# Test Plan

S6-RB03 Group 2

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# Introduction

This document will list each test that should be performed to guarantee the usability of the product. Each test should meet the demands set in the definition of done. Furthermore, this document outlays which tests are going to be used and what they cover. Finally, each test method is bound to risks these risks are also described on a per-test basis. Code coverage based on the definition of done is detailed.

# Most Important Risks

The importance of a risk decides what tests are prioritized first. The most important risk for this project is “A feature is deemed functional and is deployed, but in reality, it wasn’t fully functional yet”. This means that an acceptance test passed without proper proof of the feature working. Unit tests and end-to-end tests, as well as performance tests, should be used to prove that the feature passes the definition of done.

# Test Approach

## Unit Tests

Unit tests will be used to ensure the functioning of small pieces of logic, the main purpose of the unit tests is to narrow down possible issues to a unit level. The unit tests should be written in such a way that they could be automated with a CI workflow. The unit tests should be used in cohesion with the end-to-end tests and narrow down errors when an end-to-end test fails.

**Definition of done:** Unit tests should be written on important features to help narrow down issues and to track down possible issues as fast as possible. Additionally, unit tests should cover at least 90% of the code.

**Risks:** If unit tests are written incorrectly they can still pass even though the code doesn’t work as expected. Another risk could be that unit tests are not written for the most important features, therefore they are not tested as they should be.

## End-to-end Tests

End-to-end tests will be used to ensure that each feature of the project works from top to bottom. The end-to-end tests will cover each major feature and should complete successfully. The end-to-end tests should be automated with a CI workflow. The end-to-end tests make use of the full stack of the project.

**Definition of done:** The tests should cover all the important features in the systems and make sure the whole process of going from the front-end to the back-end is working as expected.

**Risks:** If the code fails on a unit test level, then it will fail in the end-to-end testing. Another risk is that if an API connection cannot be established, the test would fail automatically.

### Acceptance Tests

Acceptance tests will be used to ensure the user experience is as expected and that the feature is implemented correctly. The acceptance tests should be performed each when meeting with the client(s) to present them with the product we have developed this far.

**Definition of done:** An acceptance test is considered done when the product owner approves the implementation of the feature.

**Risks:** A feature might work in the development environment and be accepted by the product owner as complete, while it wouldn't perform as well in a production environment when deployed.

### Performance Tests

Performance tests will be used to ensure that the product is useable and functions as expected. Performance tests should be done on both the front-end and back-end. Performance tests should show that the product is in a useable state and can handle a production situation without a problem.

**Definition of done:** A performance test is considered done when the performance evaluation software deems it performant enough.

**Risks:** If some parts of the system are badly optimized, they could cause other parts that are well optimized to fail the tests.

### Security Tests

Security tests will be used to uncover vulnerabilities, threats, risks in the system and prevent malicious attacks from intruders. The tests will be performed through the interface, as well as by trying to access the back-end of the system by intercepting the messaging between both parts.

**Definition of done:** A security test is considered done when it passes the set acceptance criteria, and data is protected as per the GDPR regulations.

**Risks:** A security test succeeds while little data or little transfer of it happens, but in reality when a lot of real-time data is being processed in a real environment, the security is much less reliable.

## Test Approach Matrix

| Test Name | Through the interface | Full stack infrastructure | Automated testing |
|---|---|---|---|
| **Unit Tests** | **X** | | **X** |
| **End-to-end Tests** | **X** | **X** | **X** |
| **Acceptance Tests** | **X** | | |
| **Performance Tests** | **X** | | |
| **Security Tests** | **X** | **X** | |

## Test Case Matrix

| Test Case | Use Case | Test Case Description | Test Data | Expected Result |
|---|---|---|---|---|
| TC01 | UC01 | When the user enters correctly all the data required and chosen to pay at the restaurant, they should have successfully created a reservation and received a confirmation email. | **Number of guests:** 2<br>**Timeslot:** Date, 18:30<br>**Guest names:** Lena, Peter<br>**Dietary wishes:** no nuts (nut allergy)<br>**Payment method:** on location | Reservation created, confirmation email sent. |
| TC02 | UC01 | When the user enters correctly all the data required and chosen to pay online with correct card credentials, they should have successfully created a reservation and received a confirmation email. | **Number of guests:** 2<br>**Timeslot:** Date, 18:30<br>**Guest names:** Lena, Peter<br>**Dietary wishes:** no nuts (nut allergy)<br>**Payment method:** online | Reservation created, confirmation email sent. |
| TC03 | UC01 | When the user enters correctly all the data required and chosen to pay online with incorrect card credentials, they should be returned to the previous step and allowed to try and reenter their card credentials correctly. | **Number of guests:** 2<br>**Timeslot:** Date, 18:30<br>**Guest names:** Lena, Peter<br>**Dietary wishes:** no nuts (nut allergy)<br>**Payment method:** online | Reservation incomplete, retry possible. |
| TC04 | UC02 | When the user wants to cancel a reservation, that they have made previously, and chose to pay at the | **Reservation:** Date, 18:30 timeslot; Lena, Peter guests**;** no nuts (nut | Reservation cancelled, email |

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|---|---|---|---|---|
| | | restaurant, the reservation should be cancelled and an email should be sent. | allergy) dietary wishes; on location payment. | sent to confirm cancelation. |
| TC05 | UC02 | When the user wants to cancel a reservation, that they have made previously, and chose to pay online, the reservation should be cancelled, the customer's money should be refunded and an email should be sent | **Reservation:** Date, 18:30 timeslot; Lena, Peter guests**;** no nuts (nut allergy) dietary wishes; online payment. | Reservation cancelled, money refunded, email sent to confirm cancelation. |
| TC06 | UC02 | When the user tries to cancel a reservation on a too short of a notice, then the reservation cancelation is not allowed to happen. | **Reservation:** Current day, 18:30 timeslot; Lena, Peter guests**;** no nuts (nut allergy) dietary wishes; on location payment.<br>**Current time:** 17:30 | Reservation is not cancelled. |
| TC07 | UC03 | When the user wants to reschedule a reservation, that they have made previously, and choose a new date in the future, then the reservation is rescheduled for that date and a confirmation email is sent. | **Reservation:** Date, 18:30 timeslot; Lena, Peter guests**;** no nuts (nut allergy) dietary wishes; on location payment.<br>**New Date:** New Date, 18:30 timeslot | Reservation is rescheduled to the new date, a confirmation email is sent. |
| TC08 | UC03 | When the user wants to reschedule a reservation, that they have made previously, and choose a new date in the future, but they attempt to reschedule on a short notice, then the reservation is not rescheduled. | **Reservation:** Current day, 18:30 timeslot; Lena, Peter guests**;** no nuts (nut allergy) dietary wishes; on location payment.<br>**Current time:** 17:30 | Reservation is not rescheduled. |
| TC09 | UC04 | When the user, with a manager access account, wants to configure the timeslots that are available for reservation in the restaurant, then they enter them and the systems saves the data. | **Monday:** 17:30 – 22:30<br>**Tuesday:** 17:30 – 22:30<br>**Wednesday:** no available timeslots<br>**Thursday:** 18:30 – 22:30<br>**Friday:** 17:30 – 23:30<br>**Saturday:** 17:30 – 23:30<br>**Sunday:** no available timeslots | Timeslots are saved by the system and displayed correctly. |
| TC10 | UC05 | When the user, with a manager access account, wants to configure how many tables and their capacity is available for a timeslot, they enter the data for each timeslot, then the system save the data. | **Monday:** 10 tables, 4 ppt*<br>**Tuesday:** 10 tables, 4 ppt<br>**Wednesday:** no available timeslots<br>**Thursday:** 12 tables, 10 - 4 ppt, 2 - 2ppt<br>**Friday:** 16 tables, 10 – 4 ppt, 6 – 2ppt<br>**Saturday:** 16 tables, 10 – 4 ppt, 6 – 2ppt<br>**Sunday:** no available timeslots | Tables and their capacity per timeslot are saved by the system and displayed correctly. |

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| TC11 | UC06 | When the user, with a manager access account, wants to create a special event, they enter a date in the future, title and description, then the system creates the even on that timeslot and sends out an email to people who had already created a reservation for that timeslot, telling them that it has been changed to a special event giving them the option to reschedule or cancel if they wish. | **Date:** 14.02.2023 18:30 – 22:30<br>**Title:** Valentine's Day<br>**Description:** Celebrate Valentine's day with your significant other at our place, with great food, passionate atmosphere and great vibes and music. | The special event is created and saved in the system. An email is sent to reservation holders for the date with a cancellation and rescheduling option. |
| TC12 | UC07 | When the user, with a manager access account, wants to configure the system so that both guest and regular accounts can make a reservation, they configure it and the system saves the setting. | **Selection:** Regular accounts, guest accounts. | The system saves the setting and allows both regular and guest accounts to make reservations. |
| TC13 | UC08 | When the user, with a manager access account, wants to cancel a reservation made by some normal user, then they select it and cancel it, after the system removes the reservation and an email is sent to the reservation creator. | **Selected Reservation:** Date, 18:30 timeslot; Lena, Peter guests**;** no nuts (nut allergy) dietary wishes; on location payment. | The reservation is cancelled and an email is sent to the reservation creator. |
| TC14 | UC09 | When the user, with a manager access account, wants to toggle so that reservations have to manually be approved by a staff member, they do so via the system and the system updates to follow that preference. | **Turn On:** Manually approve reservations. | The system activates the need for reservations to manually approve reservations. |
| TC15 | UC11 | When the user, with a manager access account, wants to allow normal users who have had a reservation at the restaurant to leave reviews, they do so via the system and the system activates that feature. The system would then send an email to every reservation the day after the reservation to ask them if they want to leave a review. | **Turn On:** Allow user reviews. | The system activates the option for users to leave a review after their reservation date, by sending them an email. |
| TC16 | UC12 | When the user, with a manager access account, wants to toggle sending a reminder email to people who have made a reservation, then they select | **Turn On:** Reminder email about reservation. | The system activates the reminder emails and sends them |

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|---|---|---|---|---|
| | | that option and the system begins sending out emails. | | out a day before the reservation. |
| TC17 | UC13 | When the user, with a manager access account, wants to manually register a new reservation, then they enter the data required correctly and selects the payment at the restaurant option, then the system creates a reservation with the entered data. | **Number of guests:** 4<br>**Timeslot:** Date, 19:30<br>**Guest names:** Luka, Youri, Koen, Ivan<br>**Dietary wishes:** no diary, no gluten, no meat<br>**Payment method:** on location | The system saves the reservation for the selected timeslot. |
| TC18 | UC13 | When the user, with a manager access account, wants to manually register a new reservation, then they enter the data required correctly and selects the payment online option, then enters the correct card details, after the system creates a reservation with the entered data. | **Number of guests:** 4<br>**Timeslot:** Date, 19:30<br>**Guest names:** Luka, Youri, Koen, Ivan<br>**Dietary wishes:** no diary, no gluten, no meat<br>**Payment method:** online | The system saves the reservation for the selected timeslot. |

* ppt – people per table

## Code Coverage

As defined by the definition of done, at least ninety (90) percent of the code should be covered by unit tests. Most unit testing software allow you to see the code coverage percentage when a unit test run has completed.