

# Programming Advanced for QA – Regular Exam

17 December 2023

Submit your zip file here: <https://judge.softuni.org/Contests/Compete/Index/4499#2>

## 3. Unit Test: Bank Account

You are given a class **BankAccount** holding a **double** property **Balance** and **two methods** **Deposit()** and **Withdraw()**:

```
public void Deposit(double amount)
{
    if (amount <= 0)
    {
        throw new ArgumentException(message: "Deposit amount must be greater than zero.");
    }

    this.Balance += amount;
}
```

```
public void Withdraw(double amount)
{
    if (amount <= 0 || amount > this.Balance)
    {
        throw new ArgumentException(message: "Invalid withdrawal amount.");
    }

    this.Balance -= amount;
}
```

You will need to **test the two methods** using the test file **BankAccountTests.cs**, inside they are **6 empty tests**:

```

public class BankAccountTests
{
    [Test]
    0 references
    public void Test_Constructor_InitialBalanceIsSet()...

    [Test]
    0 references
    public void Test_Deposit_PositiveAmount_IncreasesBalance()...

    [Test]
    0 references
    public void Test_Deposit_NegativeAmount_ThrowsArgumentException()...

    [Test]
    0 references
    public void Test_Withdraw_ValidAmount_DecreasesBalance()...

    [Test]
    0 references
    public void Test_Withdraw_NegativeAmount_ThrowsArgumentException()...

    [Test]
    0 references
    public void Test_Withdraw_AmountGreaterThanBalance_ThrowsArgumentException()...
}

```

**Note! You may need to think for rounding when decimal numbers are used for withdraw.**

When you are ready make sure your **tests run**:

- ✓ BankAccountTests (6)
  - ✓ Test\_Constructor\_InitialBalanceIsSet
  - ✓ Test\_Deposit\_NegativeAmount\_ThrowsArgumentException
  - ✓ Test\_Deposit\_PositiveAmount\_IncreasesBalance
  - ✓ Test\_Withdraw\_AmountGreaterThanBalance\_ThrowsArgumentException
  - ✓ Test\_Withdraw\_NegativeAmount\_ThrowsArgumentException
  - ✓ Test\_Withdraw\_ValidAmount\_DecreasesBalance

**IMPORTANT: DO NOT REMOVE OR CHANGE ANY NAMESPACES AND USING.**