**TASK-BUS TICKET BOOKING SYSTEM**

# Creating classes of # Bus

# Road

# Booking

# main()

class Bus:

#for assinging the bus details

def \_\_init\_\_(self, bus\_number, capacity):

self.bus\_number = bus\_number

self.capacity = capacity

self.road = None

def assign\_road(self, road):

self.road = road

def \_\_str\_\_(self):

road\_info = f"Road: {self.road.road\_name}" if self.road else "No road assigned"

return f"Bus Number: {self.bus\_number}, Capacity: {self.capacity}, {road\_info}"

class Road:

# For assigning road details

def \_\_init\_\_(self, road\_name, stops):

self.road\_name = road\_name

self.stops = stops

def \_\_str\_\_(self):

return f"Road: {self.road\_name}, Stops: {', '.join(self.stops)}";

class Booking:

# For bboking details and about the bus and road and passenger and passengers seat

def \_\_init\_\_(self, booking\_id, bus,passenger\_name,seat\_num):

self.booking\_id=booking\_id;

self.bus=bus;

self.passenger\_name=passenger\_name;

self.seat\_num=seat\_num;

def \_\_str\_\_(self):

return f"Booking ID : {self.booking\_id}\n Bus : {self.bus}\n Passenger Name : {self.passenger\_name}\n Seat Number : {self.seat\_num}";

def main():

buses=[];

roads=[];

bookings=[];

booking\_id\_counter=1;

while True:

print("\n--------Bus Booking System-------")

print("1. Add Bus")

print("2. View Buses")

print("3. Add Road")

print("4. View Roads")

print("5. Assign Road to Bus")

print("6. Create Booking")

print("7. View Bookings")

print("8. Exit")

choice = input("\nEnter your choice: ");

if choice == '1':

bus\_number = input("Enter Bus Number: ")

capacity = int(input("Enter Bus Capacity: "))

buses.append(Bus(bus\_number, capacity))

print("Bus added successfully......")

elif choice == '2':

if not buses:

print("No buses found.")

else:

for bus in buses:

print(bus)

elif choice == '3':

road\_name = input("Enter Road Name: ")

stops = input("Enter Stops (comma separated): ").split(',')

roads.append(Road(road\_name.strip(), [stop.strip() for stop in stops]))

print("Road added successfully......")

elif choice == '4':

if not roads:

print("No routes found.")

else:

for road in roads:

print(road)

elif choice == '5':

bus\_number = input("Enter Bus Number: ")

road\_name = input("Enter Road Name: ")

bus = next((bus for bus in buses if bus.bus\_number == bus\_number), None)

road = next((road for road in roads if road.road\_name == road\_name), None)

if bus and road:

bus.assign\_road(road)

print("Road assigned to bus successfully.....")

else:

print("Bus or Road not found.")

elif choice == '6':

bus\_number = input("Enter Bus Number: ")

passenger\_name = input("Enter Passenger Name: ")

seat\_num = int(input("Enter Seat Number: "))

bus = next((bus for bus in buses if bus.bus\_number == bus\_number), None);

if bus and bus.road:

if seat\_num > bus.capacity:

print("Invalid seat number.")

elif any(booking.bus == bus and booking.seat\_num == seat\_num for booking in bookings):

print("Seat already booked.")

else:

bookings.append(Booking(booking\_id\_counter, bus, passenger\_name, seat\_num))

booking\_id\_counter += 1

print("Booking created successfully!")

else:

print("Bus not found or not assigned to a route.......sry")

elif choice == '7':

if not bookings:

print("No bookings found.")

else:

for booking in bookings:

print(booking)

elif choice == '8':

print("Thank You for visiting.....system")

break

else:

print("Invalid choice, please try again......")

if \_\_name\_\_ == "\_\_main\_\_":

main()