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***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 CNode{  
    int vacant;  
    int coachnum;  
    Cpassenger p;  
    ccptr nextc;  
    ecptr nexte;  
}CNode;
```

```
typedef struct ENode{  
    int vacant;  
    int coachnum;  
    Epassenger E;  
    ecptr nexte;  
    ccptr nextc;  
}ENode;
```

```
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 ENode));
    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 :