Software Requirement Specifications (SRS)

John and Jane Bed and Breakfast Reservation Manager (BBRM)

CMIS 330 6380 Software Engineering Principles and Techniques (2215)

SRS Project

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1. Introduction

1.1 Purpose: This document will provide a detailed outline of the reservation management software system intended for John and Jane. It will describe the structure and functionality of the system and how it meets the needs of the clients, John and Jane.

1.2 Scope: Software product will be named B&B Reservation Manager. The system shall maintain a database of reservations. It shall check for reservation availability and display this information on the Calendar page. It shall create, read, update, and delete reservations. It shall receive expenses and income input and monitor expenses and profits on the Accounting Page. It shall record and manage customer information.

1.3 Definitions, acronyms, and abbreviations:

Term	Definition	acronyms
B&B Reservation Manager	**Name for the application to be developed**	**BBRM**
John and Jane	**Customers of this document, users of the system to be implemented**	**J&J**
Calendar	**This is the primary user interface that the customer shall use to manage reservations**	
Accounting	**This is the secondary user Interface that the customer shall use to monitor and update expenses and profits**	
Customer Information (Customer Info)	**Information the user inputs for new reservations. Consists of: name, address, phone number, dates, agreed upon price, credit card number, and room numbers**	

1.4 References:

Institute of Electrical and Electronics Engineers. Recommended Practice for Software Requirements Specifications, (ANSI IEEE Standard 830-1998.) New York: IEEE, 1998.

Institute of Electrical Engineers (IEEE). *IEEE Guide for Developing System Requirements Specifications:* Software Engineering, IEEE Standard 1223a-1998. 1998.

1.5 Overview

This document shall contain a typographical walkthrough of the application. It shall include one context (level 0) data flow diagram, a level 1 data flow diagram, an entity relationship diagram, use case diagrams of two scenarios, and a state diagram. All diagrams shall be found in the Appendix section of this document.

2. Overall Description

2.1 Product Perspective:

Product shall consist of two pages; accounting and calendar. The accounting page shall take expenses and income inputs from the user and display expenses and profits. The calendar shall display reservation information that is stored in the database. The BBRM shall store inputs from the customer into the database, and it shall create, read, update, and delete information as applicable.

2.2 Product Functions:

This product shall check for available reservations
Product shall display reservations and vacancy on the calendar
Product shall create a new reservation and store customer information in this reservation
Product shall accept a guarantee payment or a hold time limit
Product shall cancel a non-guaranteed reservation after hold time limit
Product shall record expenses and income that is inputted by the user
Product shall calculate profit from expenses and income and display both profit and expenses

2.3 User Characteristics:

Users of this product shall require some familiarity with computer systems. Users shall not require extensive technical expertise to use this product. Users shall not require High education to use this product.

2.4 Constraints:

Users of this product shall not share the private information of the customers recorded by this product. This product shall not be accessible by remote means. Performance of the system shall

be dependent on the hardware limitations of J&J. This product Shall be developed on and for Windows Operating systems.

2.5 Assumptions and Dependencies:

This Product shall depend on the availability of a Computer System and Database System. This Product assumes that the client information stored in the system shall remain private. Performance of the system shall be dependent on the hardware limitations of J&J. It is assumed that J&J will use a standard monitor, keyboard and computer mouse to interact with this product.

3. Specific Requirements

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3.1. External interface requirements

3.1.1. **User interface:** Product shall have an Accounting page, and a Calendar page. Reservations shall be viewed and managed on the Calendar page

3.1.2. **Hardware interfaces:** Product shall require standard computer monitor, mouse, and keyboard.

3.1.3. **Software interfaces:** Product will be run on a windows system

3.1.4. **Communications interfaces:** product shall be able to communicate with customers Database systems

3.2. Functional Requirements

3.2.1. Information flows

3.2.1.1. **Data flow Diagram 1:** This is the Level 0 DFD of the product.

3.2.1.1.1. **Data entities:** J&J, BBRM, Database

3.2.1.1.2. **Pertinent processes:** Reservation request from J&J and retrieved from Database by BBRM. Customer information is input to BBRM from J&J and then inputted from BBRM to the database. Expenses and Income Inputted to BBRM from J&J and stored in the Database

3.2.1.1.3. **Topology:** Please refer to figure 1.0 under the Appendixes section of this document to view this diagram.

3.2.1.2. **Data flow Diagram 2:** This is the Level 1 DFD of the Product.

3.2.1.2.1. **Data entities:** J&J, Calendar, Accounting, Database

3.2.1.2.2. **Pertinent processes:** J&J checks calendar for reservation availability, Calendar displays Reservations stored in Database and vacancies. J&J inputs customer information into a new reservation, and the completed reservation is stored in the database. J&J inputs expenses and income into accounting. Accounting outputs expenses and calculated profit

3.2.1.2.3. **Topology:** Please refer to figure 1.1 under the Appendixes section of this document to view this diagram.

3.2.2. Process descriptions

3.2.2.1. Process 1: **Calendar Page**

3.2.2.1.1. Input data entities: reservation list, new reservation entry

3.2.2.1.2. Algorithm or formula of process: on Calendar check, get reservation list from database. If there is a vacancy, add a new reservation to the list and update the database.

3.2.2.1.3. Affected data entities: Database, Calendar

3.2.2.2. Process 2: **New Reservation**

3.2.2.2.1. **Input data entities:** name, address, phone #, price, card #, room #/s, 1 day payment, hold status, time limit

3.2.2.2.2. **Algorithm or formula of process:** Customer shall input name, address, phone number, agreed price, dates, credit card number, room number/s, 1 day payment, and hold status into a new reservation entry on the calendar page. If 1 day payment is inputted, hold status shall be set to “guaranteed” and time limit to 0. If 1 day payment is not inputted, hold status shall be set to “not guaranteed” and a time limit shall be inputted.

Input the new reservation into the database. If hold status is set to “not guaranteed” and the time limit is reached, delete reservation from the database.

3.2.2.2.3. **Affected data entities:** Calendar, Database, Accounting

3.2.2.3. Process 3: **Update Accounting**

3.2.2.3.1. **Input data entities:** Expenses and Income

3.2.2.3.2. **Algorithm or formula of process:** Receive expenses and income as input, subtract expenses from income to obtain profit, store all information in Database, output expenses and profit to accounting page.

3.2.2.3.3. **Affected data entities:** Database, Accounting

3.2.3. Data construct specifications

3.2.3.1. Construct 1: **Reservations**

3.2.3.1.1. **Record type:** list of attributes

3.2.3.1.2. **Constituent fields:** name, address, phone #, price, card #, room #/s, 1 day payment, hold status, time limit

3.2.3.2. Construct 2: **Database**

3.2.3.2.1. **Record type:** list of objects

3.2.3.2.2. **Constituent fields:** reservations

3.2.4. Data Dictionary

3.2.4.1. Data element 1

3.2.4.1.1. Name: **name**

3.2.4.1.2. Representation: attribute of reservation

3.2.4.1.3. Units/Format: string

3.2.4.1.4. Precision/Accuracy: user input

3.2.4.1.5. Range

3.2.4.2. Data Element 2

3.2.4.2.1. Name: **address**

3.2.4.2.2. Representation: attribute of reservation

3.2.4.2.3. Units/Format: string

3.2.4.2.4. Precision/Accuracy: user input

3.2.4.2.5. Range

3.2.4.3. Data element 3

3.2.4.3.1. Name: **phone number**

3.2.4.3.2. Representation: attribute of reservation (phone #)

3.2.4.3.3. Units/Format: integer

3.2.4.3.4. Precision/Accuracy: user input

3.2.4.3.5. Range: 10-digits + extension if applicable

3.2.4.4. Data element 4

3.2.4.4.1. Name: **price**

3.2.4.4.2. Representation: attribute of reservation

3.2.4.4.3. Units/Format: float

3.2.4.4.4. Precision/Accuracy: user input

3.2.4.4.5. Range: determined by the users J&J

3.2.4.5. Data element 5

3.2.4.5.1. Name: **dates**

3.2.4.5.2. Representation: attribute of reservation

3.2.4.5.3. Units/Format: List of strings

3.2.4.5.4. Precision/Accuracy: user input

3.2.4.5.5. Range: determined by the users J&J

3.2.4.6. Data element 6

3.2.4.6.1. Name: **credit card number**

3.2.4.6.2. Representation: attribute of reservation (card #)

3.2.4.6.3. Units/Format: integer

3.2.4.6.4. Precision/Accuracy: user input

3.2.4.6.5. Range: 16-digits

3.2.4.7. Data element 7

3.2.4.7.1. Name: **room numbers**

3.2.4.7.2. Representation: attribute of reservation (room #/s)

3.2.4.7.3. Units/Format: array of type boolean

3.2.4.7.4. Precision/Accuracy: user input

3.2.4.7.5. Range: 1-4

3.2.4.8. Data element 8

3.2.4.8.1. Name: **1 day payment**

3.2.4.8.2. Representation: attribute of reservation

3.2.4.8.3. Units/Format: float

3.2.4.8.4. Precision/Accuracy: user input

3.2.4.8.5. Range: determined by users J&J

3.2.4.9. Data element 9

3.2.4.9.1. Name: **hold status**

3.2.4.9.2. Representation: attribute of reservation

3.2.4.9.3. Units/Format: boolean

3.2.4.9.4. Precision/Accuracy: user input

3.2.4.9.5. Range 0-1

3.2.4.10. Data element 10

3.2.4.10.1. Name: **time limit**

3.2.4.10.2. Representation: attribute of reservation

3.2.4.10.3. Units/Format: string

3.2.4.10.4. Precision/Accuracy: user input

3.2.4.10.5. Range: Determined by users J&J

3.2.4.11. Data element 11

3.2.4.11.1. Name: **expenses**

3.2.4.11.2. Representation: attribute of accounting page

3.2.4.11.3. Units/Format: float

3.2.4.11.4. Precision/Accuracy: user input

3.2.4.11.5. Range: TBD

3.2.4.12. Data element 12

3.2.4.12.1. Name: **income**

3.2.4.12.2. Representation: attribute of accounting page

3.2.4.12.3. Units/Format: float

3.2.4.12.4. Precision/Accuracy: user input

3.2.4.12.5. Range: TBD

3.2.4.13. Data element 13

3.2.4.13.1. Name: **profit**

3.2.4.13.2. Representation: attribute of accounting page

3.2.4.13.3. Units/Format: float

3.2.4.13.4. Precision/Accuracy: dependent on income and expense inputs

3.2.4.13.5. Range: income minus expense

3.3. Performance requirements: application shall display information accurately with minimal delays. Database shall be secure and have sufficient storage for reservation entries. Sensitive client information

shall be private to all but the users (J&J) and the stakeholders (Clients).

3.4. Design constraints: This application shall be developed for the Windows operating system. This application shall not be accessed remotely and shall be maintained within J&J hardware.

3.5. Software system attributes: application shall have two main interfaces: Calendar and Accounting pages. The Calendar page shall display reservations from the database accurately and vacancies shall be clearly visible.

3.6. Other Requirements: Application shall be easy to navigate for anyone who is familiar with computer systems.

Appendixes

Figure 1.0 Context (Level 0) DFD

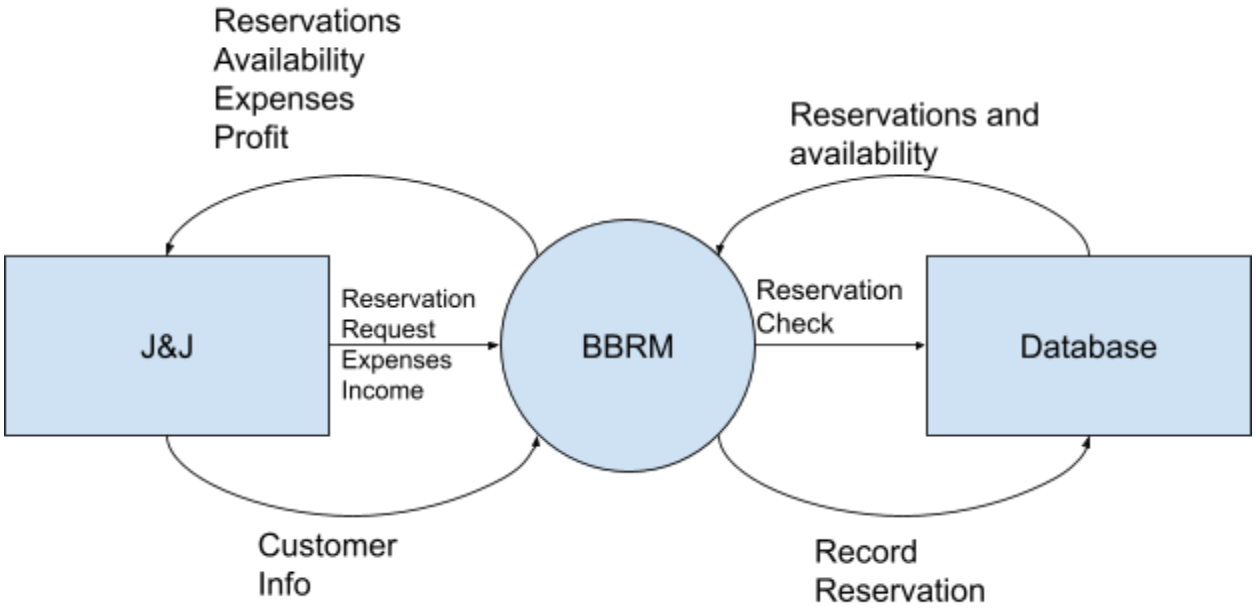

Figure 1.1 Level 1 DFD

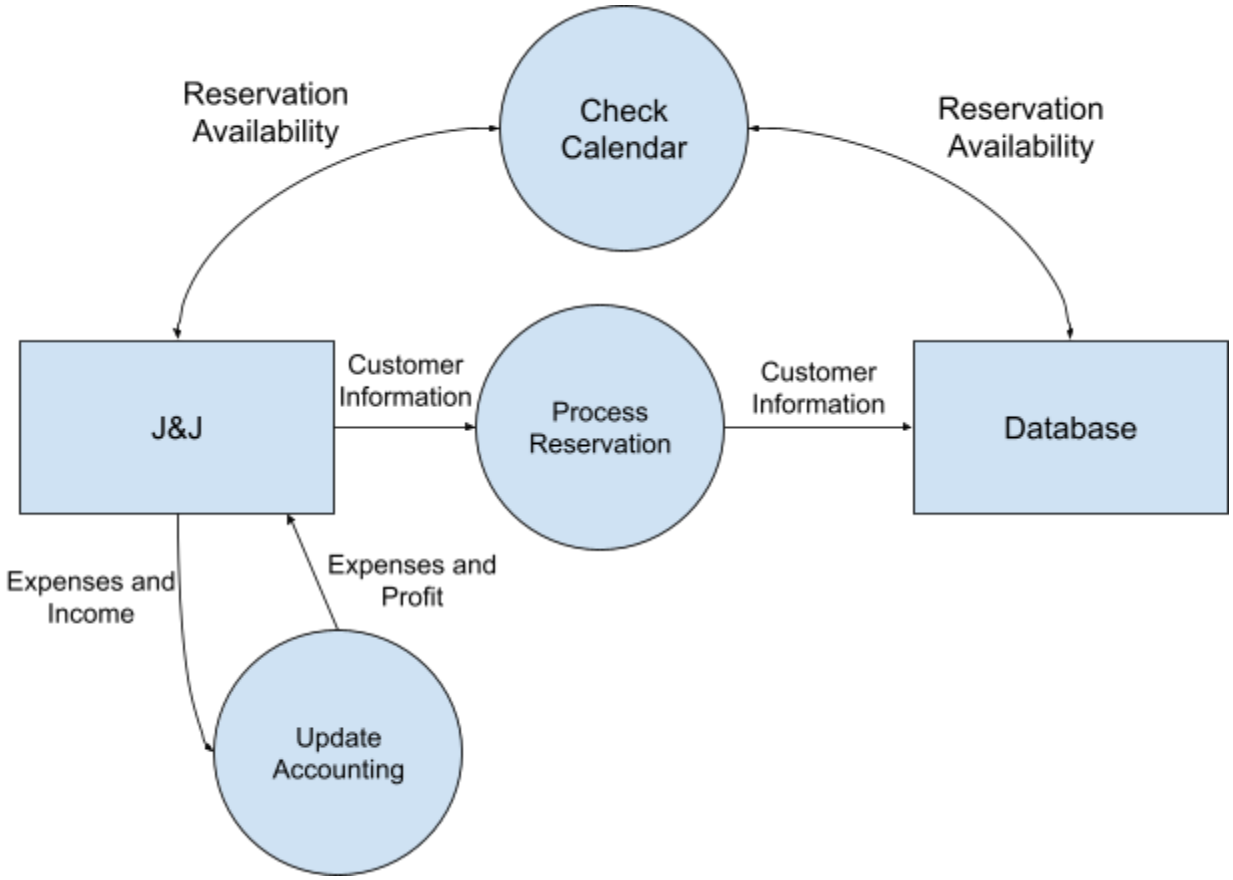

Figure 2.0 Entity Relationship Diagram

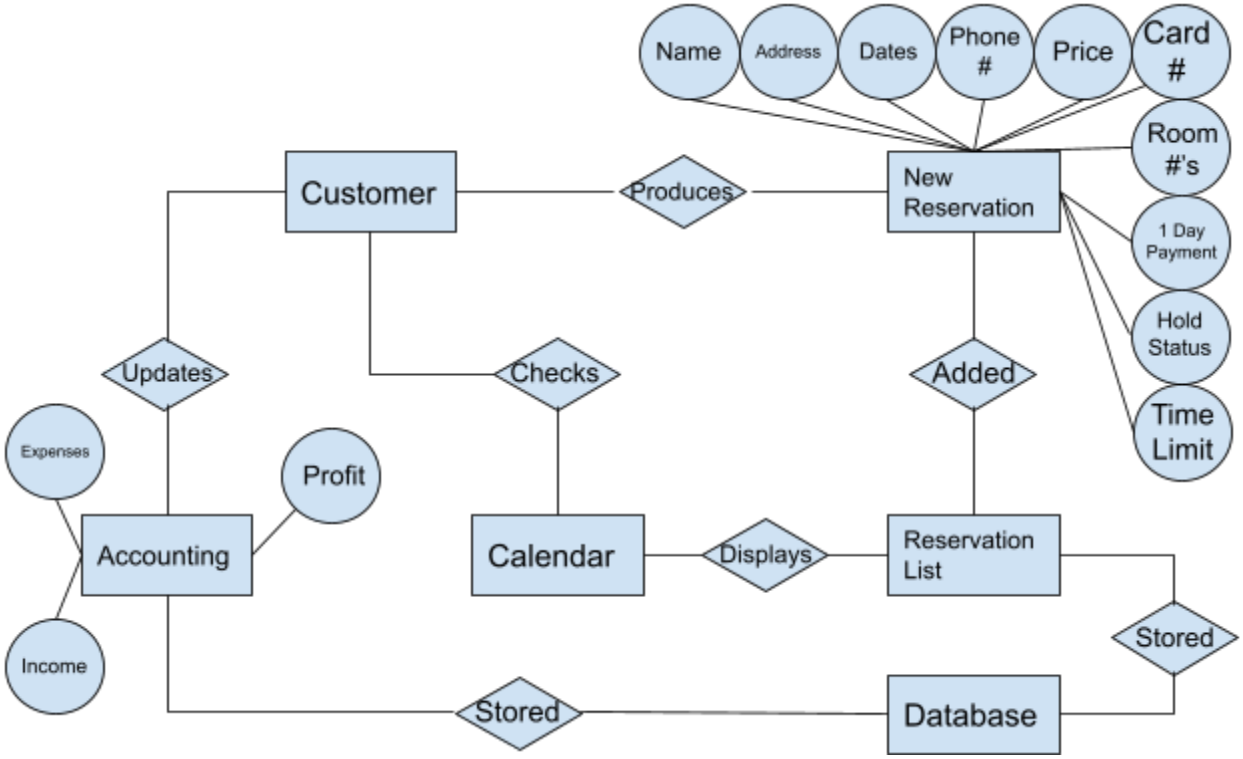

Figure 3.0 Use Case Scenario 1

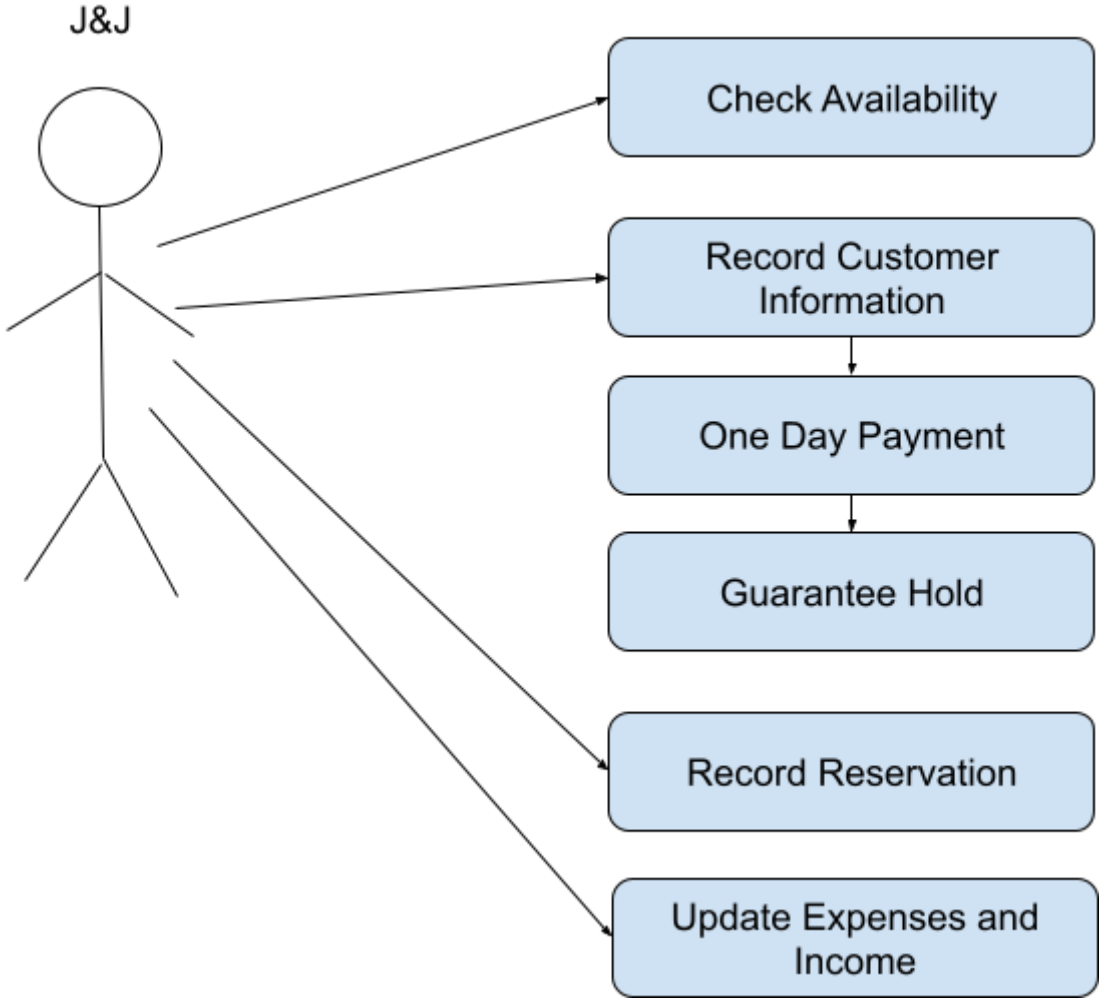

Figure 3.1 Use Case Scenario 2

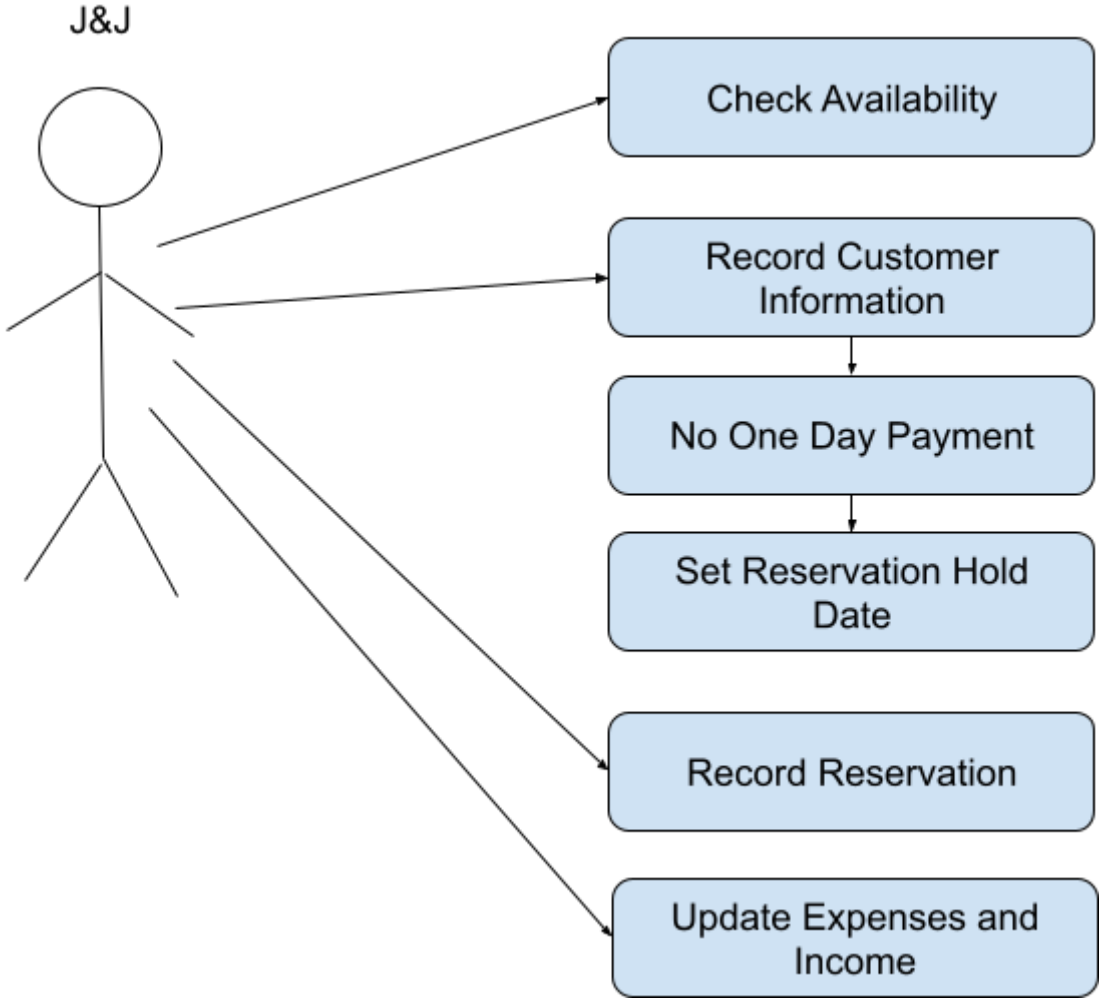

Figure 4.0 State Diagram