#include <stdio.h>

#include <stdlib.h>

#include <string.h>

#define MAX 50

static appno=13000;

typedef struct Date

{

int d,m,year;

}Date;

typedef struct Pass

{

Date d;

int valid;

}Pass;

typedef struct Applicant

{

int appno;

char fname[15];

char mname[15];

char lname[15];

int age;

char gender[10];

char address[20];

Pass p;

}Applicant;

typedef struct Queue

{

int f,r;

Applicant \*a[MAX];

}Queue;

void init (Queue \*q)

{

q->f=q->r=-1;

}

void getDetails(Applicant \*a1)

{

int g1;

printf("Enter the details of the applicant:\n");

printf("Enter full name:(FIRST NAME MIDDLE NAME SURNAME)");

scanf("%s %s %s",a1->fname,a1->mname,a1->lname);

printf("Enter age:");

scanf("%d",&(a1->age));

printf("Enter nearest station:");

scanf("%s",a1->address);

printf("Enter gender(1 or 2):1.MALE\t2.FEMALE");

scanf("%d",&g1);

while (g1!=1&&g1!=2)

{

printf("Enter valid option.\n");

scanf("%d",&g1);

}

if (g1==1)

strcpy(a1->gender,"MALE");

else

strcpy(a1->gender,"FEMALE");

do

{

printf("Enter DATE of beginning for the pass:(dd/mm/yyyy)");

scanf("%d/%d/%d",&a1->p.d.d,&a1->p.d.m,&a1->p.d.year);

}while(a1->p.d.m>12||a1->p.d.d>31);

printf("Enter validity:(No. of months)");

scanf("%d",&a1->p.valid);

}

int addApplicant(Queue \*q)

{

if (q->f==-1&&q->r==9)

return -1;

else if (q->f==-1)

q->f=q->r=0;

else

q->r++;

Applicant \*new =(Applicant \*)(malloc(sizeof(Applicant)));

q->a[q->r]=new;

getDetails(q->a[q->r]);

return q->a[q->r]->appno=++appno;

}

int search(Queue \*q,int v)

{

int i;

for (i=q->f;i<=q->r;i++)

{

if (q->a[i]->appno==v)

return i;

}

return -1;

}

int status(Queue\*q,int appno)

{

int index=search(q,appno);

if (index==-1)

{

printf("APPLICATION NO. %d DOES NOT EXIST.\nPLEASE ENTER A VALID APPLICATION NO. AND TRY AGAIN",appno);

return -1;

}

else if (index==q->f)

{

printf("APPLICATION NO.: %d\tSTATUS: READY");

return 1;

}

else

{

printf("APPLICATION NO.: %d \tSTATUS:NOT READY",appno);

return 0;

}

}

void printForm(Queue \*q,int appno)

{

if (search(q,appno)==-1)

{

printf("APPLICATION NO. %d DOES NOT EXIST.\nPLEASE ENTER A VALID APPLICATION NO. AND TRY AGAIN",appno);

}

else if (q->a[q->f]->appno==appno)

{

printf("--------------------------------------------------------------------------------------------------------------------\nCONCESSION FORM\n\n");

printf("NAME: %s %s %s\nAGE: %d\nGENDER: %s\nFROM: %s\tTO: Bandra\nVALIDITY FROM: %d/%d/%d FOR %d MONTHS\n",q->a[q->f]->fname,q->a[q->f]->mname,q->a[q->f]->lname,q->a[q->f]->age,q->a[q->f]->gender,q->a[q->f]->address,q->a[q->f]->p.d.d,q->a[q->f]->p.d.m,q->a[q->f]->p.d.year,q->a[q->f]->p.valid);

printf("--------------------------------------------------------------------------------------------------------------------\n");

q->f++;

}

else

{

printf("CANNOT PRINT FORM AS IT IS NOT READY\nTRY AGAIN LATER");

}

}

int main ()

{

Queue q;

init(&q);

int opt;

int i,appno;

do

{

printf("\nSELECT AN OPTION FROM BELOW:\n1.Apply for Concession\n2.Check Status\n3.Print form\n4.Exit\n");

scanf ("%d",&opt);

switch(opt)

{

case 1: i=addApplicant(&q);

if (i==-1)

printf("CANNOT ACCEPT APPLICATION RIGHT NOW.\nPLEASE TRY AGAIN LATER\nTHANK YOU.");

else

printf("APPLICATION SUCCESSFUL.\nYour Application number is: %d",q.a[q.r]->appno);

break;

case 2: printf("Enter application no.:");

scanf("%d",&appno);

status(&q,appno);

break;

case 3: printf("Enter application no.");

scanf("%d",&appno);

printForm(&q,appno);

break;

case 4: printf("\n\nTHANK YOU.");

break;

default: printf("Enter valid option.");

}

printf("\n\n");

}while(opt!=4);

}