**Report on Hotel Management System**

**Introduction**

This paper proposes a design of a hotel management system based on the class diagram shown below. The system is intended for the improvement of hotel management procedures in relation to room booking, facilities and customers’ data arrangement. The class diagram presents the schematic view of the system’s components and their mutual relationships, which present a solid base for the system.

**Objectives**

The system seeks at making the booking process easy and effective and improving the overall performance. It aims at other ensuring hotel that operations. Customer and Class booking Diagram information Overview is well The organized class while diagram at depicts the the same fundamental offering elements a flexible of structure the to hotel incorporate management system which include the Customer, Booking, Room, Amenity, and Hotel Manager classes. Every has class been created with specific attributes and methods that are intended to support the overall functionality of The the Customer class system. contains information about customer and his or her bookings while the Booking class is responsible for the management of the reservations. The Room and Amenity classes distinguished Hotel Manager the class facilities contain provided operations by related the to hotel management and of the the hotel.

**Class Diagram**

A screenshot of a computer

Description automatically generated

**Explanation of the Diagram**

The Customer class includes the customer’s identification, name, and status. It also keeps track of bookings made by the customer and offers methods to work out the discounts and make bookings for rooms. The Booking class contains the booking ID, the customer who is booked, the rooms that have been assigned, the amenities that have been requested, the discount that has been given and the total amount to be paid. Some of the methods included are; calculating the total cost and generating invoices. The Room class depicts the individual rooms in the hotel and contains details such as the type of the room, the features that it has, the room location and the amenities that are included in the room. Some of the services that it offers include; providing ways of determining the room price and the cost of adding amenities. The Amenity type provides more description details and about the the additional base price. services Last, that are the provided Hotel Manager by class the is hotel the encompassing master the class ID, that name, controls the system, create new list of rooms and amenities, put new entries and view the resources.

**System Workflow**

The system enables the customers to see the list of available rooms and amenities, book for the rooms and amenities and get the invoices. The booking process computes for the total amount due, with the discounts and amenities included. It is possible for the managers to edit or enter new information with regard to rooms the and amenities as and when they change. Thus, this workflow prevents any delays that may occur and at the same time is quite convenient for both customers and managers.

**Benefits of the Concept**

This system design has the following benefits: Modularity, Scalability, Reusability, Efficiency. It is important to point out that each component can be easily modified or extended due to the modularity of the system. It is possible to expand the system and incorporate more features or entities in the future making it scalable. It can be used in other systems because the classes such as Customer and Room are generic. Automation of processes lead to improved efficiency for example in booking and invoice creation.

Challenges Improvements and Some of the issues that have been identified include; accurate and correct relationships among classes and possible exceptions in calculation of costs as well as invoice preparation. Possible enhancements may also involve integrating capability for booking cancellation and enhancing the methods used in calculating discounts for instance in cases of last minute booking.

**Conclusion**

The class diagram presents a high level and coherent approach to the design of a hotel management system. This is important since it provides a proper structure that defines all the necessary components and their relations that are vital for proper development and functioning of the system.

**Reference**

1. Kent Institute Australia, “Assessment Task 3 Brief” [Course Material].
2. Harvard Referencing Workbook, Kent Learning Management System.
3. Gamma, E., Helm, R., Johnson, R., & Vlissides, J. Design Patterns: Elements of Reusable Object-Oriented Software. Addison-Wesley, 1994.
4. Fowler, M. UML Distilled: A Brief Guide to the Standard Object Modeling Language. Addison-Wesley, 2018.
5. Eckel, B. Thinking in Java. Prentice Hall, 2006.