

My name is John.

Alexa:

Hi John, lovely to meet you. You can choose to follow a 10 minute guided breathing session or listen to relaxing sounds for 10 minutes. Which would you prefer?

Person:

Guided breathing.

Alexa:

Okey-dokey! Make sure you are in a comfortable position and we will begin.

\*\*play guided breathing sound for 10 minutes\*\*

Alexa:

Your 10-minute meditation session has ended.Would you like to set up daily reminders to meditate?

Person:

Yes.

Alexa:

What time of day would you like to be reminded at?

Person:

9 o’clock in the morning.

Alexa:

 Sure thing, I have set a reminder for you to meditate at 9 o’clock in the morning each day. Thank you for using inTENt. Remember to <meditation tip>. I hope you have a wonderful day!

**Happy Path - Workout**

Person:

Alexa, open inTENt.

Alexa:

Good morning! Welcome to inTENt! I can help you get started with a quick 10-minute workout or unwind with 10 minutes of meditation. Which will it be?

Person:

Workout.

Alexa:

Great! Before we begin the workout session, what is your name?

Person:

My name is John.

Alexa:

Hi John, lovely to meet you.Which body area would you like to workout? You can choose from upper body, lower body, or full body workouts.

Person:

Full body.

Alexa:

Fantastic choice! For a full body workout, you can choose the level of intensity. This can either be light, moderate or vigorous. Which intensity level would you like?

Person:

Light.

Alexa:

Sure thing! Let's get started with a light workout. If you would prefer to turn the background music off, you can do this through the settings section on the Alexa app.

\*\*Start a 10 minute workout - either a pre-recorded sound or Alexa will walk users though each exercise, explaining how to perform the exercise and the duration of each move.\*\*

Alexa:

Your 10-minute workout session has ended.Would you like to set up daily reminders to workout?

Person:

Yes.

Alexa:

What time of day would you like to be reminded at?

Person:

9 o’clock in the morning.

Alexa:

 Sure thing, I have set a reminder for you to workout at 9 o’clock in the morning each day. Thank you for using inTENt. Remember to <exercise tip>. I hope you have a wonderful day!