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

typedef struct TICKET{
    int pnr;
    char trainname [50];
    char date[12];
    int quota;
    char paname[50];
    int age;
    float seat;
    char coach[2];
    float fare;
    struct TICKET*next;
}ITEM;

ITEM* head=NULL;

ITEM *insertItem(ITEM*ticket){
    ticket->next = head;
    head = ticket;
    return ticket;
}

ITEM *BookingDataset(FILE *fp){
    int t=15;
    while(t--){
        char trainname [50];char paname[50];
        char date[12]; char coach[2];

        ITEM* new_node=(ITEM*) malloc(sizeof(ITEM));
        fscanf(fp,"%d , %s , %s , %d , %s , %d , %f , %s,
%f",&new_node->pnr,trainname,date,&new_node->quota,paname,&new_node-
>age,&new_node->seat,coach,&new_node->fare);
        int i = 0;
        while (trainname[i] != ',')
        {
            i++;
            trainname[i] = '\\0';
            strcpy(new_node->trainname, trainname);
        }
        i = 0;
        while (paname[i] != ',')
        {
            i++;
            paname[i] = '\\0';
            strcpy(new_node->paname, paname);
        }
        i=0;
        while (date[i] != ',')
        {
            i++;
            date[i] = '\\0';
            strcpy(new_node->date, date);
        }
    }
}

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    }
    i=0;
    while (coach[i] != ',')
    {
        i++;
        coach[i] = '\\0';
        strcpy(new_node->coach, coach);
    }

    insertItem(new_node);
}
return head;
}

void printBookings(ITEM* ticket){
    while (ticket != NULL)
    {
        printf("Passanger Name: %s\\tPNR: %d\\tFare: %f\\n",ticket-
>paname,ticket->pnr,ticket->fare);
        ticket=ticket->next;
    }
}

void SearchBookingByTrainType(ITEM *ticket, char *train){
    while (ticket != NULL)
    {
        if(strcmp(ticket->trainname,train)==0){
            printf("PNR: %d Train Name: %s Date: %s Quota: %d Passanger
Name: %s Age: %d Seat: %f Coach: %s Fare: %f\\n",ticket->pnr,ticket-
>trainname,ticket->date,ticket->quota,ticket->paname,ticket-
>age,ticket->seat,ticket->coach,ticket->fare);
        }
        ticket=ticket->next;
    }
}

void UpdateFares(ITEM *ticket){
    float sum=0;
    if((ticket->age)<18)
    {
        ticket->fare=(3*ticket->fare)/4;
    }
    else if((ticket->age)>59)
    {
        ticket->fare=(ticket->fare)/2;
    }
    else
    {
        ticket->fare=ticket->fare;
    }
    printf("The updated fare after Concession is: %f\\n",ticket-
>fare);
}

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        while(ticket!=NULL)
        {
            sum+=ticket->fare;
            ticket=ticket->next;
        }
        printf("The Sum of the Fare of all the ticket is equal to
%f:",sum);
    }

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int main(){
    FILE *fp;
    float off;
    char train[30];
    if(fp==NULL)
    {
        printf("The File Cannot be open\n");
    }
    else
    {
        fp=fopen("ticketbooking.txt","r");
        printf("Generating Dataset:\n");
        BookingDataset(fp);
    }

    printf("Printing the details of the Passengers: \n");
    printBookings(head);
    printf("\nEnter Train Name to search(by train name): ");
    scanf("%s",train);
    SearchBookingByTrainType(head,train);
    printf("\nThe Updated Fare After Concession is:\n ");
    UpdateFares(head);

    fclose(fp);

    return 0;
}

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