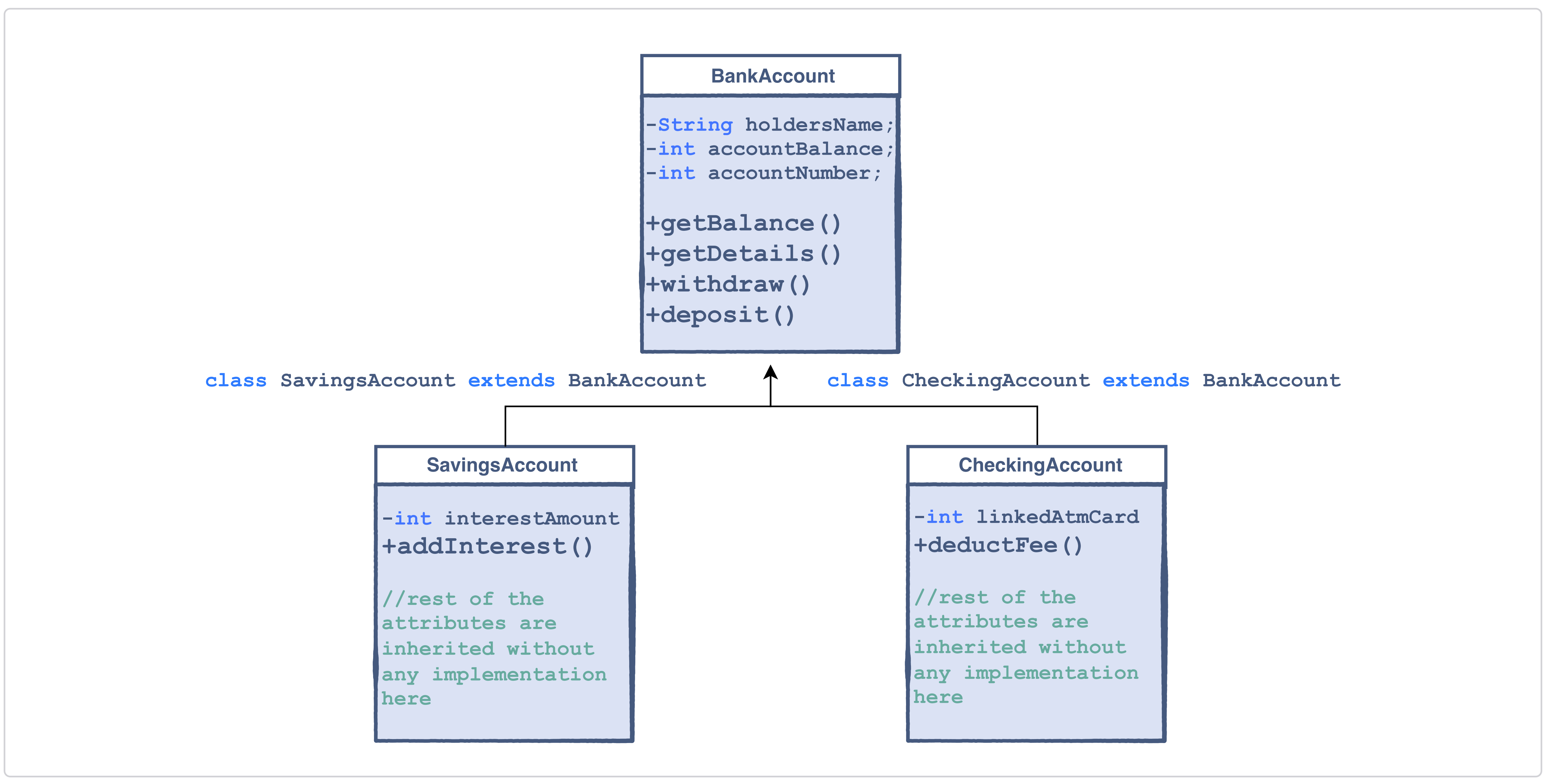
Re-usability

Inheritance makes the code reusable. Consider that you are up for designing a banking system using classes. Your model might have these:

- A base `BankAccount` class
- A derived class named `SavingsAccount`
- A derived class named `CheckingAccount`



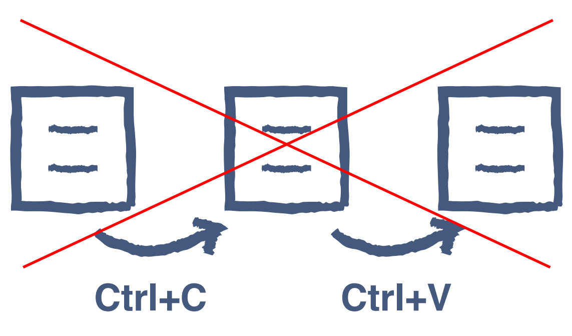
```
BankAccount
-String holdersName;
-int accountBalance;
-int accountNumber;

+getBalance()
+getDetails()
+withdraw()
+deposit()

class SavingsAccount extends BankAccount
class CheckingAccount extends BankAccount

SavingsAccount
-int interestAmount
+addInterest()

//rest of the
attributes are
inherited without
any implementation
here

CheckingAccount
-int linkedAtmCard
+deductFee()

//rest of the
attributes are
inherited without
any implementation
here
```

On a later point, you realize that you have to diversify this banking application by adding another class for `MoneyMarketAccount`. So, rather than implementing this class from scratch you can extend from the existing `BankAccount` class as a starting point and reuse its attributes that are common with `MoneyMarketAccount`.

In the above example, we can examine that we can implement *inheritance* which will result in avoiding **redundant coding** and will also save the programmer's *time and effort*.

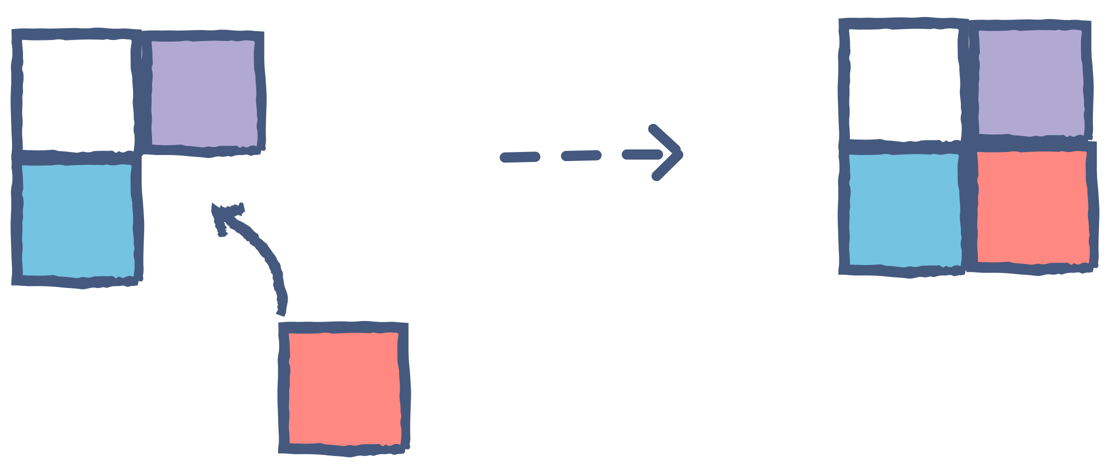
Avoiding Duplication of Code

Considering the above example, you **don't need to duplicate** the code for the `deposit()` and `withdraw()` methods inside the **child** classes namely `SavingsAccount` and `CheckingAccount`. In this way, you can avoid the duplication of code.



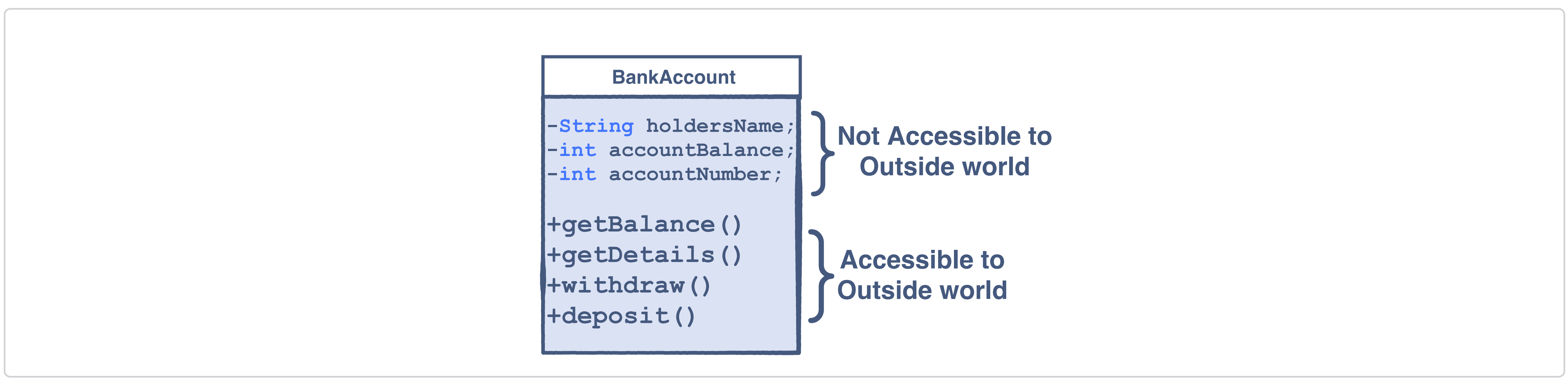
Extensibility

Using inheritance, one can extend the base class logic as per the business logic of the derived class. This is an easy way to upgrade or enhance specific parts of a product without changing the core attributes. An existing class can act as a base class to derive a new class having upgraded features.



Data Hiding

The base class can decide to keep some data private so that it cannot be altered by the derived class. This concept i.e. encapsulation has already been discussed in the previous chapter.



```
-String holdersName;
-int accountBalance;
-int accountNumber;

+getBalance()
+getDetails()
+withdraw()
+deposit()
```