

OOP Assignment

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Assignment #1

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Question: Implement a **Bank Account Management System** in **C++** using **OOP concepts**. Your program should include the following requirements:

1. **Create a class named BankAccount** that has the following private data members:
 - accountHolderName (string)
 - accountNumber (integer)
 - balance (double)
2. **Implement the following functions inside the class:**
 - A **parameterized constructor** to initialize the account with accountHolderName, accountNumber, and initial balance.
 - A **deposit function** to add an amount to the balance.
 - A **withdraw function** that deducts the amount from the balance (only if sufficient balance is available).
 - A **display function** to print account details.
3. **Implement a friend function** to check if the balance of one account is greater than the balance of another account.
4. **Create a main() function** that:
 - Creates two bank account objects.
 - Deposits and withdraw some amount from each account.
 - Uses the **friend function** to compare which account has a higher balance.
 - Displays the details of both accounts.

Code:

```
#include <iostream>
using namespace std;
class BankAccount {
private:
    string accountHolderName; //stores Account holder name
    int accountNumber; //Stores the Account number
    double balance; //Stores the balance in accounts
public:
    void Access(string AHN, int AN, double B)
    {
        accountHolderName = AHN;
        accountNumber = AN;
        balance = B;
    }
}
```

```
void addDetails()
{
    cout << "Enter Account Holder name: ";
    cin >> accountHolderName;
    cout << "Enter Account number: ";
    cin >> accountNumber;
    cout << "Enter balance: ";
    cin >> balance;
}

void Display()
{
    cout << "Account Holder Name: " << accountHolderName << endl;
    cout << "Account Number: " << accountNumber << endl;
    cout << "Total Balance: " << balance << endl;
}

void Deposit()
{
    double amount = 0;
    if (amount < 0)
    {
        cout << "Invalid Input!" << endl;
    }
    else
    {
        cout << "Enter amount to deposit: ";
        cin >> amount;
        balance += amount;
        cout << "Deposited Successfully!" << endl;
    }
    cout << "New Balance: " << balance << endl;
    cout << endl;
}

void Withdraw()
{
    double amount;
    cout << "Enter amount to withdraw: ";
    cin >> amount;
    if (amount > balance)
```

```

        {
            cout << "Insuffucient balance!" << endl;
        }
        else
        {
            balance -= amount;
            cout << "Succesfully deducted" << endl;
        }
        cout << "New Balance: " << balance << endl;
        cout << endl;
    }
    friend void balanceCheck(BankAccount a1, BankAccount a2);
};

void balanceCheck(BankAccount a1, BankAccount a2)
{
    if (a1.balance > a2.balance)
    {
        cout<< "Account 1 Has greater Balance" << endl;
    }
    else
    {
        cout << "Account 2 has greater balance" << endl;
    }
}

int main()
{
    BankAccount a1;
    BankAccount a2;

    a1.addDetails();
    cout << endl;
    a1.Deposit();
    a1.Withdraw();
    cout << endl;

    a2.addDetails();
    cout << endl;
    a2.Deposit();

```

```

        a2.Withdraw();
        cout << endl;
        cout << "Account 1 Details: " << endl;
        a1.Display();
        cout << endl;
        cout << "Account 2 Details: " << endl;
        a2.Display();
        cout << endl;

        balanceCheck(a1,a2);
    }

```

Screenshot:

```

Microsoft Visual Studio Debug Console
Enter Account Holder name: Umar
Enter Account number: 1234
Enter balance: 10000

Enter amount to deposit: 2000
Deposited Successfully!
New Balance: 12000

Enter amount to withdraw: 5000
Successfully deducted
New Balance: 7000

Enter Account Holder name: Ahtesham
Enter Account number: 2345
Enter balance: 150000

Enter amount to deposit: 3000
Deposited Successfully!
New Balance: 153000

Enter amount to withdraw: 120000
Successfully deducted
New Balance: 33000

Account 1 Details:
Account Holder Name: Umar
Account Number: 1234
Total Balance: 7000

Account 2 Details:
Account Holder Name: Ahtesham
Account Number: 2345
Total Balance: 33000

Account 2 has greater balance

F:\OOP Assignment 1\x64\Debug\OOP Assignment 1.exe (process 14448) exited with

```