#include <iostream>

#include <string>

#include <iomanip>

#include <fstream>

#include <ctime>

#include <cstdlib>

using namespace std;

class Product {

private:

int productNumber;

string productName;

float productRate;

public:

Product() : productNumber(0), productName(""), productRate(0.0) {}

Product(int pNum, string pNam, float rate) : productNumber(pNum), productName(pNam), productRate(rate) {

ofstream outProduct("Products.txt", ios::out | ios::app);

outProduct << productNumber << ' ' << productName << ' ' << productRate << endl;

outProduct.close();

cout << "\n\n\n\tPRODUCT CREATED SUCCESSFULLY";

cin.ignore();

cin.get();

}

int getNumber() { return productNumber; }

string getName() { return productName; }

float getRate() { return productRate; }

void setNumber(int x) { productNumber = x; }

void setName(string x) { productName = x; }

void setRate(float x) { productRate = x; }

};

class Bill {

public:

string date;

float totalAmount;

Bill() {

time\_t now = time(0);

date = ctime(&now);

totalAmount = 0;

}

};

class BillItems {

private:

Product product;

int quantity;

public:

void getItem(int code) {

ifstream prod("Products.txt", ios::in);

int pn;

string pp;

float pr;

while (prod >> pn >> pp >> pr) {

if (pn == code) {

product.setNumber(pn);

product.setName(pp);

product.setRate(pr);

break;

}

}

prod.close();

}

void setQuantity(int x) { quantity = x; }

float getAmount() { return product.getRate() \* quantity; }

void printItemDet() {

cout << "\t" << setw(14) << product.getNumber()

<< "\t" << setw(12) << product.getName()

<< "\t" << setw(12) << product.getRate()

<< "\t" << setw(8) << quantity << "\t";

}

};

class Invoice : public Bill {

private:

int numOfItems;

BillItems item[50];

};

class NavPages {

public:

static void intro() {

cout << "\n\n\n\tBILLING SYSTEM" << endl;

cout << "\n\t================================================================\n";

cout << "\n\n\tMADE BY:";

cout << "\n\n\t Sohan Yeole";

}

static void user() {

int ch;

system("cls");

cout << "\n\n\n\tMAIN MENU";

cout << "\n\n\t1. CUSTOMER";

cout << "\n\n\t2. ADMINISTRATOR";

cout << "\n\n\t3. EXIT";

cout << "\n\n\tPlease Select Your Option (1-3): ";

cin >> ch;

switch (ch) {

case 1: customer(); break;

case 2: admin(); break;

case 3: exit(0);

default: cout << "Invalid Choice!"; cin.get();

}

}

static void customer() {

int n;

BillItems item[20];

system("cls");

cout << "\n\n\tENTER THE NUMBER OF ITEMS: ";

cin >> n;

displayProduct();

int code, qty;

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

cout << "\n\tENTER ITEM CODE: ";

cin >> code;

item[i].getItem(code);

cout << "\n\tENTER ITEM QUANTITY: ";

cin >> qty;

item[i].setQuantity(qty);

}

Bill fBill;

for (int i = 0; i < n; i++) fBill.totalAmount += item[i].getAmount();

system("cls");

cout << "\n\n\tINVOICE\t\t\tDate/Time: " << fBill.date << endl;

cout << "\t=======================================================================" << endl;

cout << "\tProduct Number\tProduct Name\tProduct Rate\tQuantity\tAmount" << endl;

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

item[i].printItemDet();

cout << setw(6) << item[i].getAmount() << endl;

}

cout << "\n\n\t\t\t\tTOTAL AMOUNT: " << fBill.totalAmount;

cout << "\n\tThank You for Shopping!" << endl;

cout << "\n\tPress any key to continue...";

cin.ignore();

cin.get();

}

static void admin() {

while (true) {

system("cls");

int ch;

cout << "\n\n\n\tADMIN MENU";

cout << "\n\n\t1.CREATE PRODUCT";

cout << "\n\n\t2.DISPLAY ALL PRODUCTS";

cout << "\n\n\t3.MODIFY PRODUCT";

cout << "\n\n\t4.DELETE PRODUCT";

cout << "\n\n\t5.BACK TO MAIN MENU";

cout << "\n\n\tPlease Enter Your Choice (1-5): ";

cin >> ch;

switch (ch) {

case 1: createProduct(); break;

case 2: displayProduct(); break;

case 3: modifyProduct(); break;

case 4: deleteProduct(); break;

case 5: return;

default: cout << "Invalid Choice!"; cin.get();

}

}

}

static void createProduct() {

system("cls");

int n;

string p;

float r;

cout << "\n\n\tENTER THE DETAILS OF THE PRODUCT";

cout << "\n\tENTER THE PRODUCT NUMBER: ";

cin >> n;

cin.ignore();

cout << "\n\tENTER THE PRODUCT NAME: ";

getline(cin, p);

cout << "\n\tENTER THE PRODUCT RATE: ";

cin >> r;

Product prod(n, p, r);

}

static void displayProduct() {

system("cls");

ifstream displayProducts("Products.txt");

int n;

string p;

float r;

cout << "\n\n\tDISPLAY ALL PRODUCTS";

cout << "\n\t===================================================";

while (displayProducts >> n >> p >> r) {

cout << "\n\tPRODUCT NUMBER: " << n;

cout << "\n\tPRODUCT NAME: " << p;

cout << "\n\tRATE OF PRODUCT: " << r;

cout << "\n\t===================================================";

}

displayProducts.close();

cout << "\n\tPress any key...";

cin.ignore();

cin.get();

}

static void modifyProduct() {

system("cls");

displayProduct();

ifstream prodIn("Products.txt");

ofstream prodTmp("temp.txt");

cout << "\n\tEnter the Product Number to Modify: ";

int modNum;

cin >> modNum;

int n;

string p;

float r;

while (prodIn >> n >> p >> r) {

if (n == modNum) {

cout << "\n\tEnter new rate: ";

cin >> r;

}

prodTmp << n << ' ' << p << ' ' << r << endl;

}

prodIn.close();

prodTmp.close();

remove("Products.txt");

rename("temp.txt", "Products.txt");

cout << "\n\n\n\tPRODUCT RATE UPDATED SUCCESSFULLY";

cin.ignore();

cin.get();

}

static void deleteProduct() {

system("cls");

displayProduct();

ifstream prodIn("Products.txt");

ofstream prodTmp("temp.txt");

cout << "\n\tEnter the Product Number to Delete: ";

int modNum;

cin >> modNum;

int n;

string p;

float r;

while (prodIn >> n >> p >> r) {

if (n != modNum) prodTmp << n << ' ' << p << ' ' << r << endl;

}

prodIn.close();

prodTmp.close();

remove("Products.txt");

rename("temp.txt", "Products.txt");

cout << "\n\n\n\tPRODUCT DELETED SUCCESSFULLY";

cin.ignore();

cin.get();

}

};

int main() {

NavPages::intro();

cin.ignore();

system("cls");

while (true) NavPages::user();

}