

Test Specification

By Group 2

Anton Geneser Matzen
202008936@post.au.dk
Std.nr: 202008936
Au-id: 683185

Emil Hilligsøe Lauritsen
202004154@post.au.dk
Std.nr: 202004154
Au-id: 668867

Martin Michaelsen
202007433@post.au.dk
Std.nr: 202007433
Au-id: 672598

Kevin Vollesen Schønberg
202007282@post.au.dk
Std.nr: 202007282
Au-id: 674059

Signatures:

Tester 1:

Tester 2:

Developer 1:

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1. Version History

Test Specification Versioning Table			
Version	Date	Editor	Modifications
0.1	11-05-2022	All	Outlining of test cases, based on use-cases.
0.2	15-05-2022	All	Editing and finalizing test cases

Table 1: Test Specification - Version History

2. Introduction

This test specification describes how to perform different test cases designed for the functional requirements described in the Requirement Specification document, made for the 2022 computer engineering project 2. The system design centers around home use, with different visual cues throughout the home indicating that the stove has been left on and after an extended period of time, the stove will be turned off. The system will also store data for later review by the user on a web page.

2.1 Abbreviations

Abbreviation	Description
TC	Test Case
P	Pass
F	Fail

Table 2: Test Specification - Abbreviations

3. Testing Plan

To test the functionality of the kitchen guard program a test case will be defined for each of the listed functional requirements in the Requirements Specification. Each of these test cases must then be performed and accepted. In this document, test cases will be listed and referenced to the appropriate use cases listed in the Requirements Specification. Each of the test cases will have a clear description of what the tester will need to perform the test of the use case in question. This will be followed by the expected result, such that the tester knows what to look for when deciding whether the test passes or fails. At last, the tester will also have a chance to leave notes if the tester deems it necessary.

These tests will be performed by a group of the developer's peers, and at least two signatures from said peers will be collected in this document.

4. Test Cases

4.1 TC1

Name	Monitor Stove
Use case	UC1
Primary actor	User
Precondition	Stove is turned on
Test input.	1. The user will wave his hand in front of the kitchen sensor to indicate movement in the kitchen.
Expected result	The controller receives an event, and prints it in the controller terminal.
Test functionality	To test if the sensor can send events to the controller and to test if the controller can receive said events.
Result(Pass/fail)	
Note:	

Table 3. Testcase 1 - Monitor Stove

4.2 TC2

Name	Start Timer.
Use case	UC2
Primary actor	Sensor(Kitchen)
Precondition	The controller has not received events stating that the user is still in the kitchen for more than 20 seconds.
Test input	The kitchen sensor will be blocked, thus indicating that the user has left the kitchen
Test functionality	To test if the timer starts and operates correctly.
Expected result	The timer starts after the assigned waiting period of 20 seconds
Result(Pass/fail/)	
Note:	

Table 4. Testcase 2 - Start timer

4.3 TC3

Name	Search for user
Use case	UC4
Primary actor	Sensor(s)
Precondition	UC3 is running.
Test input	1. The user will wave his hand in front of the second sensor indicating movement in another room.
Test functionality	To locate the user after leaving the kitchen.
Expected result	The controller receives an event telling which room the user is located in. This can be seen in the event terminal.
Result(Pass/fail/)	
Note:	

Table 5. Testcase 3 - Search for user

4.4 TC4

Name	Alert User
Use case	UC3
Primary actor	Alerting lights
Precondition	Five minutes have passed since the timer of UC2 has been started.
Test input	1. UC4 will determine which room the user is located in.
Test functionality	To test the alerting lights.
Expected result	Lights will turn on in the room the user is located in. This will be indicated by a change of color on the LED strip.
Result(Pass/fail/)	
Note:	

Table 6 Testcase 4 - Alert User

4.5 TC5

Name	Detect User Return
Use case	UC5
Primary actor	Sensor(s)
Precondition	The user is not in the kitchen and the stove is on.
Test input	1. The user waves his hand in front of the kitchen sensor to indicate his return to the kitchen.
Test functionality	To detect the return of the user.
Expected result	The timer is reset, all alerting lights are turned off and the event is saved on the database.
Result(Pass/fail/)	

Note:	
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Table 7 Testcase 5 - Detect user return

4.6 TC6

Name	Turn the stove off
Use case	UC6
Primary actor	Power plug and alerting light.
Precondition	20 minutes has passed without the user present in the kitchen
Test input	1. Wait for a period of 20 minutes (While testing this timer is set to a lower period)
Test functionality	To test that the stove safely turns off after a period of 20 minutes.
Expected result	The stove is off and the light in the kitchen is showing a colored light indicating the stove was left on for too long. For the test, the alerting light will be seen as a change in color on the LED strip.
Result(Pass/fail/)	
Note:	

Table 8 Testcase 6 - Turn the stove off

4.7 TC7

Name	View data
Use case	UC7
Primary actor	User
Precondition	None:
Test input	1. The user opens a browser 2. The user enters the web page (KitchenGuard.ddns.net) 3. The user can watch the information from the database
Test functionality	To test that the webpage can read data from the database
Expected result	The user has access to the information from the database
Result(Pass/fail/)	
Note:	

Table 9 Testcase 7 - View data

4.8 TC8

Name	Receive new data from database
Use case	UC7
Primary actor	User
Precondition	User has webpage open
Test input	1. An event will be sent to the database 2. The user will refresh the web page
Test functionality	To test that the webpage can new data from the database
Expected result	The user will see the new event appear on the web page
Result(Pass/fail/)	
Note:	

Table 10. Testcase 8 - Receive new data from database.