MINI PROJECT

Train Reservation System.

Project By:

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ABSTRACT :

This C program is to make a desired 'TRAIN RESERVATION SYSTEM'. In this mini-project, you can a passenger can reserve a ticket in a particular train by typing the requirement in the input. The source code would be simple, not complicated, and can be executed in an online GDB Compiler to get the desired output.
We use #include <stdio.h> and #include<stdlib.h> header files.

In the main function, we need to assign code based on the following,

1. The Passenger can enter the number of passengers travelling.
2. The Passenger can enter their names.
3. Passengers have to enter their gender.
4. Input the age.
5. If you enter the age then it will ask for the source place and also the destination place.
6. After inputting the destination place, it will ask for the name of the train to select with the specific timings.

```
The Following Trains Are Available.....
1. Rajdhani Express.........10:00 a.m.........Sealdah Station
2. Satabdi Express..........05:00 p.m.........Howrah Station
3. Humsafar Express..........11:00 p.m.........Kolkata Chitpur Station
4. Garib-Rath Express.........05:00 p.m.........Sealdah Station
5. Duronto Express............07:00 a.m.........SantraganchiStation
```

7. The choice of class will be given next – whether sleeper class or AC class. Go ahead and select one.

8. The total Bill Amount will be displayed also with a Matrix of seat from which you have to input the seat numbers to reserve it.

Following is the basic abstract :-

```
Source Place:
Destination Place: LUCKNOW
The Boarding Station: Sealdah Station
Train Is: Rajdhani Express
Allocated Class: 3A Class
Boarding Time: 10:0
Total Bill Amount: 0
Allocated Seats Are:
40              45
```

PROGRAM :

```
#include <conio.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

// Defining Structure
typedef struct mynode {
    char name[20];
    char gen[6];
    int age;
    struct mynode* link;
} Node;

Node* start = NULL;

void details(int);
int seat(int);
int cal(int, int, int);
void bill(int, int);
void add_node(char*, char*, int);
// Global variables
char source[20], des[20], train[40];
char station[40], cla[40];
int time1, time2, a[55];

// Driver Code
void main()
{
    int i, j, a1, a2, b, c;int x = 0, d, e, r;
    char o;
    printf("Enter Number Of Passengers: ");
    fflush(stdin);
    scanf("%d", &j);
```

```
// Calling details() function with
// argument number of passenger
details(j);
printf("Enter The Source Place: ");
fflush(stdin);
gets(source);
printf("Enter The Destination Place: ");
gets(des);
printf("\t\tThe Following Trains "
       "Are Available.....\n");
printf("\t\t1. Rajdhani Express.."
       "......10:00 "
       "a.m........Sealdah Station\n");
printf("\t\t2. Satabdi Express..."
       "......05:00 "
       "p.m........Howrah Station\n");
printf("\t\t3. Humsafar Express..."
       "......11:00 "
       "p.m........Kolkata Chitpur"
       " Station\n");
printf("\t\t4. Garib-Rath Express"
       "........05:00 "
       "p.m........Sealdah Station\n");
printf("\t\t5. Duronto Express..."
       "........07:00 "
       "a.m........Santraganchi"
       "Station\n");
scanf("%d", &i);
do {
    switch (i) {
    case 1: {
        strcpy(train,
               "Rajdhani Express");
        strcpy(station,
               "Sealdah Station");
        time1 = 10;
        time2 = 00;
        a1 = 2099;
        a2 = 1560;
```

```
        // Calling cal() function
        // with the three argument
        // and return value
        int d = cal(a1, a2, j);
        printf("Total Bill Amount:"
               " %d\n",
               d);
    }; break;
    case 2: {
        strcpy(train,
               "Satabdi Express");
        strcpy(station,
               "Howrah Station");
        time1 = 05;
        time2 = 00;
        a1 = 1801;
        a2 = 981;

        // Calling cal() function with
        // three argument & return value
        d = cal(a1, a2, j);
        printf("Total Bill Amount:"
               "%d\n",
               d);
    }; break;
    case 3: {
        strcpy(train,
               "Humsafar Express");
        strcpy(station,
               "Kolkata Chitpur Express");
        time1 = 11;
        time2 = 00;
        a1 = 2199;
        a2 = 1780;

        // Calling cal() function with
        // three argument & return value
        d = cal(a1, a2, j);
```

```
            printf("Total Bill Amount: %d\n", d);
        }; break;
        case 4: {
            strcpy(train, "Garib-Rath Express");
            strcpy(station, "Sealdah Station");
            time1 = 05;
            time2 = 00;
            a1 = 1759;
            a2 = 1200;

            // Calling cal() function with
            // three argument & return value
            d = cal(a1, a2, j);
            printf("Total Bill Amount: %d\n", d);
        }; break;
        case 5: {
            strcpy(train, "Duronto Express");
            strcpy(station, "Santraganchi Station");
            time1 = 07;
            time2 = 00;
            a1 = 2205;
            a2 = 1905;

            // Calling cal() function with
            // three argument & return value
            d = cal(a1, a2, j);
            printf("Total Bill Amount: %d\n", d);
        }; break;
        default:
            printf("Enter Correct choice.....\n");
            int x = 1;
            break;
        }
    } while (x);
    printf("Now Book Your Seats......\n");

    // Calling seat() function with number
    // of passenger
    seat(j);
```

```
    // Calling bill() function with
    // the number of passenger
    // and amount argument
    bill(d, j);
}

// Function for calculation of amount
int cal(int y1, int y2, int h)
{
    int b, c, i, t, r, n;
    printf("\t\tEnter Your Choice......\n");
    printf("\t\t1. Slepper Class....\n");
    printf("\t\t2. A.C Class.......\n");
    scanf("%d", &i);
    switch (i) {
    case 1: {
        strcpy(cla, "Slepper Class");
        b = y2 * h;
        c = b + (b * 0.18);
    } break;
    case 2: {
        printf("\t\tEnter Your Choice....\n");
        printf("\t\t1. 3A Class....\n");
        printf("\t\t2. 2A Class....\n");
        printf("\t\t3. 1st Class A.C.....\n");
        scanf("%d", &n);
        switch (n) {
        case 1: {
            strcpy(cla, "3A Class");
            b = y1 * h;
            c = b + (b * 0.18);
        } break;
        case 2: {
            strcpy(cla, "2A Class");
            b = (y1 + 1000) * h;
            c = b + (b * 0.18);
        } break;
        case 3: {
```

```
            strcpy(cla, "1st Class A.C.");
            b = (y1 + 5000) * h;
            c = b + (b * 0.18);
        } break;
        default: {
            printf("\t\tEnter Right Choice......\n");
        }
        }
    } break;
    default: {
        printf("\t\tEnter Right Choice......\n");
    }
    }
    return c;
}

// Function for taking details
// of passengers
void details(int k)
{
    int i, a;
    char val[20], gen[6];
    for (i = 1; i <= k; i++) {
        printf("Enter The %dth Passenger Name: ", i);
        fflush(stdin);
        gets(val);
        printf("Enter The %dth Passenger Gender: ",
i);
        fflush(stdin);
        gets(gen);
        printf("Enter The %dth Passenger Age: ", i);
        fflush(stdin);
        scanf("%d", &a);

        // Calling add_node() function
        add_node(val, gen, a);
    }
}
```

```
// Function to add details in node
// for each passengers
void add_node(char lol[20], char der[6], int b)
{
    Node *newptr = NULL, *ptr;
    newptr = (Node*)malloc(sizeof(Node));
    strcpy(newptr->name, lol);
    strcpy(newptr->gen, der);
    newptr->age = b;
    newptr->link = NULL;
    if (start == NULL)
        start = newptr;
    else {
        ptr = start;
        while (ptr->link != NULL)
            ptr = ptr->link;
        ptr->link = newptr;
    }
}

// Function for choosing seats
int seat(int p)
{
    int i;
    printf("\t           -:SEAT MATRIX:-        \n");
    printf("\t(U)    (M)        (L)    (L)    "
           "    (U)\n\n");
    printf("\t01    02        03\t04        "
           "05\n\n");
    printf("\t06    07        08\t09        "
           "10\n");
    printf("\t11    12        13\t14        "
           "15\n\n");
    printf("\t16    17        18\t19        "
           "20\n");
    printf("\t21    22        23\t24        "
           "25\n\n");
    printf("\t26    27        28\t29        "
           "30\n");
```

```
    printf("\t31    32        33\t34        "
           "35\n\n");
    printf("\t36    37        38\t39        "
           "40\n");
    printf("\t41    42        43\t44        "
           "45\n\n");
    printf("\t46    47        48\t49        "
           "50\n");
    printf("\t51    52        53\t54        "
           "55\n\n");
    printf("\t56    57        58\t59        "
           "60\n");
    printf("\tEnter Seat Numbers: \n");
    for (i = 0; i < p; i++)
        scanf("%d", &a[i]);
}

// Function for printing receipt
void bill(int y, int j)
{
    int i;
    Node* ptr = start;
    for (i = 1; i <= j; i++) {
        printf("\t\t\%dst Passenger Name: ", i);
        puts(ptr->name);
        printf("\t\t%dst Passenger Gender: ", i);
        puts(ptr->gen);
        printf("\t\t%dst Passenger Age: %d\n\n", i,
               ptr->age);
        ptr = ptr->link;
    }
    printf("\t\tSource Place: ");
    puts(source);
    printf("\t\tDestination Place: ");
    puts(des);
    printf("\t\tThe Boarding Station: ");
    puts(station);
    printf("\t\tTrain Is: ");
    puts(train);
```

```
    printf("\t\tAllocated Class: ");
    puts(cla);
    printf("\t\tBoarding Time: %d:%d\n", time1,
time2);
    printf("\t\tTotal Bill Amount: %d\n", y);
    printf("\t\tAllocated Seats Are: \n");
    for (i = 0; i < j; i++) {
        printf("\t\t%d ", a[i]);
    }
    printf("\n");
    printf("\t\t\t\tThank You......\n");
}
```

OUTPUT :

```
Enter Number Of Passengers: 2
Enter The 1th Passenger Name: Enter The 1th Passenger Gender: MALE
Enter The 1th Passenger Age: 19
Enter The 2th Passenger Name: Enter The 2th Passenger Gender: FEMALE
Enter The 2th Passenger Age: 19
Enter The Source Place: Enter The Destination Place: LUCKNOW
               The Following Trains Are Available.....
               1. Rajdhani Express.........10:00 a.m.........Sealdah Station
               2. Satabdi Express..........05:00 p.m.........Howrah Station
               3. Humsafar Express..........11:00 p.m.........Kolkata Chitpur Station
               4. Garib-Rath Express.........05:00 p.m.........Sealdah Station
               5. Duronto Express............07:00 a.m.........SantraganchiStation
1
               Enter Your Choice......
               1. Slepper Class....
               2. A.C Class.......
2
               Enter Your Choice....
               1. 3A Class....
               2. 2A Class....
               3. 1st Class A.C.....
1
Total Bill Amount: 4953
Now Book Your Seats......
                   -:SEAT MATRIX:-
       (U)     (M)         (L)     (L)         (U)

       01      02          03      04          05

       06      07          08      09          10
       11      12          13      14          15

       16      17          18      19          20
       21      22          23      24          25

       26      27          28      29          30
       31      32          33      34          35

       36      37          38      39          40
       41      42          43      44          45
```

```
        46    47        48      49        50
        51    52        53      54        55

        56    57        58      59        60
        Enter Seat Numbers:
40
45
                1st Passenger Name:
                1st Passenger Gender: MALE
                1st Passenger Age: 19

                2st Passenger Name:
                2st Passenger Gender: FEMALE
                2st Passenger Age: 19

                Source Place:
                Destination Place: LUCKNOW
                The Boarding Station: Sealdah Station
                Train Is: Rajdhani Express
                Allocated Class: 3A Class
                Boarding Time: 10:0
                Total Bill Amount: 0
                Allocated Seats Are:
                40              45
                                Thank You......
```