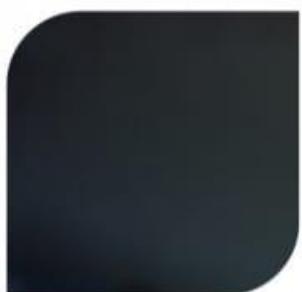
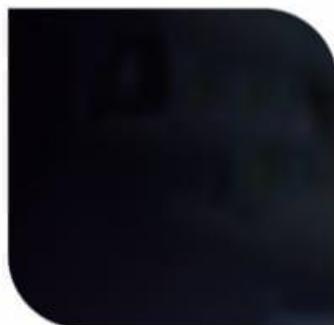




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PROJECT REPORT

TITLE : HOTEL RESERVATION SYSTEM

Submitted By : B. Geethika
Submitted to : Global Quest Technologies
Date : 15 February 2026

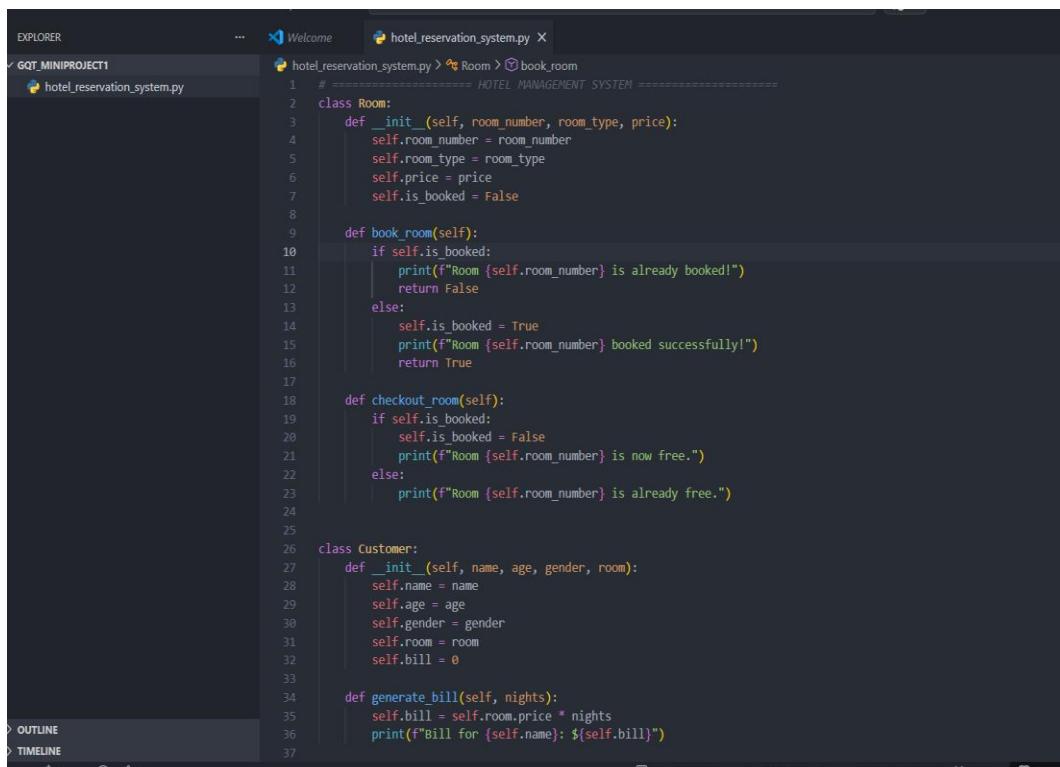
ABSTRACT

The Hotel Reservation System is a console-based Python application designed to automate and simplify hotel management tasks such as room management, guest management, and reservation scheduling. The system is built using Object-Oriented Programming (OOP) concepts, including classes, objects, inheritance, encapsulation, polymorphism, and composition, to ensure modularity, scalability, and maintainability.

The system allows hotel staff to add and manage rooms with details like room type, price, and availability, register guests with personal information securely stored, and schedule reservations while preventing double-booking. Guests' and rooms' information can be easily accessed and displayed using well-structured menus.

This system provides an efficient, interactive, and user-friendly console interface to manage multiple guests and rooms simultaneously, demonstrating real-world applications of OOP principles in software development. It serves as a foundation for more advanced hotel management systems with features like billing, online booking, and reports.

Source Code:-



A screenshot of a code editor showing the source code for a Hotel Management System. The code is written in Python and defines two classes: Room and Customer. The Room class has an __init__ method that initializes room number, room type, and price, and a book_room method that checks if the room is booked. The Customer class has an __init__ method that initializes name, age, gender, and room, and a generate_bill method that calculates the bill based on room price and nights. The code is color-coded for syntax highlighting.

```
EXPLORER ... Welcome hotel_reservation_system.py X
GQT_MINIPROJECT1
hotel_reservation_system.py
1 # ===== HOTEL MANAGEMENT SYSTEM =====
2 class Room:
3     def __init__(self, room_number, room_type, price):
4         self.room_number = room_number
5         self.room_type = room_type
6         self.price = price
7         self.is_booked = False
8
9     def book_room(self):
10        if self.is_booked:
11            print(f"Room {self.room_number} is already booked!")
12            return False
13        else:
14            self.is_booked = True
15            print(f"Room {self.room_number} booked successfully!")
16            return True
17
18     def checkout_room(self):
19        if self.is_booked:
20            self.is_booked = False
21            print(f"Room {self.room_number} is now free.")
22        else:
23            print(f"Room {self.room_number} is already free.")
24
25 class Customer:
26     def __init__(self, name, age, gender, room):
27         self.name = name
28         self.age = age
29         self.gender = gender
30         self.room = room
31         self.bill = 0
32
33     def generate_bill(self, nights):
34         self.bill = self.room.price * nights
35         print(f"Bill for {self.name}: ${self.bill}")
36
37
```

EXPLORER ... Welcome hotel_reservation_system.py

GQT_MINIPROJECT1

hotel_reservation_system.py

```
38
39     class Hotel:
40         def __init__(self, name):
41             self.name = name
42             self.rooms = []
43             self.customers = []
44
45         def add_room(self, room):
46             self.rooms.append(room)
47
48         def show_available_rooms(self):
49             print("\nAvailable Rooms:")
50             for room in self.rooms:
51                 if not room.is_booked:
52                     print(f"Room {room.room_number} - {room.room_type} - ${room.price}")
53             print()
54
55         def book_room_for_customer(self, customer, room_number, nights):
56             for room in self.rooms:
57                 if room.room_number == room_number:
58                     if room.book_room():
59                         customer.room = room
60                         customer.generate_bill(nights)
61                         self.customers.append(customer)
62                     return
63             print(f"Room {room_number} not found!")
64
65         def checkout_customer(self, customer_name):
66             for customer in self.customers:
67                 if customer.name.lower() == customer_name.lower():
68                     customer.room.checkout_room()
69                     print(f"{customer.name} has checked out. Total bill: ${customer.bill}")
70                     self.customers.remove(customer)
71                     return
72             print(f"No customer found with name {customer_name}.")
73
74         def show_all_customers(self):
```

OUTLINE

TIMELINE

EXPLORER ... Welcome hotel_reservation_system.py

GQT_MINIPROJECT1

hotel_reservation_system.py

```
39     class Hotel:
74         def show_all_customers(self):
75             if not self.customers:
76                 print("No customers currently.")
77                 return
78             print("\nCurrent Customers:")
79             for cust in self.customers:
80                 print(f"\tName: {cust.name}, Age: {cust.age}, Gender: {cust.gender}, Room: {cust.room.room_number}, Bill: ${cust.bill}")
81             print()
82
83
84 # ====== MAIN PROGRAM ======
85 def main():
86     hotel = Hotel("Grand Python Hotel")
87
88     # Add rooms to hotel
89     hotel.add_room(Room(101, "single", 50))
90     hotel.add_room(Room(102, "double", 80))
91     hotel.add_room(Room(103, "suite", 150))
92     hotel.add_room(Room(104, "single", 50))
93     hotel.add_room(Room(105, "double", 80))
94
95     while True:
96         print("\n==== HOTEL MANAGEMENT SYSTEM ===")
97         print("1. Show available rooms")
98         print("2. Book a room")
99         print("3. Checkout customer")
100        print("4. Show all customers")
101        print("5. Exit")
102
103        choice = input("Enter your choice: ")
104
105        if choice == "1":
106            hotel.show_available_rooms()
107
108        elif choice == "2":
109            name = input("Enter customer name: ")
```

OUTLINE

TIMELINE

The screenshot shows a code editor interface with a dark theme. The top menu bar includes options like File, Edit, Selection, View, Go, Run, Terminal, Help, and a file navigation section. The title bar displays "GQT_MiniProject1". The left sidebar shows a project structure under "GQT_MINIPROJECT1" with files "hotel_reservation_system.py" and "Welcome". The main editor area contains the following Python code:

```
def main():
    hotel.show_available_rooms()

    elif choice == "2":
        name = input("Enter customer name: ")
        age = int(input("Enter customer age: "))
        gender = input("Enter customer gender (M/F): ")
        hotel.show_available_rooms()
        room_number = int(input("Enter room number to book: "))
        nights = int(input("Enter number of nights: "))
        customer = Customer(name, age, gender, None)
        hotel.book_room_for_customer(customer, room_number, nights)

    elif choice == "3":
        customer_name = input("Enter customer name to checkout: ")
        hotel.checkout_customer(customer_name)

    elif choice == "4":
        hotel.show_all_customers()

    elif choice == "5":
        print("Thank you for using Hotel Management System!")
        break

    else:
        print("Invalid choice. Try again.")

if __name__ == "__main__":
    main()
```

Output:-

```
PS C:\Users\reeth\OneDrive\Desktop\GQT_MiniProject1> & 'c:\Users\reeth\AppData\Local\Programs\Python\Python313\python.exe' 'c:\code\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '53060' '--' 'c:\Users\reeth\OneDrive\Desktop\hotel_reservation_system.py'

enable it, run 'import module PSReadLine'.

PS C:\Users\reeth\OneDrive\Desktop\GQT_MiniProject1> & 'c:\Users\reeth\AppData\Local\Programs\Python\Python313\python.exe' 'c:\code\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '53060' '--' 'c:\Users\reeth\OneDrive\Desktop\hotel_reservation_system.py'

● === HOTEL MANAGEMENT SYSTEM ===
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 1

Available Rooms:
Room 101 - single - $50
Room 102 - Double - $80
Room 103 - suite - $150
Room 104 - single - $50
Room 105 - Double - $80

PS C:\Users\reeth\OneDrive\Desktop\GQT_MiniProject1> & 'c:\Users\reeth\AppData\Local\Programs\Python\Python313\python.exe' 'c:\code\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '53060' '--' 'c:\Users\reeth\OneDrive\Desktop\hotel_reservation_system.py'

● === HOTEL MANAGEMENT SYSTEM ===
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 2
Enter customer name: Geethika
Enter customer age: 21
Enter customer gender (M/F): F

Available Rooms:
Room 101 - single - $50
Room 102 - Double - $80
Room 103 - Suite - $150
Room 104 - single - $50
Room 105 - Double - $80
```

GQT_MINIPROJECT1

hotel_reservation_system.py

```
Enter room number to book: 101
Enter number of nights: 3
Room 101 booked successfully!
Bill for Geethika: $150

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 2
Enter customer name: Reethika
Enter customer age: 22
Enter customer gender (M/F): F

Available Rooms:
Room 102 - Double - $80
Room 103 - Suite - $150
Room 104 - Single - $50
Room 105 - Double - $80

Enter room number to book: 102
Enter number of nights: 5
Room 102 booked successfully!
Bill for Reethika: $400

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 2
Enter customer name: Krishna
Enter customer age: 28
Enter customer gender (M/F): M

Available Rooms:
Room 103 - Suite - $150
```

OUTLINE

TIMELINE

GQT_MINIPROJECT1

hotel_reservation_system.py

```
Available Rooms:
Room 103 - Suite - $150
Room 104 - Single - $50
Room 105 - Double - $80

Enter room number to book: 103
Enter number of nights: 5
Room 103 booked successfully!
Bill for Krishna: $750

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 4

Current Customers:
Name: Geethika, Age: 21, Gender: F, Room: 101, Bill: $150
Name: Reethika, Age: 22, Gender: F, Room: 102, Bill: $400
Name: Krishna, Age: 28, Gender: M, Room: 103, Bill: $750

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 3
Enter customer name to checkout: Geethika
Room 101 is now free.
Geethika has checked out. Total bill: $150

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
```

OUTLINE

TIMELINE

main ⌂ 0:11 ⑧ 0 ▲ 0 ⌂ Start JSON Server | In 10 Col 27 Spaces:4 | UTF-8 | CRLF | Python | ⌂ Signed Out

EXPLORER ... PROBLEMS OUTPUT DEBUG CONSOLE TI :: Launch 2

GQT_MINIPROJECT1 hotel_reservation_system.py

3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 4

Current Customers:
Name: Reethika, Age: 22, Gender: F, Room: 102, Bill: \$400
Name: Krishna, Age: 28, Gender: M, Room: 103, Bill: \$750

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 3
Enter customer name to checkout: Reethika
Room 102 is now free.
Reethika has checked out. Total bill: \$400

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 3
Enter customer name to checkout: Krishna
Room 103 is now free.
Krishna has checked out. Total bill: \$750

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 4
No customers currently.

OUTLINE
TIMELINE

EXPLORER ... PROBLEMS OUTPUT DEBUG CONSOLE TI :: Launch 2

GQT_MINIPROJECT1 hotel_reservation_system.py

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 3
Enter customer name to checkout: Reethika
Room 102 is now free.
Reethika has checked out. Total bill: \$400

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 3
Enter customer name to checkout: Krishna
Room 103 is now free.
Krishna has checked out. Total bill: \$750

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 4
No customers currently.

==== HOTEL MANAGEMENT SYSTEM ====
1. Show available rooms
2. Book a room
3. Checkout customer
4. Show all customers
5. Exit
Enter your choice: 5
Thank you for using Hotel Management System!

PS C:\Users\reeth\OneDrive\Desktop\GQT_Miniproject1>

OUTLINE
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+91 9448 403 469 | 080-49720009
info@gqtech.in | www.gqtech.in