

Brookstone B&B Requirements Specification

Version 3.0

December 31, 2016

Table of Contents

1. INTRODUCTION.....	3
1.1 PROJECT OVERVIEW	3
1.2 PURPOSE AND SCOPE OF THIS SPECIFICATION	3
2. OVERALL DESCRIPTION	3
2.1 PRODUCT PERSPECTIVE	3
2.2 PRODUCT FEATURES	3
2.3 USER CLASSES AND CHARACTERISTICS	3
2.4 OPERATING ENVIRONMENT	3
2.5 USER DOCUMENTATION.....	4
2.6 ASSUMPTIONS AND DEPENDENCIES	4
3. SYSTEM FEATURES	4
3.1 CORE FEATURES - FUNCTIONAL.....	4
3.1.1 <i>Find Vacant Room</i>	4
3.1.2 <i>Book Vacant Room</i>	4
3.1.3 <i>Check Out</i>	5
3.1.4 <i>View Status</i>	5
3.2 ADDITIONAL FEATURES – NON-FUNCTIONAL.....	5
3.2.1 <i>Security</i>	5
3.2.2 <i>Performance</i>	5
3.2.3 <i>Data Integrity</i>	5
3.2.4 <i>Ease of Use</i>	5
4. EXTERNAL INTERFACE REQUIREMENTS	6
4.1 USER INTERFACE.....	6
4.2 HARDWARE INTERFACE	6
4.3 SOFTWARE INTERFACE	6
4.4 COMMUNICATION INTERFACES	6
5. MILESTONES	6
6. KEY RESOURCE REQUIREMENTS.....	6
7. OTHER REQUIREMENTS	6
8. APPENDIX	7
8.1 GLOSSARY	7
8.2 PROJECT PROPOSAL.....	8
8.3 ANALYSIS MODELS.....	9
8.3.1 <i>Use Case Diagram</i>	9
8.3.2 <i>Class Diagram</i>	10
8.3.3 <i>Sequence Diagrams</i>	11

1. Introduction

1.1 Project Overview

The Brookstone B&B product will provide booking and tracking services for small Bed and Breakfast businesses.

1.2 Purpose and Scope of this Specification

This document is intended for everyone involved in the development of the Brookstone B&B project. Readers that are more interested in the business functions of the application should read section 1 and section 2 (Introduction and Overall Description) as well as the Milestones in section 5.

Detailed feature descriptions are defined in section 3. Functional requirements are described in detail in section 3.1 and non-functional requirements are described in section 3.2. The user interface is described in section 4, along with other external interface requirements like specific hardware and software requirements.

Readers interested in non-technical requirements may find section 7 useful, as it outlines other requirements.

2. Overall Description

2.1 Product Perspective

Brookstone B&B is a self-contained room booking system for use in a small B&B or Guesthouse environment. The scope of the project is currently for staff use only and not for guest or web use.

2.2 Product Features

The following list provides a brief outline and description of the main features:

1. Find Vacant Room
 - a. Allow for duration of stay to be defined
 - b. Allow for bed type (king, queen, twins)
 - c. Allow for room type (premium, deluxe, standard, etc.)
2. Book a Room
 - a. Register customer name
 - b. Register customer phone number and credit card
 - c. Register duration of stay
 - d. Register dietary needs (special meals, etc.)
3. Check Out
 - a. Provide total cost of room
4. View Status
 - a. Provide a list of currently booked rooms, including guest name and duration of stay

2.3 User Classes and Characteristics

The Brookstone B&B product is designed for B&B staff use. All features will be available to staff, but not guests or the public.

2.4 Operating Environment

The Brookstone B&B product is designed for use inside the B&B at the front desk. It requires Java version 1.8 or above and 1MB of disk space for the data files.

2.5 User Documentation

The user interface of the Brookstone B&B product is designed to be easy to use, however additional user documentation will be provided to assist the user with the learning curve. A help menu will also be available to describe how the features work.

2.6 Assumptions and Dependencies

The product currently does not provide a user interface for the guest to use. Therefore, the system is dependent on the B&B staff member having a phone or face-to-face conversation with the guest so that detailed guest information can be entered into the system. A future version of the Brookstone B&B product will incorporate a web interface so that existing and potential guests can use the system directly.

3. System Features

3.1 Core Features - Functional

3.1.1 Find Vacant Room

3.1.1.1 Stimulus/Response Sequences

- Step 1** User clicks on "Find Room"
- Step 2** User inputs check-in and check-out dates
- Step 3** User selects bed type from pull-down menu
- Step 4** User selects room type from pull-down menu
- Step 5** System searches rooms and provides room number(s) to user
- Step 6** If user chooses "Book Room", the Book Room screen will pop up

3.1.1.2 User Requirements

The user cannot proceed to the Book Room menu unless a room is available.

3.1.1.3 System Requirements

The application must ensure that the room is actually available before letting the user see it.

3.1.2 Book Vacant Room

3.1.2.1 Stimulus/Response Sequences

- Step 1** User inputs the customer name, phone number and credit card
- Step 2** User enters dietary needs (text field)
- Step 3** User confirms dates for check-in and check-out (allows user to book shorter stay)
- Step 4** If user chooses "Confirm Booking", the system will mark the room as booked and save the data to a file.

3.1.2.2 User Requirements

The user cannot confirm the booking without a valid name, phone number and credit card number for the customer.

3.1.2.3 System Requirements

The application must ensure that the room is properly marked as booked after the confirmation so that double booking does not occur.

3.1.3 Check Out

3.1.3.1 Stimulus/Response Sequences

Step 1 User selects "Check Out" from the menu

Step 2 User enters room number

Step 3 System displays invoice for customer including name, room number and total amount owing.

3.1.3.2 User Requirements

The user cannot create an invoice for a room that isn't currently booked out to a customer.

3.1.3.3 System Requirements

The application must mark the room as free when a customer checks out.

3.1.4 View Status

3.1.4.1 Stimulus/Response Sequences

Step 1 User selects "View Status" from the menu

Step 2 System displays all current booked rooms and duration of stay for each.

3.1.4.2 User Requirements

The user must be an authorized employee for this function.

3.1.4.3 System Requirements

The application must ensure that all booked rooms are displayed.

3.2 Additional Features – Non-Functional

3.2.1 Security

The system can only be accessed by authorized employees of the B&B.

3.2.2 Performance

The system must be able to search for free rooms, book new rooms, check out guests and display the current status of all rooms with minimal wait times for the user (target is less than 1 second response time).

3.2.3 Data Integrity

The system must write all reservation data to a file and must ensure that data corruption does not occur. Data corruption would mean lost reservations and lost money.

3.2.4 Ease of Use

Staff turnover at most B&Bs can be high, so the system must be easy to use, with simple menu commands and an on-line help system.

4. External Interface Requirements

4.1 User Interface

The main screen will provide a table, showing current rooms that are booked. Column headings will be:

- Room Number
- Guest Name
- Check In Date
- Check Out Date
- Room Type
- Bed Type
- Dietary Requirements

The menu options will include “Find Room” and “Check Out”. Note that “Book Room” can only be accessed from the Find Room menu because the user needs to find a free room first before they can book it for a customer.

4.2 Hardware Interface

The Brookstone B&B application requires PC capable of running Java version 1.8. All testing was done on a Windows based Core i5 PC. The application requires a read/write disk location with at least 1MB of storage space available for the application and data files.

4.3 Software Interface

The Brookstone B&B application requires Java version 1.8.

4.4 Communication Interfaces

No communication interfaces are required for this product.

5. Milestones

Milestone	Deadline	Comments
<i>SRS document</i>	1/1/16	
<i>Finalized User Interface Design</i>	1/5/16	Need to give time for user feedback
<i>Finalized Algorithm Design</i>	1/7/16	Need UI first
<i>Software Design Document</i>	1/10/16	
<i>Implementation Complete</i>	1/15/16	
<i>Test and Deployment</i>	1/17/16	

6. Key Resource Requirements

Major Activity	Skill Required	Internal Resource	Issues/Constraints
<i>Design the Interface</i>	GUI and Java knowledge	Katie	Busy with other stuff
<i>Design the data structures</i>	Java and coding skill	Katie	Busy with other stuff

Include documentation of the approval or confirmation of the requirements here. For example:

7. Other Requirements

Nothing right now

8. APPENDIX

8.1 Glossary

Guest

A person who visits and stays at the B&B for at least one night

Receptionist

An employee of the B&B who can take enquiries and book rooms over the phone

Front Desk Staff

An employee of the B&B who is in charge of the front desk of the B&B. They check guests in and out and can also look for free rooms and book rooms for guests who walk in without calling ahead.

Reservation

A guaranteed booking of a room at the B&B. It is backed up with a credit card.

Room

Rooms can have different attributes. The system currently supports 3 types of rooms (Premium, Deluxe and Standard) and 3 different bed types (Twins, Queen, King).

Dietary Requirements

Guests at the B&B may have special dietary requirements. The system allows for a pull-down menu and supports guests who are vegetarian, vegan, Halal, Kosher and gluten-free.

8.2 Project Proposal

Working title: Brookstone B&B

Platform: Java v1.8

MOTIVATION

Many small hotels and B&Bs use manual registration systems. The intent of this system is to make it easier to find rooms and books rooms as well as give the B&B manager a view of how his or her business is doing.

PROBLEM STATEMENT

The problems this project aims to resolve are:

- Determining if a room is free or not at some future date
- Guaranteeing that a reservation won't be lost or forgotten by the B&B staff
- Ensuring that guests get the right breakfast based on their dietary needs.
- Providing accurate invoice information to the customer when they check out.

To solve the above problems, the system will deliver the following functions:

- Find Room – including confirming room type and bed type
- Book Room – including start date and duration, as well as guest dietary needs
- Check Out – display accurate invoice for customer
- View Status – show current status of hotel/B&B rooms
- Prepare Breakfast – a simple function to allow kitchen staff to prepare the right meal for the guest.

OBJECTIVES

In addition to the functions listed above, the system should also meet the following objectives:

Meet timeline objectives laid out in the project plan

Create detailed software specifications

Create a fully-functional, bug-free application

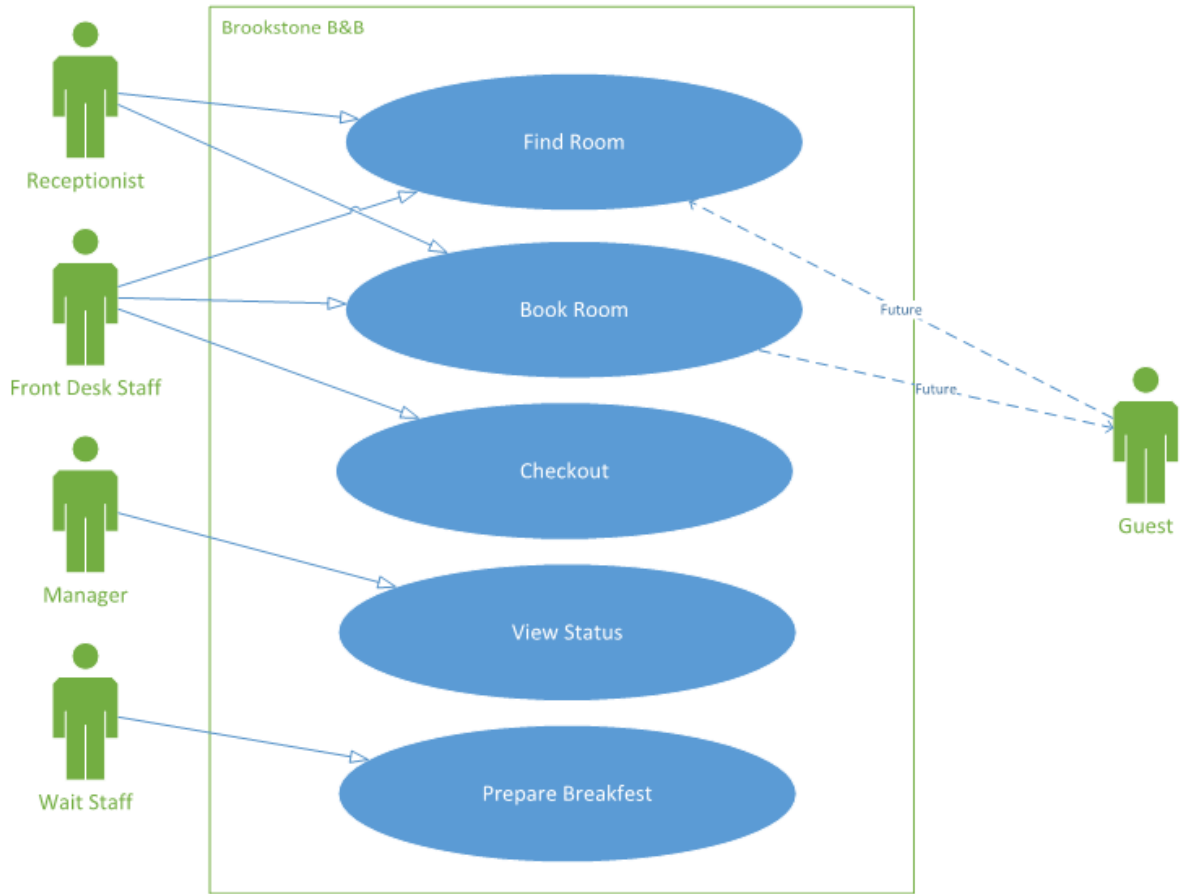
Allow for future expansion including direct guest booking (via the web), self-checkout, and detailed reporting of revenue by month and year.

METHODOLOGY

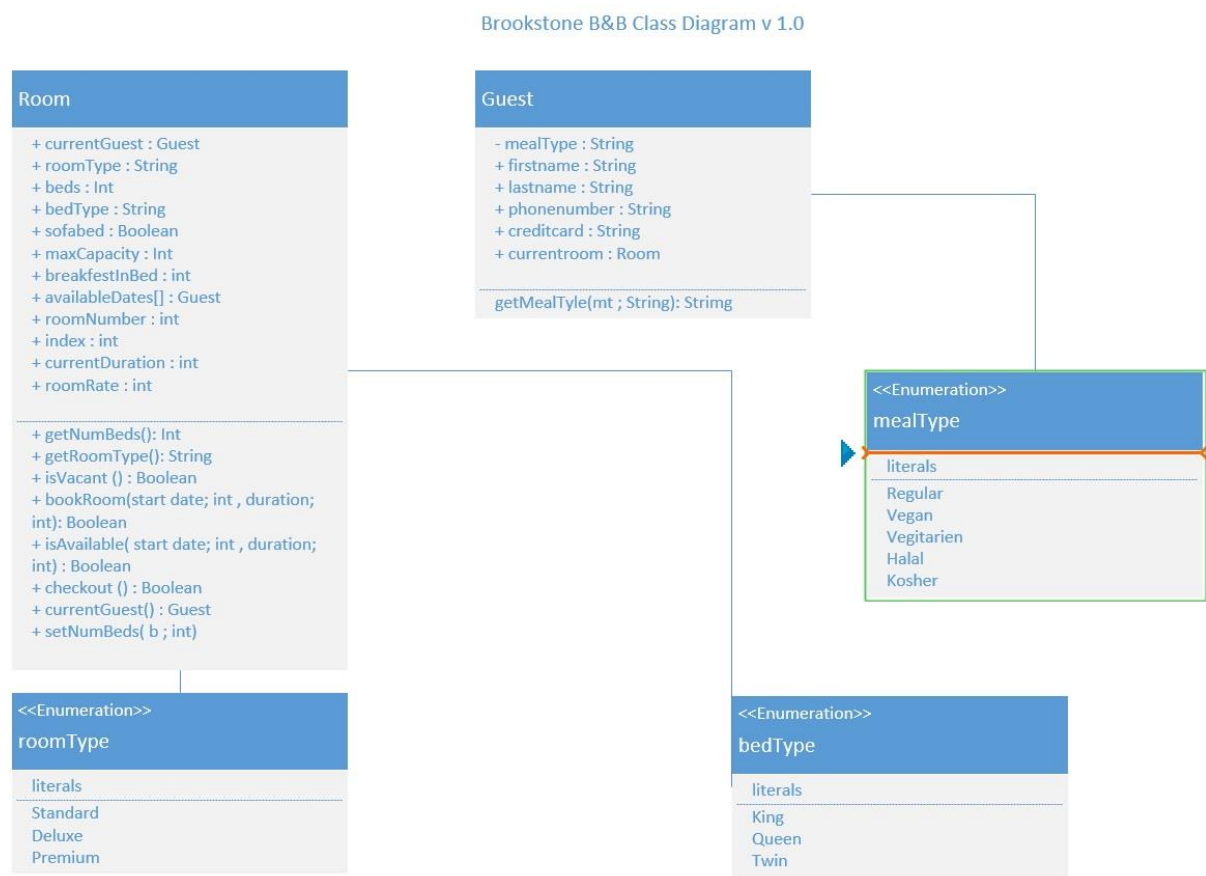
The project will use the agile development methodology and will involve user feedback throughout the development cycle. The core object design and algorithm programming will be done separately from the GUI programming.

8.3 Analysis Models

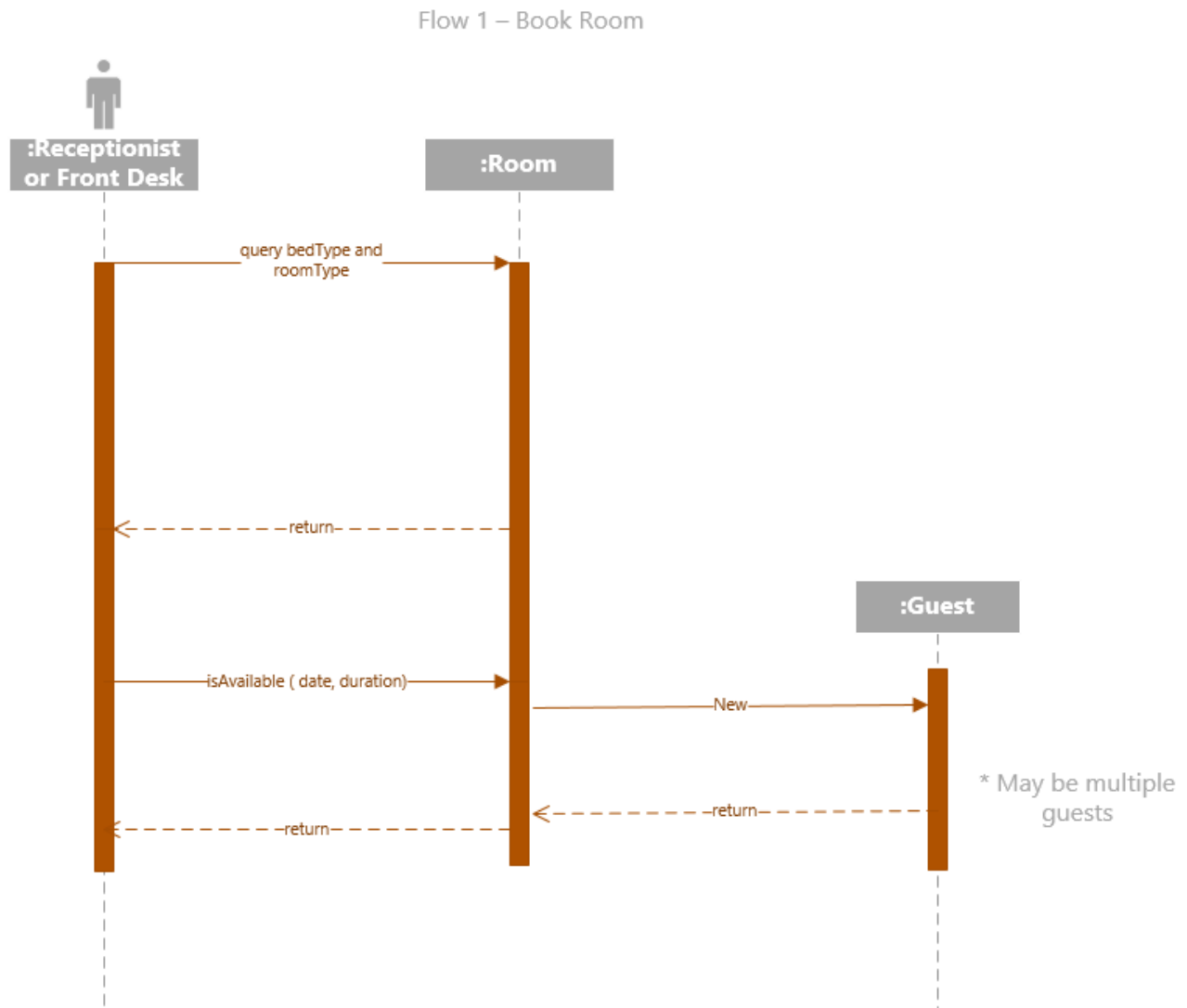
8.3.1 Use Case Diagram



8.3.2 Class Diagram

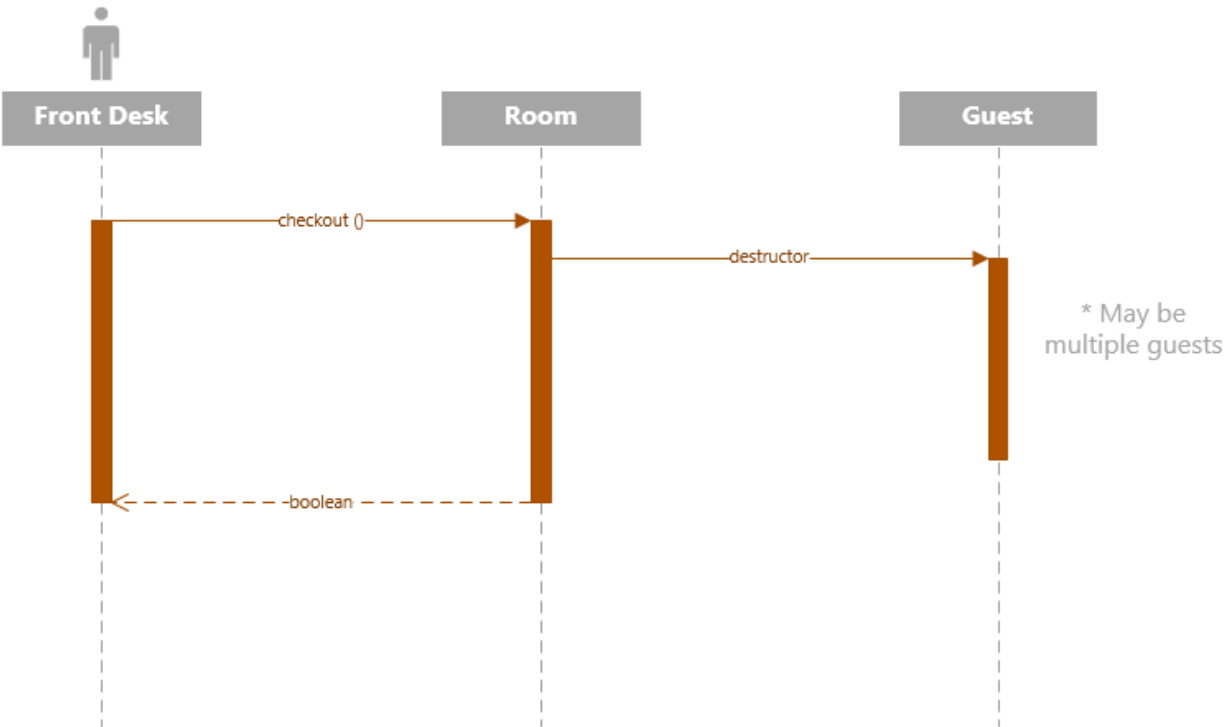


8.3.3 Sequence Diagrams

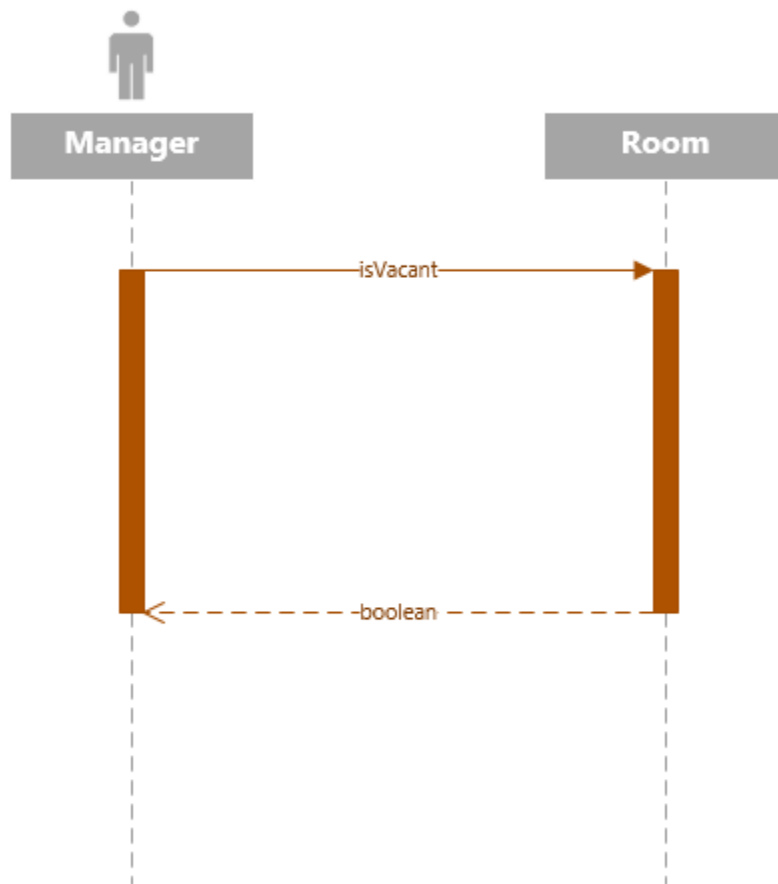


Brookstone B&B Requirements Specification

Flow 2 - Checkout



Flow 3 – View Status



Flow 4 – Prepare Breakfast

