REPORT HW2

simple_main.cpp

```
$ make
echo ----------compiling simple_main.cpp to create executable program main----------
----------compiling simple_main.cpp to create executable program main----------
g++ -ggdb -std=c++11 simple_main.cpp -o simple_main
echo ----------compiling coins_main.cpp to create executable program main----------
----------compiling coins_main.cpp to create executable program main----------
g++ -ggdb -std=c++11 coins_main.cpp -o coins_main
echo ----------compiling coins_menu.cpp to create exectuable program main----------
----------compiling coins_menu.cpp to create exectuable program main----------
g++ -ggdb -std=c++11 coins_menu.cpp -o coins_menu
mscha1@andromeda-34 22:37:51 ~/hw/hw2
$ ls
a.out*    .Coins.h.swo  coins_main.cpp  coins_menu.cpp  Makefile      simple_main.cpp  typescript
Coins.h  coins_main*   coins_menu*   create_script*  simple_main*  simple_main.txt
mscha1@andromeda-34 22:37:55 ~/hw/hw2
$ simple_main
I started with 100 quarters, 10 dimes, 10 nickels, 100 pennies. in my pocket
I bought a candy bar for 482 cents using19 quarters, 0 dimes, 1 nickels, 2 pennies.
I have 81 quarters, 10 dimes, 9 nickels, 98 pennies. left in my pocket
mscha1@andromeda-34 22:37:57 ~/hw/hw2
$
```
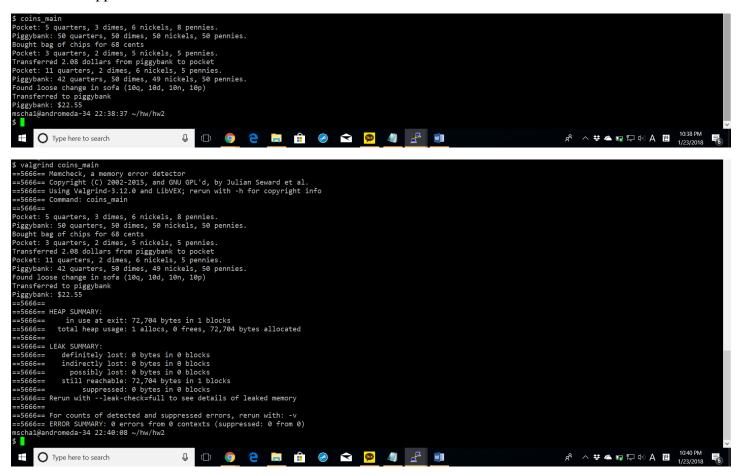
```
$ valgrind simple_main
==5638== Memcheck, a memory error detector
==5638== Copyright (C) 2002-2015, and GNU GPL'd, by Julian Seward et al.
==5638== Using Valgrind-3.12.0 and LibVEX; rerun with -h for copyright info
==5638== Command: simple_main
==5638==
I started with 100 quarters, 10 dimes, 10 nickels, 100 pennies. in my pocket
I bought a candy bar for 482 cents using19 quarters, 0 dimes, 1 nickels, 2 pennies.
I have 81 quarters, 10 dimes, 9 nickels, 98 pennies. left in my pocket
==5638==
==5638== HEAP SUMMARY:
==5638==     in use at exit: 72,704 bytes in 1 blocks
==5638==   total heap usage: 1 allocs, 0 frees, 72,704 bytes allocated
==5638==
==5638== LEAK SUMMARY:
==5638==    definitely lost: 0 bytes in 0 blocks
==5638==    indirectly lost: 0 bytes in 0 blocks
==5638==      possibly lost: 0 bytes in 0 blocks
==5638==    still reachable: 72,704 bytes in 1 blocks
==5638==         suppressed: 0 bytes in 0 blocks
==5638== Rerun with --leak-check=full to see details of leaked memory
==5638==
==5638== For counts of detected and suppressed errors, rerun with: -v
==5638== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
mscha1@andromeda-34 22:39:29 ~/hw/hw2
$
```

coins_main.cpp

```
$ coins_main
Pocket: 5 quarters, 3 dimes, 6 nickels, 8 pennies.
Piggybank: 50 quarters, 50 dimes, 50 nickels, 50 pennies.
Bought bag of chips for 68 cents
Pocket: 3 quarters, 2 dimes, 5 nickels, 5 pennies.
Transferred 2.08 dollars from piggybank to pocket
Pocket: 11 quarters, 2 dimes, 6 nickels, 5 pennies.
Piggybank: 42 quarters, 50 dimes, 49 nickels, 50 pennies.
Found loose change in sofa (10q, 10d, 10n, 10p)
Transferred to piggybank
Piggybank: $22.55
mscha1@andromeda-34 22:38:37 ~/hw/hw2
$
```

```
$ valgrind coins_main
==5666== Memcheck, a memory error detector
==5666== Copyright (C) 2002-2015, and GNU GPL'd, by Julian Seward et al.
==5666== Using Valgrind-3.12.0 and LibVEX; rerun with -h for copyright info
==5666== Command: coins_main
==5666==
Pocket: 5 quarters, 3 dimes, 6 nickels, 8 pennies.
Piggybank: 50 quarters, 50 dimes, 50 nickels, 50 pennies.
Bought bag of chips for 68 cents
Pocket: 3 quarters, 2 dimes, 5 nickels, 5 pennies.
Transferred 2.08 dollars from piggybank to pocket
Pocket: 11 quarters, 2 dimes, 6 nickels, 5 pennies.
Piggybank: 42 quarters, 50 dimes, 49 nickels, 50 pennies.
Found loose change in sofa (10q, 10d, 10n, 10p)
Transferred to piggybank
Piggybank: $22.55
==5666==
==5666== HEAP SUMMARY:
==5666==     in use at exit: 72,704 bytes in 1 blocks
==5666==   total heap usage: 1 allocs, 0 frees, 72,704 bytes allocated
==5666==
==5666== LEAK SUMMARY:
==5666==    definitely lost: 0 bytes in 0 blocks
==5666==    indirectly lost: 0 bytes in 0 blocks
==5666==      possibly lost: 0 bytes in 0 blocks
==5666==    still reachable: 72,704 bytes in 1 blocks
==5666==         suppressed: 0 bytes in 0 blocks
==5666== Rerun with --leak-check=full to see details of leaked memory
==5666==
==5666== For counts of detected and suppressed errors, rerun with: -v
==5666== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
mscha1@andromeda-34 22:40:08 ~/hw/hw2
$
```

coins_menu.cpp

```
$ coins_menu
* * * * * * * * * * * * * * * * * * * * * *
*             COINS BANK MENU             *
*                                         *
* OPTION                        ENTER     *
*                                         *
*   DEPOSIT CHANGE (in $)        D or d   *
*   EXTRACT CHANGE(in $)         E or e   *
*   PRINT BALANCE                B or b   *
*                                         *
*   Quit                         Q or q   *
*                                         *
* * * * * * * * * * * * * * * * * * * * * *
Enter a command character:
m
Invalid command: m
* * * * * * * * * * * * * * * * * * * * * *
*             COINS BANK MENU             *
*                                         *
* OPTION                        ENTER     *
*                                         *
*   DEPOSIT CHANGE (in $)        D or d   *
*   EXTRACT CHANGE(in $)         E or e   *
*   PRINT BALANCE                B or b   *
*                                         *
*   Quit                         Q or q   *
*                                         *
* * * * * * * * * * * * * * * * * * * * * *
Enter a command character:
d
DEPOSIT AMOUNT: 5.34
NEW BALANCE: 21 quarters, 0 dimes, 1 nickels, 4 pennies.
* * * * * * * * * * * * * * * * * * * * * *
*             COINS BANK MENU             *
*                                         *
* OPTION                        ENTER     *
*                                         *
*   DEPOSIT CHANGE (in $)        D or d   *
*   EXTRACT CHANGE(in $)         E or e   *
*   PRINT BALANCE                B or b   *
*                                         *
*   Quit                         Q or q   *
*                                         *
* * * * * * * * * * * * * * * * * * * * * *
Enter a command character:
e
EXTRACTION AMOUNT: 7.98
NOT ENOUGH BALANCE
NEW BALANCE: 21 quarters, 0 dimes, 1 nickels, 4 pennies.
* * * * * * * * * * * * * * * * * * * * * *
```

```
* * * * * * * * * * * * * * * * * * * * * *
*             COINS BANK MENU             *
*                                         *
* OPTION                        ENTER     *
*                                         *
*   DEPOSIT CHANGE (in $)        D or d   *
*   EXTRACT CHANGE(in $)         E or e   *
*   PRINT BALANCE                B or b   *
*                                         *
*   Quit                         Q or q   *
*                                         *
* * * * * * * * * * * * * * * * * * * * * *
Enter a command character:
e
EXTRACTION AMOUNT: 3.87
NOT ENOUGH BALANCE
NEW BALANCE: 21 quarters, 0 dimes, 1 nickels, 4 pennies.
* * * * * * * * * * * * * * * * * * * * * *
*             COINS BANK MENU             *
*                                         *
* OPTION                        ENTER     *
*                                         *
*   DEPOSIT CHANGE (in $)        D or d   *
*   EXTRACT CHANGE(in $)         E or e   *
*   PRINT BALANCE                B or b   *
*                                         *
*   Quit                         Q or q   *
*                                         *
* * * * * * * * * * * * * * * * * * * * * *
Enter a command character:
b
CURRENT BALANCE: 21 quarters, 0 dimes, 1 nickels, 4 pennies.
* * * * * * * * * * * * * * * * * * * * * *
*             COINS BANK MENU             *
*                                         *
* OPTION                        ENTER     *
*                                         *
*   DEPOSIT CHANGE (in $)        D or d   *
*   EXTRACT CHANGE(in $)         E or e   *
*   PRINT BALANCE                B or b   *
*                                         *
*   Quit                         Q or q   *
*                                         *
* * * * * * * * * * * * * * * * * * * * * *
Enter a command character:
q
Exiting from Coin Bank
mscha1@ron-cadillac 22:44:30 ~/hw/hw2
$
```

```
NOT ENOUGH BALANCE
NEW BALANCE: 35 quarters, 1 dimes, 0 nickels, 4 pennies.
* * * * * * * * * * * * * * * * * * * * * *
*            COINS BANK MENU              *
*                                         *
* OPTION                        ENTER     *
*                                         *
*   DEPOSIT CHANGE (in $)        D or d    *
*   EXTRACT CHANGE(in $)         E or e    *
*   PRINT BALANCE                B or b    *
*                                         *
*   Quit                         Q or q    *
*                                         *
* * * * * * * * * * * * * * * * * * * * * *
Enter a command character:
b
CURRENT BALANCE: 35 quarters, 1 dimes, 0 nickels, 4 pennies.
* * * * * * * * * * * * * * * * * * * * * *
*            COINS BANK MENU              *
*                                         *
* OPTION                        ENTER     *
*                                         *
*   DEPOSIT CHANGE (in $)        D or d    *
*   EXTRACT CHANGE(in $)         E or e    *
*   PRINT BALANCE                B or b    *
*                                         *
*   Quit                         Q or q    *
*                                         *
* * * * * * * * * * * * * * * * * * * * * *
Enter a command character:
q
Exiting from Coin Bank
==5545==
==5545== HEAP SUMMARY:
==5545==     in use at exit: 72,704 bytes in 1 blocks
==5545==   total heap usage: 4 allocs, 3 frees, 72,875 bytes allocated
==5545==
==5545== LEAK SUMMARY:
==5545==    definitely lost: 0 bytes in 0 blocks
==5545==    indirectly lost: 0 bytes in 0 blocks
==5545==      possibly lost: 0 bytes in 0 blocks
==5545==    still reachable: 72,704 bytes in 1 blocks
==5545==         suppressed: 0 bytes in 0 blocks
==5545== Rerun with --leak-check=full to see details of leaked memory
==5545==
==5545== For counts of detected and suppressed errors, rerun with: -v
==5545== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
mscha1@ron-cadillac 22:46:17 ~/hw/hw2
$
```