***MANOJ M MALLYA , REG NO : 200905130***

***Section : C2***

***Roll no : 23***

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**DSAL ENDSEM EXAM**

CODE :

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

typedef struct Epassenger{

char name[100];

long int phnum;

char food;

}Epassenger;

typedef struct Cpassenger{

char name[100];

long int phnum;

}Cpassenger;

typedef struct CCnode\* ccptr;

typedef struct ECnode\* ecptr;

typedef struct CCnode{

int vacant;

int coachnum;

Cpassenger p;

ccptr nextc;

ecptr nexte;

}CCnode;

typedef struct ECnode{

int vacant;

int coachnum;

Epassenger E;

ecptr nexte;

ccptr nextc;

}ECnode;

typedef struct engine\* headptr;

typedef struct header{

char myname[100];

long int reg\_no;

int cc;

int ec;

ecptr nexte;

ccptr nextc;

}header;

void insertC(ccptr cp,headptr eng){

ccptr temp;

temp = (ccptr)malloc(sizeof(struct CCnode));

printf("Enter name\n");

char name[100];

scanf("%s",name);

printf("Enter mobile number\n");

long int phnum;

scanf("%ld",&phnum);

strcpy((temp->p).name , name);

(temp->p).phnum = phnum;

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

int cnum;

scanf("%d",&cnum);

temp->coachnum = cnum;

temp->nextc=NULL;

temp->nexte=NULL;

if(eng->nextc == NULL){

eng->nextc = temp;

}

else{

ccptr last;

last = eng;

while(last->ccptr != NULL){

last = last->nextc;

}

last->nextc = temp

}

temp->vacant--;

}

void insertE(ccptr cp3){

ecptr temp;

temp = (ecptr)malloc(sizeof(struct ECnode));

printf("Enter name\n");

char name[100];

scanf("%s",name);

printf("Enter mobile number\n");

long int phnum;

scanf("%ld",&phnum);

char food;

printf("Enter V for vegetarian food choice and N for non-vegetarian food choice\n");

scanf("%c",&food);

strcpy((temp->p).name , name);

(temp->p).phnum = phnum;

(temp->p).food = food;

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

int cnum;

scanf("%d",&cnum);

temp->coachnum = cnum;

temp->nextc=NULL;

temp->nexte=NULL;

if(cp3->nexte == NULL){

cp3->nexte = temp;

}

else{

ecptr last;

last = cp3;

while(last->nexte != NULL){

last = last->nexte;

}

last->nexte = temp;

}

}

void display(headptr eng){

ccptr temp1;

ecptr temp2;

temp1 = eng->nextc;

while(temp1){

printf("Coach number is %d\n",temp1->coachnum);

printf("Passenger name is %s\n",(temp1->p).name);

printf("Passenger mobile number is %ld\n",(temp1->p).phnum);

temp1 = temp1->nextc;

}

while(temp2){

printf("Coach number is %d\n",temp2->coachnum);

printf("Passenger name is %s\n",(temp2->p).name);

printf("Passenger mobile number is %ld\n",(temp2->p).phnum);

printf("Passenger food choice is %c\n",(temp2->p).food);

temp2 = temp2->nextc;

}

}

void departureCC(header engine){

if(vacant==0)

free(cc);

ccptr temp;

int count=0;

if(engine->ccptr)

temp=engine->ccptr;

ccptr t=temp;

else {

printf("No departure possible");

return;

}

count++;

while(temp->ccptr){

temp=engine->ccptr;

count++;

}

if(temp->vacant==1){

free(temp);

count--;

while(count--)

t=t->ccptr;

t->ccptr=NULL;

}

else temp->vacant++;

}

int main(){

headptr eng;

eng->myname = "Manoj M Mallya";

eng->reg\_no = 200905130;

eng->cc = 30;

eng->ec = 10;

ccptr cptr1;

ccptr cptr2;

ccptr cptr3;

ecptr eptr1;

ecptr eptr2;

eng->nextc = cptr1;

cptr1->nextc=cptr2;

cptr2->nextc=cptr3;

cptr3->nexte = eptr1;

eptr1->nexte=eptr2;

int choice;

char coach\_type;

while(1){

printf("Enter your choice: \n1.Booking \n2.Departure \n3.Charting\n4.Exit\n");

scanf("%d",&choice);

switch(choice){

case 1:

printf("Choose coach type, enter E for EC coach and C for CC coach\n");

scanf("%c",&coach\_type);

if(coach\_type == 'C'){

insertR(cptr1);

}

else{

}

case 2: printf("Enter your choice\n1.CC\n2.EC");

scanf("%d",&choice);

if()

}

}

}

OUTPUT :