

CSE251-Software Engineering

Hotel Mangement System

(The Best to The Best)

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Hotel management system

Project description: A hotel management system (HMS) is an integrated suite of business, data and web applications used for the management and control of all aspects of a hotel. It stores data, processes, integrates information and enables users to obtain real-time reports on any part of the organization. The system is built on several protocols and proprietary systems that can be integrated with multiple platforms using various technologies. It allows managers to track every aspect of their business. system will be developed to manage the hotel operations effectively. This proposal will include features such as reservation, guest management, and various reports. The application is intended to be integrated with a customer management (CRM) system to provide booking capabilities and allow for other predefined interface requirements such as room types and amenities

Hotel management system aims to provide the best possible services to hotels in terms of guests, rooms, points and money. The software is going to use computer-based technologies for hotel management purposes and will be based on the IT platform. It has been designed keeping in mind the overall operations of a hotel so as to provide point-of-sale system for guests (booking), cash management system for handling room bookings from cash receipts, check-in/check-out process billing.

Requirements System

1 Login: This requirement specifies that users and staff members must log in to the website or app using their registered email and password before accessing any features or services.

1.1 Email: Every user and staff member has a unique email address that is already registered in the system.

1.2 Password: Every user and staff member has a unique password that is already registered in the system. They must enter this password along with their email to log in.

2. Sign up: This requirement specifies that users can create a new account on the website or app by providing certain personal information.

2.1 Email: The user must provide a valid email address to create a new account.

2.2 Password: The user must create a new password for their account.

2.3 Re-password: The user must confirm their password by entering it again.

2.4 Address: The user must provide their full address, including street name and house/apartment number.

2.5 Country: The user must select their country of residence from a dropdown list.

2.6 State: The user must select their state/province of residence from a dropdown list.

2.7 City: The user must provide the name of their city.

2.8 Number: The user must provide their phone number. 2.9 Postal code: The user must provide their postal code or zip code.

2.10 Gender: The user must select their gender from a dropdown list.

2.11 Age: The user must provide their age.

3. Booking: This requirement specifies that users can book various types of rooms and services offered by the hotel.

3.1 Single room: The user can book a single room for their stay.

3.2 Double room: The user can book a double room for their stay.

3.3 VIP room: The user can book a VIP room for their stay.

3.4 Suite: The user can book a suite for their stay.

3.5 Wedding: The user can book wedding services at the hotel.

3.6 Arrival time: The user must provide their expected arrival time.

3.7 Traveling time: The user must provide their estimated traveling time to the hotel.

4. Activities: This requirement specifies that the hotel offers various activities and events for its guests.

4.1 Party: The hotel hosts parties and events for its guests.

4.2 Events: The hotel hosts various events, such as concerts or performances.

4.3 Speakers: The hotel invites guest speakers to give talks or presentations.

4.4 Meditation: The hotel offers meditation and relaxation sessions for its guests.

5. Restaurant: This requirement specifies that the hotel has a restaurant that offers various food and beverage options.

5.1 Breakfast: The restaurant offers breakfast options.

5.2 Lunch: The restaurant offers lunch options.

5.3 Dinner: The restaurant offers dinner options.

5.4 Snacks: The restaurant offers snacks and light bites.

5.5 Drinks: The restaurant offers various types of drinks.

5.5.1 Soft drinks: The restaurant offers non-alcoholic drinks.

5.5.2 Hard drinks: The restaurant offers alcoholic drinks.

5.5.3 Hot drinks: The restaurant offers hot drinks, such as coffee or tea.

5.5.4 Cold drinks: The restaurant offers cold drinks, such as soda or juice.

6. Payments: This requirement specifies the types of payment methods accepted by the hotel.

6.1 Cash: Guests can pay for their services using cash.

6.2 Credit card: Guests can pay for their services using a credit card.

Center care: This requirement specifies that the hotel has a spa and sauna center for its guests.

7.1 Sauna: The hotel offers a sauna for guests to use.

7.2 Spa: The hotel offers various spa services for guests, such as massages or facials.

7.3 Massage: The hotel offers various types of massages for guests.

8. Beauty center: This requirement specifies that the hotel has a beauty center for its guests.

8.1 Ladies: The beauty center offers services for female guests, such as makeup or hair styling.

9. Networks: This requirement is not clear, but it may refer to the hotel's internet or network services.

10. Feedback: This requirement specifies that guests can leave feedback or reviews about their experience at the hotel.

11. Gaming room: This requirement specifies that the hotel has a gaming room for its guests.

12. Department: This requirement specifies the various departments within the hotel.

12.1 Room services: This department provides room service to guests.

12.2 Marketing: This department handles the hotel's marketing and advertising efforts.

12.3 Reception: This department is responsible for the hotel's front desk and check-in/check-out processes.

12.4 Finance: This department handles the hotel's financial operations.

12.5 IT: This department handles the hotel's technology and computer systems.

12.6 Chefs: This department is responsible for preparing food in the hotel's restaurant.

12.7 Waiters: This department is responsible for serving food and beverages to guests in the restaurant.

12.8 Security: This department is responsible for the safety and security of guests and staff.

12.9 Bathrooms staff: This department is responsible for cleaning and maintaining the hotel's bathrooms.

12.10 Staff gym: This department is responsible for the hotel's gym and fitness center.

12.11 Staff beauty center: This department is responsible for the hotel's beauty center.

12.12 HR: This department handles the hotel's human resources and staffing needs.

13. Gym: This requirement specifies that the hotel has a gym and fitness center for its guests.

14. Records staff: This requirement is not clear, but it may refer to the hotel's record-keeping or administrative staff.

15. User: This requirement specifies the different types of users or roles within the hotel.

15.1 Receptionist: This role is responsible for the hotel's front desk and check-in/check-out processes.

15.2 Customer: This role refers to the hotel's guests.

15.3 Manager: This role is responsible for overseeing the hotel's operations and staff.

Subsystem Names

1. Registration system

1.1 login

1.2 sign up

2. Security

2.1 access level

3. booking management System

4: activities

5. restaurant

6. gym

7. centre care

8. beauty center

9. feedback

10. Department

11. User Management

12. records staff

13.payements

13.1 cash

13.2 credit

14. bills

15. payrolls

Subsystem Function

1. Registration system: The user management system typically includes a registration system where users can sign up and create an account. This may involve providing personal information such as name, email address, phone number, and password.
 - 1.1 Login: Once a user has registered, they can log in to the system to access its features and services. This typically involves entering their username and password, and may involve additional security measures such as two-factor authentication.
 - 1.2 Sign up: The sign-up process allows new users to create an account within the user management system. This typically involves providing personal information such as name, email address, phone number, and password.
2. Security: The user management system includes security features to protect user data and prevent unauthorized access. This may include access controls, authentication mechanisms, and encryption.
 - 2.1 Access level: The user management system may have different access levels for different types of users, such as administrators, staff members, and regular users. This allows different users to access different features and data within the system.
3. Booking: The user management system may include a booking system for facilities such as rooms, sports courts, or other amenities. This allows users to reserve time slots or resources as needed.
4. Activities: The user management system may also provide information about activities and events that are available at the facility, such as fitness classes, workshops, or social events.
5. Restaurant: If the facility includes a restaurant, the user management system may provide information about menus, hours of operation, and reservations.
6. Gym: If the facility includes a gym or fitness center, the user management system may provide information about equipment, classes, and personal training services.
7. Center care: If the facility includes a childcare center, the user management system may provide information about hours of operation, staff qualifications, and registration procedures.
8. Beauty center: If the facility includes a beauty center or spa, the user management system may provide information about services, prices, and appointment scheduling.
9. Feedback: The user management system may allow users to provide feedback on their experiences with the facility, such as suggestions for improvements or praise for staff members.

10. Department: The user management system may include different departments or sections, such as membership, billing, or customer service.
11. User Management: The user management system is responsible for managing user accounts, passwords, and access permissions. This includes creating and deleting accounts, resetting passwords, and modifying access levels as needed.
12. Records staff: The user management system may include features for managing staff records, such as employee information, schedules, and performance evaluations.
13. Payments: The user management system may include features for managing payments and billing, such as processing credit card payments, generating invoices, and tracking balances.
 - 13.1 Cash: If the facility accepts cash payments, the user management system may include features for managing cash transactions and tracking cash balances.
 - 13.2 Credit: If the facility accepts credit card payments, the user management system may include features for processing credit card transactions and managing payment processing services.
14. Bills: The user management system may include features for generating and sending bills or invoices to users, tracking payment status, and managing collections.
15. Payrolls: The user management system may include features for managing employee payroll and benefits, such as calculating wages, deducting taxes and other withholdings, and managing benefits enrollment.

Subsystem Interface

Registration system functions

1: public Boolean login (user name , password);

2: public Boolean sign up (String username , int password d, int re password, String address, String country, String city, int phone number, int postal code , String gender,int age) ;

Booking system interface

3: public void Bookingrooms (int id);

3,1: public void Bookingrestaurant (String name);

3,2: public void Bookinggym (int id);

3,3: public void Bookingactivities (int id);

3,4: public void Bookingcentercare (String your name);

3,5: public void Bookingbeautycenter (String name);

4:public void activities schedule(double time);

5:public void checkbookingactivities(int id, string invitation , String levels);

6:public void check bookingrestaurant(String restaurant,int id ,int number of humans);

7:public void booking gym(int id , string name);

8:public void booking centre care(int id ,string name);

9:public Boolean payments(double money);

Department Registration Interface

10: Public void department(String name);

11: Public void AddemployeeToDepartment(String Name , String ID);

11.1: Public void deleteemployeefromdepartment(String Name, String ID);

12:Security

12.1 User Login

```
public boolean login(String username, int password)
```

12.2 Access Levels:

```
public int getAccessLevel(String username)
```

12.3 Data Confidentiality

Authentication (fingerprints, ID cards)

```
public boolean authenticateWithFingerprint(byte[] fingerprintData)
```

```
public boolean authenticateWithIDCard(String cardID)
```

13.Staff

13.1 Bathrooms staff

```
public void assignToBathroomStaff(String employeeID, String bathroomID)
```

13.2 Staff gym

```
public void assignToGymStaff(String employeeID, String gymID)
```

13.3 Staff beauty center

```
public void assignToBeautyCenterStaff(String employeeID, String beautyCenterID)
```

13.4 HR

```
public void hireEmployee(String name, String position)
```

```
public void fireEmployee(String employeeID)
```

14:Gym

```
public void Gym(String Name, String ID)
```

15:Employee Rating

```
public void rateEmployee(String employeeID, int rating)
```

16:User

17.1:Receptionist

```
public void checkInGuest(String guestID)
```

```
public void checkOutGuest(String guestID)
```

17.2:Customer

```
Public void customer (String name, String ID, String address, String number)
```

17.3:Manager

public void approveEmployeeHire(String employeeID)

public void approveEmployeeFire(String employeeID)

18. Changing room pricing

public void setRoomPrice(String roomID, double price)

19. Changing contact information

public void updateContactInfo(String employeeID, String newContactInfo)

20. Accounting

20.1 Payroll

public void processPayroll (int employeeid)

20.2 Bills

public void generateBill(String guestID)

21. Reports and Analytics

public Report generateReport(Date startDate, Date endDate)

22. Pricing Engine

public double calculatePrice(String roomType, Date startDate, Date endDate)

23. Revenue Analysis Manager

Public double getRevenueByDepartment(String departmentID)

24. Reports and Analytics

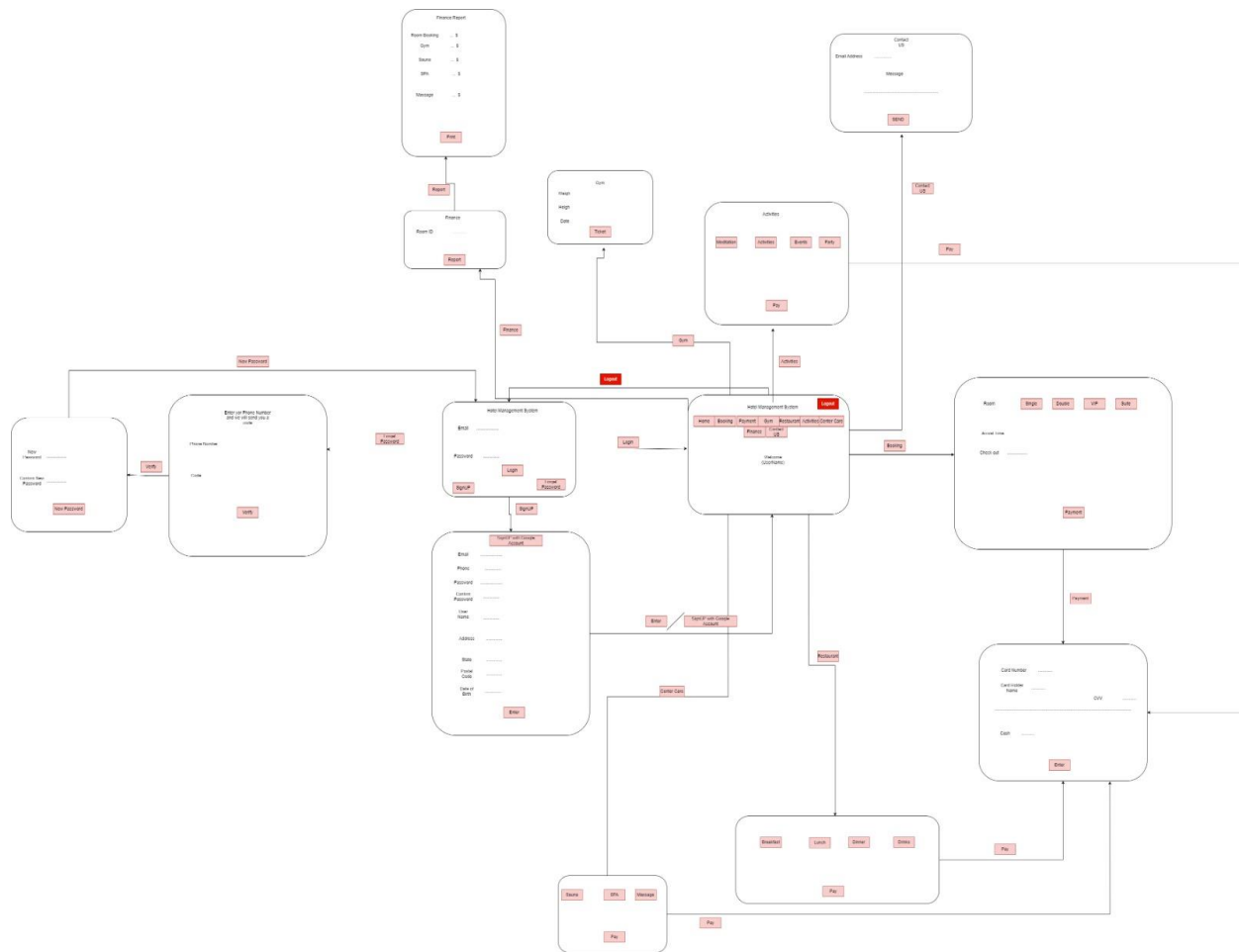
public Report generateAnalyticsReport(Date startDate, Date endDate)

Trace Matrix

A	B	C	D
Registration System	Security	Booking	Activities
E	F	G	H
Restaurant	Gym	Centre Care	Beauty Center
I	J	K	L
Feedback	Department	User Management	Records Staff
M	N	O	
Payment	Bills	Payrolls	

Requirements Number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	1	0	0	1	1	1	1	1	0	0	1	0	0	0	0
2	1	0	0	1	1	1	1	1	0	0	1	0	0	0	0
3	0	1	1	0	1	0	0	0	1	0	0	0	1	0	0
4	0	0	1	0	1	0	0	0	1	0	0	0	1	1	0
5	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0
6	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
7	0	0	1	0	0	1	0	0	1	0	0	0	1	1	0
8	0	0	1	1	0	0	1	0	1	0	0	0	1	0	0
9	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
13	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
15	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0

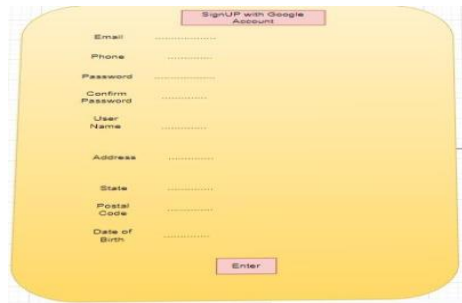
Graphical Interface (GUI)



You can take a look in this [link](#)

User Manual

1. Signup

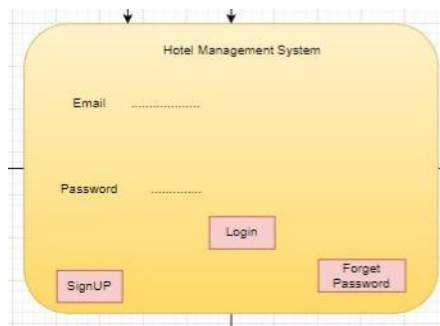


A yellow rounded rectangular form titled "SignUP with Google Account" in a pink box at the top right. The form contains the following fields with dotted lines for input: Email, Phone, Password, Confirm Password, User Name, Address, State, Postal Code, and Date of Birth. A pink "Enter" button is located at the bottom right of the form.

Users can create a new account by providing certain personal information.

When User Signup to our system they can Signup directly by their Google account or Facebook account or they can do it step by step by entering a valid email address as (Username@gmail.com) and entering a valid password that must contains small letters, Capital letters, numbers and Symbols as (Kk123m\$) The user must confirm their password by entering it again. They must also enter a valid phone number and their full address, including street name and house/apartment number. and the rest of Info.

2. Login

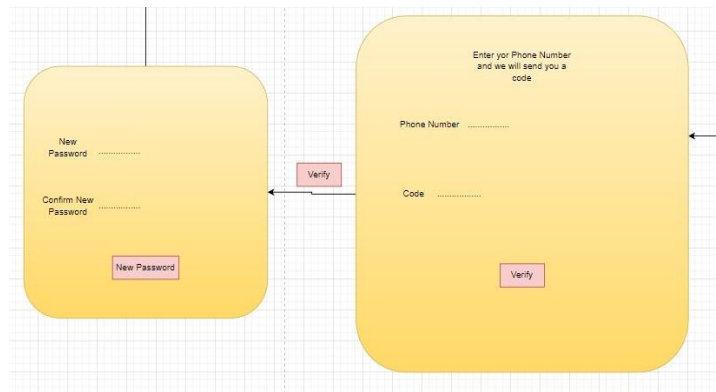


A yellow rounded rectangular form titled "Hotel Management System" at the top. It contains two input fields with dotted lines: Email and Password. Below the Password field is a pink "Login" button. At the bottom left is a pink "SignUP" button, and at the bottom right is a pink "Forget Password" button. Two arrows point down to the top of the form.

To login to our Hotel Management system you must first signUP and Login by your email and password that you use to signup to our system.

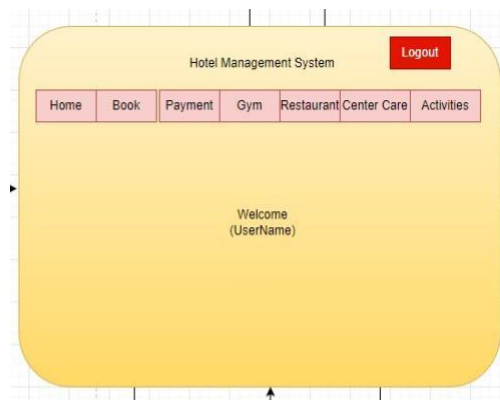
Every user and staff member has a unique password that is already registered in the system. They must enter this password along with their email to log in.

3. Forget Password



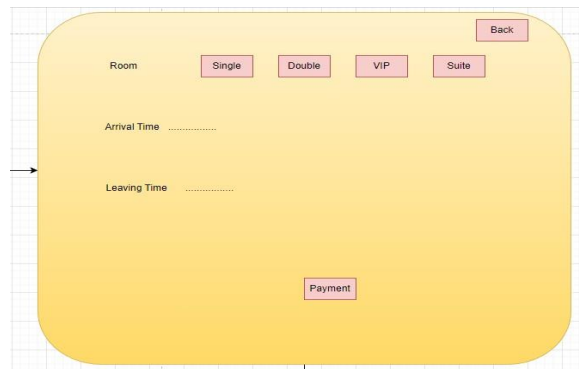
If you forget your password please click on the icon (Forget Password) at the login window and then enter your phone number that you use at signing Up and we will send you a verification code to make sure that is really you, please make sure to enter the code very carefully to change your password, after entering the right verification code enter your new password then confirm it by re-entering it again , then click enter.

4. Hotel Management System Main Page



At the main page the user have many services can select like : Booking a room, Gym, Restaurant, Center Care, Activities.

5. Booking a room

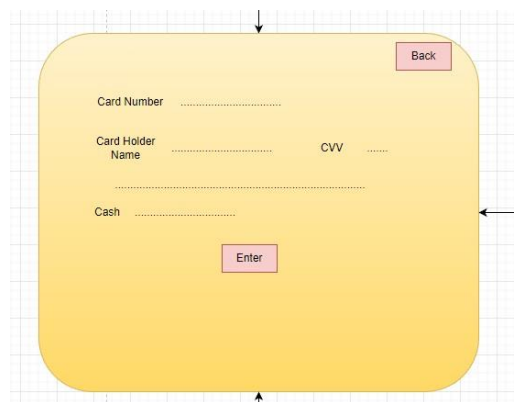


A yellow rounded rectangular form for booking a room. At the top right is a pink 'Back' button. Below it, the label 'Room' is followed by four pink buttons: 'Single', 'Double', 'VIP', and 'Suite'. Further down are two text input fields: 'Arrival Time' and 'Leaving Time'. At the bottom center is a pink 'Payment' button. A black arrow points to the left side of the form.

Users can book various types of rooms and services offered by the hotel.

To Book a room you must first choose the type of the room you want to book as Single, Double, VIP or Suite and you have enter the time of arriving and the time of leaving then Click on payment to pay for the room.

6. Payment



A yellow rounded rectangular form for payment. At the top right is a pink 'Back' button. Below it are three text input fields: 'Card Number', 'Card Holder Name', and 'CVV'. Below these is a 'Cash' text input field. At the bottom center is a pink 'Enter' button. Three black arrows point towards the form: one from the top, one from the right, and one from the bottom.

At the Payment you Have two options to select from first one is to select Cash and the second option is to select Pay with card.

If you will pay by your Card please make sure to enter your card information correctly.

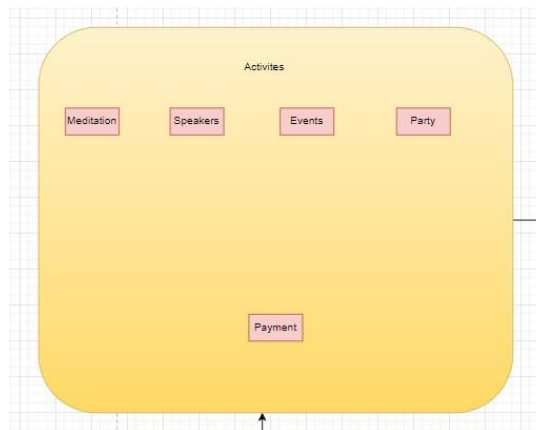
7. Restaurant

Hotel has a restaurant that offers various food and beverage options.

You can choose from our menu Breakfast, Lunch, Dinner, Snacks and Drinks. We have a variety of Drinks as Soft Drinks, Hard Drinks, Cold Drink and Hot Drinks.

Click Back to go to The Home Page.

8. Activities



The hotel offers various activities and events for its guests.

By clicking on the Activities Icon at Our home page, you will directly go to The Activities page which include Meditation(meditation and relaxation sessions) , Speakers , Events (The hotel hosts various events, such as concerts or performances.) and Party and by clicking on any of them you have then click on payment to go to the payment page.

9. Logout

By clicking on the Logout Icon at Our home page, you will Logout and directly go to Login page again

Frequently Asked Questions

1. What time can I check-in and check-out?

Standard check-in time is at 2 PM and check-out at 12 PM.

2. Can I request housekeeping?

Housekeeping services are available. Shoe shine service is offered to guests upon request.

3. Do you have wifi?

Stay connected during your stay with 40MB bandwidth internet service provided throughout our guestrooms and public areas. Please log-in with your username and password provided at check-in. User name is your room no. Password is *followed by room no. eg: USER NAME: 2803 PASSWORD: *2803.

4. Can I request for transfers?

A great way to enjoy your trip while on vacation is to drive around the metro in style. For transfer requirements, please press service key “Transfers ” for assistance.

5. Can I cancel my booking?

Yes, but keep in mind that cancellations made less than three (3) days prior to arrival are subject to 100% charge.

6. What payment methods are accepted?

We accept cash and all major credit cards as payment.

7. Do you accept credit cards?

We honor all major credit cards (Visa, MasterCard, Amex, JCB, Diners, China, UnionPay). Please present your credit card upon check-in.

8. Can I book on someone else’s behalf?

Yes, you can book on behalf of someone else. For guests using another person’s credit card, a credit card authorization (CCA) form will be required.

9. Do kids stay free?

Yes, kids 12 years old and below are allowed to stay free-of-charge. The number of kids may vary depending on the room type.

10. Can I change my room type upon check-in?

Yes, but such requests are subject to room availability, applicable charges, and rate difference at the time of check-in.