**Scenario 1**

#include<stdio.h>

#include<stdlib.h>

int n,totalseat=10;

struct bus{

int busNum,numofseats[20],age;

char root[100],name[100],departureTime[100];

unsigned long int phno;

}s;

void bussDetails(){

printf("Enter the bus number\n");

scanf("%d",&s.busNum);

printf("Enter the root\n");

scanf("%s",&s.root);

printf("Enter the departure time\n");

scanf("%s",s.departureTime);

printf("Enter the no of seats\n");

scanf("%d",&n);

for(int i=0;i<n;i++)

{

int seatno;

printf("Enter seat number %d: ", i + 1);

scanf("%d",&seatno);

if (s.numofseats[seatno ] == 1) {

printf("Seat %d is already taken.Please choose another seat.\n", seatno);

}

else{

s.numofseats[seatno]=1;

}

}

if (totalseat> 10) {

printf("Only 20 seats available. Setting to 20.\n");

totalseat= 10;

}

}

void passengerDetails(){

printf("Enter your name\n");

scanf("%s",s.name);

printf("Enter your age\n");

scanf("%d",&s.age);

printf("Enter your phno\n");

scanf("%lu",&s.phno);

}

void display(){

printf("buss details\nbusnum=%d\nroot=%s\ndeparture time=%s\n",s.busNum,s.root,s.departureTime);

printf("Seats: ");

for (int i = 0; i < totalseat; i++) {

printf("%d ", s.numofseats[i]);

}

printf("\npassenger deatils\nname=%s\nage=%d\nphno=%lu\n",s.name,s.age,s.phno);

}

void cancellation(){

int cancel;

printf("Enter the seat num to cancel\n");

scanf("%d",&cancel);

if (s.numofseats[cancel] == 0)

{printf("Seat %d is already vacant.\n", cancel); }

else{

s.numofseats[cancel]=0;

printf("Seat cancelled successfully\n");

}

}

void main(){

int choice;

while(1){

printf("\n\nEnter the choice\n1)buss details\n2)passenger details\n3)display\n4)seat cancellation\n5)to go out\n");

scanf("%d",&choice);

if(choice==1)

{ bussDetails();}

if(choice==2)

{passengerDetails();}

if(choice==3)

{display();}

if(choice==4)

{ cancellation();}

if(choice==5)

{ exit(0);}

}

}

**Scenario 3**

#include <stdio.h>

#include <string.h>

#define MAX\_TICKETS 100

typedef struct {

char name[20];

int age;

char contact[10];

char travelDate[9];

char busType[20];

float price;

} Ticket;

typedef struct {

char paymentMethod[20];

float amount;

char transactionID[15];

} Payment;

Ticket tickets[MAX\_TICKETS];

int ticketCount = 0;

float calculatePrice(const char \*busType) {

if (strcmp(busType, "Luxury") == 0)

return 150.0;

else if (strcmp(busType, "Semi-Luxury") == 0)

return 100.0;

else

return 50.0;

}

void bookTicket() {

if (ticketCount >= MAX\_TICKETS) {

printf("No more tickets available!\n");

return;

}

Ticket \*t = &tickets[ticketCount];

printf("Enter name, age, contact, travel date, and bus type (Luxury/Semi-Luxury/Regular): ");

scanf("%s %d %s %s %s", t->name, &t->age, t->contact, t->travelDate, t->busType);

t->price = calculatePrice(t->busType);

printf("Ticket booked! Price: $%.2f\n", t->price);

ticketCount++;

}

void processPayment() {

if (ticketCount == 0) {

printf("No tickets booked yet!\n");

return;

}

Payment p;

printf("Enter payment method, amount, and transaction ID: ");

scanf("%s %f %s", p.paymentMethod, &p.amount, p.transactionID);

printf("Payment successful!\nTransaction ID: %s\nAmount Paid: $%.2f\n", p.transactionID,

p.amount);

}

void cancelTicket() {

if (ticketCount == 0) {

printf("No tickets to cancel!\n");

return;

}

int ticketNumber;

printf("Enter ticket number to cancel (1 to %d): ", ticketCount);

scanf("%d", &ticketNumber);

if (ticketNumber < 1 || ticketNumber > ticketCount) {

printf("Invalid ticket number!\n");

return;

}

for (int i = ticketNumber - 1; i < ticketCount - 1; i++) {

tickets[i] = tickets[i + 1];

}

ticketCount--;

printf("Ticket %d canceled. Refund processed.\n", ticketNumber);

}

int main() {

int choice;

while (choice != 4) {

printf("\n1. Book Ticket\n2. Process Payment\n3. Cancel Ticket\n4. Exit\nChoice: ");

scanf("%d", &choice);

switch (choice) {

case 1: bookTicket(); break;

case 2: processPayment(); break;

case 3: cancelTicket(); break;

case 4: printf("Exiting...\n"); break;

default: printf("Invalid choice!\n");

}

}

return 0;

}