

Test for removeCurrency()

1. Screen shot of terminal output of tests

```
Wallet.h  main.cpp M  Wallet.cpp M X
week7 > C:Wallet.cpp > removeCurrency(std::string, double)
41  std::string Wallet::toString(){
43      std::string s;
44      for (std::pair<std::string,double> pair : currencies)
45      {
PROBLEMS  OUTPUT  DEBUG CONSOLE  PORTS  TERMINAL
Print Wallet
BTC : 15.000000 ...
PS C:\Users\matto\OneDrive\Cplusplus\project\week7> ./merkelrex
Tests for remove Currency
Start with this wallet
BTC : 15.000000
ETH : 5000.000000
USDT : 15000.000000

If the wallet does not contain this much currency, do not change the wallet and return True (Should be false as it cannot remove currency!?)
Try to remove 10000 ETH : 1
Print Wallet
BTC : 15.000000
ETH : 5000.000000
USDT : 15000.000000

If the wallet does contain at least this much currency of this type, remove the currency from the wallet and return true
Try to remove 7500 USDT : 1
Print Wallet
BTC : 15.000000
ETH : 5000.000000
USDT : 7500.000000

Throw an exception if amount < 0
Try to remove -10 BTC: terminate called after throwing an instance of 'std::exception'
what():  std::exception
PS C:\Users\matto\OneDrive\Cplusplus\project\week7> |
```

2. Test script in main() function

```
File  Edit  Selection  View  ...  project
EXPLORER  PROJECT  week7 > C:Wallet.h  main.cpp M X  Wallet.cpp M
> .vscode
> week1
> week2
> week3
> week4
> week5
> week7
  > data
  CSVReader.cpp
  CSVReader.h
  main.cpp
  MerkelMain.cpp
  MerkelMain.h
  merkelrex.exe
  OrderBook.cpp
  OrderBook.h
  OrderBookEntry.cpp
  OrderBookEntry.h
  Wallet.cpp
  Wallet.h
56  std::cout << "Lets try to add -10 ETH" << std::endl;
57  wallet.insertCurrency("ETH", -10);
58
59  // Tests for remove currency
60  std::cout << "Tests for remove Currency" << std::endl;
61  wallet.insertCurrency("BTC", 15);
62  wallet.insertCurrency("USDT", 15000);
63  wallet.insertCurrency("ETH", 5000);
64  std::cout << "Start with this wallet" << std::endl;
65  std::cout << wallet.toString() << std::endl;
66  std::cout << "" << std::endl;
67  std::cout << "If the wallet does not contain this much currency, do not change the wallet and return True (Should be false as it cannot remove currency" << std::endl;
68  std::cout << "Try to remove 10000 ETH : " << wallet.removeCurrency("ETH", 10000) << std::endl;
69  std::cout << "Print Wallet" << std::endl;
70  std::cout << wallet.toString() << std::endl;
71  std::cout << "" << std::endl;
72  std::cout << "If the wallet does contain at least this much currency of this type, remove the currency from the wallet and return true " << std::endl;
73  std::cout << "Try to remove 7500 USDT : " << wallet.removeCurrency("USDT", 7500) << std::endl;
74  std::cout << "Print Wallet" << std::endl;
75  std::cout << wallet.toString() << std::endl;
76  std::cout << "" << std::endl;
77  std::cout << "Throw an exception if amount < 0" << std::endl;
78  std::cout << "Try to remove -10 BTC: " << wallet.removeCurrency("BTC", -10) << std::endl;
79
80
81
82
83
```

3. Screen shot of removeCurrency() function from Wallet class

The screenshot shows the Visual Studio Code editor with the 'Wallet.cpp' file open. The 'EXPLORER' sidebar on the left displays the project structure, including folders for weeks 1 through 7, and files like 'CSVReader.cpp', 'MerkelMain.cpp', 'OrderBook.cpp', and 'Wallet.cpp'. The main editor area shows the implementation of the 'removeCurrency' function. The function signature is 'bool Wallet::removeCurrency(std::string type, double amount)'. The code includes a check for negative amounts, a check for zero balance, and a check for the presence of the currency type. If the currency is present, it checks if the balance is sufficient. If not, it returns false. If sufficient, it updates the balance and returns true. The 'TERMINAL' panel at the bottom shows the command prompt path 'PS C:\Users\matto\OneDrive\Cplusplus\project\week7>'.

```
54 bool Wallet::removeCurrency(std::string type, double amount)
55 {
56     double balance;
57
58     if(amount < 0)
59     {
60         throw std::exception();
61     }
62     if( currencies.count(type) == 0) // not there yet
63     {
64         return false;
65     }
66     else
67     { // is there, do we have enough?
68         if(containsCurrency(type, amount))
69         {
70             // If the wallet does not contain this much currency, do not change the wallet and return true
71             currencies[type] -= amount;
72             return true;
73         }
74         else
75         { // return false;
76             return true;
77         }
78     }
79     balance += amount;
80     currencies[type] = balance;
81 }
82 bool Wallet::canFullFillOrder(OrderBookEntry order)
83 {
```

PROBLEMS OUTPUT DEBUG CONSOLE PORTS TERMINAL

```
what(): std::exception
PS C:\Users\matto\OneDrive\Cplusplus\project\week7>
```