#include <stdio.h>

#include <stdlib.h>

#include <string.h>

typedef struct cars

{

int lplate;

int move;

struct cars\* link;

}car\_t;

typedef struct list{

car\_t \*top;

int n;

}list\_t;

void init(list\_t \*p)

{

p->top=NULL;

p->n=8;

}

int count(list\_t \*p)

{

int c=0;

car\_t \*q=p->top;

while(q!=NULL)

{

c++;

q=q->link;

}

return c;

}

car\_t \* createnode(int ele)

{

car\_t \*temp=(car\_t\*)malloc(sizeof(car\_t));

temp->lplate=ele;

temp->move=0;

temp->link=NULL;

}

void arrived(list\_t \*p,int ele)

{

if(count(p)>=p->n)

{

printf("Garage Full");

}

else{

car\_t \*temp=createnode(ele);

temp->link=p->top;

p->top=temp;

printf("car no %d is parked\n",p->top->lplate);

}

}

void display(car\_t \*p)

{

printf("Car licence plate no:%d",p->lplate);

printf("No of times car moved:%d",p->move);

}

void depart(list\_t \*p,int l)

{

car\_t \*pres=p->top;

car\_t \*prev=NULL;

if(count(p)==0)

{

printf("%s\n","Khali garage");

}

else

{

while(pres!=NULL)

{

if(pres->lplate==l)

{

if(pres==p->top)

{

p->top=pres->link;

pres->link=NULL;

}

else if(pres->link==NULL)

prev->link=NULL;

else

{

prev->link=pres->link;

pres->link=NULL;

}

printf("Details of the car departed:");

display(pres);

free(pres);

break;

}

else

{

pres->move=pres->move+1;

prev=pres;

pres=pres->link;

}

}

}

}

void displayg(list\_t \*p) {

if(p->top==NULL)

printf("Empty list\n");

else

{

car\_t \*q=p->top;

while(q!=NULL)

{

printf("%d",q->lplate);

q=q->link;

}

}

}

int main()

{

list\_t p;

init(&p);

int choice,l;

do{

printf("Enter your choice\n 1. Arravil\n2.Depature\n3.Display Garage\n4.Exit");

scanf("%d",&choice);

switch(choice)

{

case 1:

printf("Enter liscence plate number:\n");

scanf("%d\n",&l );

arrived(&p,l);

break;

case 2:

printf("Enter liscence plate number:\n");

scanf("%d\n",&l );

depart(&p,l);

break;

case 3:

displayg(&p);

break;

}

}while(choice!=4);

return 0;

}





