

```

#include <iostream>
#include <string>
#include <fstream>
using namespace std;
//Defining an Account class
class Account{
    public:
//        setting salary value
        float salary = 2000.00;

};
//Using inheritance
class Engineer: public Account{
    public:
        float allowance = 200.00;

};
//using a struct
struct softwareEngineer{
//    defining pointers to be used later
    int *mobileDeveloperBonus;
    int *webDeveloperBonus;
    int *desktopDeveloperBonus;
//    Using an array of integers
    int recommendedAges[8] = {3, 9, 16, 28, 32, 50, 51, 52};
//    Using floats
    float mobileDeveloperTax = 60.04;
    float webDeveloperTax = 45.87;
    float desktopDeveloperTax = 54.23;
};
//using a function that does not return a value
void printDeveloperBonus(int bonus, int* developerBonus){
    developerBonus = &bonus;
    cout << "The address stored in this pointer is: " << developerBonus << endl;
    cout << "The value of this pointer is: " << *developerBonus << endl;

}
//Using a function that returns a float value
float netSalary(float salary, float bonus, float allowance, float tax){
    float netSalary;
    netSalary = salary + bonus + allowance - tax;
    return netSalary;

}

```

```

//using a function that does not return any value (Just printing the main menu)
void displayMenu(){
    cout << endl << "-----Menu-----" << endl;
    cout << endl << "1. Get the address and value stored in a pointer" << endl;
    cout << "2. Check recommended ages of the book" << endl;
    cout << "3. Get the price of the book" << endl;
    cout << "4. Create a text file with employes names" << endl;
    cout << "5. Read text file" << endl;
    cout << "6. Exit" << endl;
}

//using a function that does not return any value (Just printing the Software Engineer menu)
void displaySoftwareEngineers(){
    cout << "-----Select a type of book-----" << endl;
    cout << endl << "1. kid books" << endl;
    cout << "2. adult books" << endl;
    cout << "3. Magazines" << endl;
}

//creating a data file that returns a boolen
bool createFile(){
    //    using an array of strings
    string softwareEngineers[5] = {"Jane 601-789-2454", "John 258-943-2156", "Hellen
601-523-5202", "Lawrence 563-892-0921", "Matheo 789-253-4503"};
    fstream fw;
    //    creating a text file
    fw.open("engineers.txt", ios::out);
    if(fw.is_open()){
    //        using a loop to write data to a file
        for(int i = 0; i < 5; i++){
            fw << softwareEngineers[i] << "\n";
        }
        fw.close();
        return true;
    }else{
        return false;
    }
}

}

//a function for reading data in a text file
void readFile(){
    string engineer;
    fstream textFile;
    //    opening the text file
    textFile.open("engineers.txt", ios::in);

```

```

        cout << "List of Employes Names and Phone Numbers." << endl;
//      Printing data from a text file
        if(textFile.is_open()){
            string data;
            int count = 1;
//          using a while loop to read and print datya from a text file
            while(getline(textFile, data)){
                cout << count << ". " << data << "\n";
                count = count + 1;
            }
            textFile.close();
        }else{
            cout << "error";
        }
    }
//The main function
int main() {
//      Defining a class object
    Engineer e1;
//      initializing an object of a struct
    struct softwareEngineer engineer;
//      defining float and int variables to be used later
    float salary;
    float allowance;
    float bonus;
    float tax;
    int mobileBonus = 180;
    int webBonus = 150;
    int desktopBonus = 190;
    int option;
    int engineerOption;

    salary = float(e1.salary);
    allowance = float(e1.allowance);

    menu:
//      Calling the function to display the main menu
    displayMenu();
    cout << "Select an option: ";
    cin >> option;
//      if option 1 (Get the address and value stored in a pointer) is selected
    if(option == 1){

```

```

        displaySoftwareEngineers();
        cout << "Select an a book type: ";
        cin >> engineerOption;
        if(engineerOption == 1){
            printDeveloperBonus(mobileBonus, engineer.mobileDeveloperBonus);
        }else if(engineerOption == 2){
            printDeveloperBonus(webBonus, engineer.webDeveloperBonus);
        }else if(engineerOption == 3){
            printDeveloperBonus(desktopBonus, engineer.desktopDeveloperBonus);
        }
        goto menu;
    }

// if option 2 is selected from the main menu
else if(option == 2){
    cout << "Recommended ages for types of books are: " ;
// using a for loop to get data from an array
    for(int i = 0; i < 8; i++){
        cout << engineer.recommendedAges[i] << ", ";
    }
    goto menu;
}

// if option 3 is selected from the main menu
else if(option == 3){
    displaySoftwareEngineers();
    cout << "Select an book type: ";
    cin >> engineerOption;
    if(engineerOption == 1){
        bonus = float(mobileBonus);
        tax = engineer.mobileDeveloperTax;
        cout << endl << "The net salary for this type of book are : $" << netSalary
(salary, bonus, allowance, tax)<< endl;

        }else if(engineerOption == 2){
            bonus = float(webBonus);
            tax = engineer.webDeveloperTax;
            cout << endl << "The net salary for this type of book are : $" << netSalary
(salary, bonus, allowance, tax)<< endl;

        }else if(engineerOption == 3){
            bonus = float(desktopBonus);
            tax = engineer.destopDeveloperTax;

```

```
        cout << endl << "The net salary for this type of book are : $" << netSalary  
(salary, bonus, allowance, tax)<< endl;
```

```
    }  
    goto menu;  
}  
// if option 4 is selected from the main menu  
else if(option == 4){  
// if createFile returns true  
if(createFile()){  
    cout << "File created successfully!! " ;  
}  
// if it returns false  
else{  
    cout << "Error while creating a text file!! " ;  
}  
    goto menu;  
}  
// if option 5 is selected from the main menu (read file content)  
else if(option == 5){  
    readFile();  
    goto menu;  
}  
// if option 6 is selected (exit the system)  
else if(option == 6){  
    exit(0);  
}  
  
}
```