Inheritance

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Lab

- Given the following Account class:

```cpp
class Account
{
public:
    Account(double); // constructor initializes balance
    void credit(double); // add an amount to the account balance
    bool debit(double); // subtract an amount from the account balance
    void setBalance(double); // sets the account balance
    double getBalance(); // return the account balance
private:
    double balance; // data member that stores the balance
}; // end class Account
```

```cpp
Account::Account(double initialBalance)
{
    // if initialBalance is greater than or equal to 0.0, set this value
    // as the balance of the Account
    if (initialBalance >= 0.0)
        balance = initialBalance;
    else { // otherwise, output message and set balance to 0.0
        cout << "Error: Initial balance cannot be negative." << endl;
        balance = 0.0;
    } // end if...else
} // end Account constructor

  // credit (add) an amount to the account balance
void Account::credit(double amount) {
    balance = balance + amount; // add amount to balance
} // end function credit
```

```cpp
bool Account::debit(double amount)
{
    if (amount > balance) // debit amount exceeds balance
    {
        cout << "Debit amount exceeded account balance." << endl;
        return false;
    } // end if
    else // debit amount does not exceed balance
    {
        balance = balance - amount;
        return true;
    } // end else
} // end function debit

    // set the account balance
void Account::setBalance(double newBalance)
{
    balance = newBalance;
} // end function setBalance

    // return the account balance
double Account::getBalance()
{
    return balance;
} // end funct
```

Define a class named CheckingAccount using inheritance with the following features:

- Include an additional data member of type double that represents the fee charged per transaction

- CheckingAccount's **constructor** should receive the *initial balance* and *a parameter indicating a fee amount*

- Class CheckingAccount should redefine member functions credit() and debit() so that they subtract the fee from the account balance whenever either transaction is successful