**Automatic shopping system**

Computer programming

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PROBLEM STATEMENT

This program is about developing an RFID based bill generation to save the time while billing. A customer at the entrance is given a trolley with in-built RFID reader which scans and bills the products automatically. It also generates a report on purchase details of that particular day.

FUNCTIONALITIES:

* Generation and storing of RFID code:

Using files to store the products available, add new products and generate the RFID code automatically.

* Updation of stock availability:

Shows the customer quantity of a particular product available during the purchase.

At the end of the day automatically updates the availability of the products(stock) in the files.

* Bill generation:

Generates a bill at the end of purchase with the name, price and quantity of the product.

* Customer classification:

Avail discount for customers under three slabs:

Platinum, gold, silver (based on the amount of their purchase)

* Generate report:

Generates a report on the purchase details of each customers on that particular day.

SOURCE CODE:

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

struct costumer{

//used to store user data

char name[30];

int mobile;

float purchase;

};

struct product{

//used to store the data of each product in the store.

char name[30];

int qty;

int price;

};

void report(struct costumer arr[],int person){

int dd,mm,yyyy;

FILE \*s=fopen("report.txt","a");//File pointer is now opened in append mode.

printf("please enter the date in DD MM YYYY format for the report:");

scanf("%d %d %d",&dd,&mm,&yyyy);//Date is collected and printed in the report.

fprintf(s,"\n\nDate: %d-%d-%d\n\n",dd,mm,yyyy);

for (int i=0;i<person;i++){//purchase of each costumer is printed in the report.

fprintf(s,"%d %s %0.2f\n",arr[i].mobile,arr[i].name,arr[i].purchase);

}

printf("->Report of today's purchase list is added to the report");

}

void billmaker(int n,int goods[],struct product items[],struct costumer arr[],int t){

int \*p=goods;//pointer p is assigned for int array goods

int sum=0,subtotal,q=1;// sum is the total bill Amount

//subtotal is the bill amount for each item and q is the Sno

//goods array is the virtual representation of the customer basket.

printf("\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");

printf("|Sno| Name | Quantity | Price |Amount|\n");

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

for (int i=0;i<n;i++){

if (\*(p+i)>0 && items[i].price>0 && \*(p+i)<1000){

subtotal=(\*(p+i))\*items[i].price;

sum+=subtotal;

printf("| %-2d| %-13s| %-6d|",q++,items[i].name,\*(p+i));

printf("%-4d|%-4d|\n",items[i].price,subtotal);

}

}

printf("\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");

printf("Total Amount of purchase = RS%d\n",sum);

//classification of costumers;

float sp;

if (sum > 5000){//availing 5% discount;

sp=0.95\*sum;

printf("Discount availed on purchase(Under Platinum slab)= %f \n",0.05\*sum);

}else if (sum>3000){//availing 3% discount;

sp=0.97\*sum;

printf("Discount availed on purchase(Under Gold slab)= %f \n",0.03\*sum);

}

else if (sum>1500){//availing 2% discount;

sp=0.98\*sum;

printf("Discount availed on purchase(Under silver slab)= %f \n",0.02\*sum);

}

else{

//the cost remains the same;

sp=sum;

}

printf("Final Price= RS %0.2f\n",sp);

arr[t].purchase = sp;

}

int main()

{

void billmaker(int,int[],struct product [],struct costumer [],int);

void report(struct costumer arr[],int);

FILE \*fp=fopen("start.txt","r");//File pointer is opened in read mode to

int total,left,n;//retrieve data back from the file on stock availability.

printf("Please enter the no of new products:");

scanf("%d",&n);

fscanf(fp,"%d %d",&total,&left);

if ((total-left)<n){//if the size of total isn't sufficent to fill the new products;

total+=(n-(total-left));//left is the existing products in the list;

}//total is the maximum index used to represent a item in the list;

//

//

struct product items[total];//items list is being declared

int index;

//

for (int i=0;i<total;i++){//the contents of the structure are assigned zero

items[i].price=0;//for less garbage values to encounter.

items[i].qty=0;

}

for (int i=0;i<left;i++){//data from the start.txt is being retrieved.

fscanf(fp,"%d",&index);

fscanf(fp,"%s %d %d",items[index].name,&items[index].price,&items[index].qty);

}

for (int i=0;i<n;i++){

int flag=1;

char name[20];

printf("Enter the name of the product:");

scanf("%s",name);

for (int j=0;j<total;j++){

if (!(strcmp(name,items[j].name))){// when the product already exists in the list

int d=items[j].qty,e;

printf("Enter the no of items:");

scanf("%d",&e);

for (int c=d+1;c<d+e+1;c++){

printf("%d\n",(j+1)\*10000+c);

}

items[j].qty+=e;//qty of the existing product is updated.

flag=0;

break;

}

}

int t=0;

if (flag){//when its a new product into the market.

while (items[t].price>0 && items[t].qty>0){

t++;//finding the first vacant index in the list;

}

strcpy(items[t].name,name);

printf("Enter the price of the product:");

scanf("%d",&items[t].price);

printf("Enter the no of items:");

int x;

scanf("%d",&x);

printf("the rfid codes are:\n");

for (int c=1;c<=x;c++){

printf("%d\n",(t+1)\*10000+c);

}

items[t].qty+=x;

}

}

fclose(fp);

//the process of data retrieval and data updation is over here.

//Here the console starts to face the user for shopping for the entire day.

struct costumer arr[1000];

for (int i=0;i<1000;i++){//assigned zero for less garbage values.

arr[i].mobile=0;

arr[i].purchase=0;

}

int person=0;

int goods[total],t;

do{//loop is continued till the end of the day.Stopped by a secret code(1234)

for (int i=0;i<total;i++){

goods[i]=0;//re-initalizing the basket to an empty basket

}

puts("\nWELCOME TO THE SUPERMART\n");

printf("Enter your name:");

scanf("%s",arr[person].name);

printf("Enter your mobile no:");

scanf("%d",&arr[person].mobile);

do{

int no;

printf("\nplease enter the rfid:");

scanf("%d",&t);

t=(t/10000)-1;

do{//repeats while the no of items needed is invalid.

printf("\n|Name: %s | Price: %d|\n",items[t].name,items[t].price);

printf("\nthere are only %d pieces left!\n",items[t].qty);

printf("-Enter a +ve value for adding\n");

printf("-Enter a -ve value for removing\n\n");

printf("please enter the no of items required:");

scanf("%d",&no);

}while(no>items[t].qty || goods[t]+no<0);

//when the realistic condition is met the basket and list are updated.

goods[t]+=no;

items[t].qty-=no;

printf("\n->press any key to continue shopping else 0:");

scanf("%d",&t);

}while(t!=0);

billmaker(total,goods,items,arr,person++);

//bill is printed at the end of the function billmaker().

printf("\n->press any key to start shopping:");

scanf("%d",&t);

}while(t!=1234);

//at the end of the day the daily report is appended.

report(arr,person);

FILE \*fp1;//the inventory file is overwritten with the present stock available.

fp1=fopen("start.txt","w");

left=0;

for (int i=0;i<total;i++){

if (items[i].qty>0 && items[i].price>0){

left++;

}

}

fprintf(fp1,"%d %d\n",total,left);

for (int i=0;i<total;i++){

if (items[i].qty>0 && items[i].price>0){

fprintf(fp1,"%d %s %d %d\n",i,items[i].name,items[i].price,items[i].qty);

}

}

fclose(fp1);

}