

PROBLEM #1

Normal Display

PROBLEM1.cpp

```
C:\Windows\system32\cmd.exe

*****
* Welcome to the times table learning system *
*****

***** INSTRUCTIONS *****
* 1.) Chose an option and follow the directions *
* 2.) Once you are done solving problems, pre- *
*     ss ^Z(CTRL + Z) to exit the program *
*****

*****
***** MAIN MENU *****
*
* Please select an option:
*     Normal mode: N
*     Ranged mode: R
*     Quit: Q
*
* Enter(N,R,or Q): n

*****
***** ---NORMAL MODE--- *****
* This mode allows you to answer multip- *
* lication problems within a range of zero *
* to nine. Press -1 to return to the menu *
*****

4 * 1= 4
You have been practicing! Very good!

4 * 3= 12
Keep up the good work! Very good!

4 * 2= 4
You learn best when you practice every day! Please try again.

4 * 2= -1

*****
***** MAIN MENU *****
*
* Please select an option:
*     Normal mode: N
*     Ranged mode: R
*     Quit: Q
*
* Enter(N,R,or Q): q

Thank you for using the program.
Now exiting the program. Press any key to continue . . . _
```

PROBLEM #1

Input Validation

PROBLEM1.cpp

```
C:\Windows\system32\cmd.exe

*****
* Welcome to the times table learning system *
*****

***** INSTRUCTIONS *****
* 1.) Chose an option and follow the directions *
* 2.) Once you are done solving problems, pre- *
*      ss ^Z(CTRL + Z) to exit the program      *
*****

*****
***** MAIN MENU *****
*
* Please select an option:
*      Normal mode: N
*      Ranged mode: R
*      Quit: Q
*
* Enter(N,R,or Q): 3
*
* WARNING: INVALID CHOICE
* Please enter a valid choice: 4
*
* WARNING: INVALID CHOICE
* Please enter a valid choice: m
*
* WARNING: INVALID CHOICE
* Please enter a valid choice: n

*****
*      ---NORMAL MODE---
*
* This mode allows you to answer multip- *
* lication problems within a range of zero *
* to nine. Press -1 to return to the menu *
*****

4 * 9 = k1
      = k
      = 36

You are a math wiz! Very good!

4 * 0 = -1

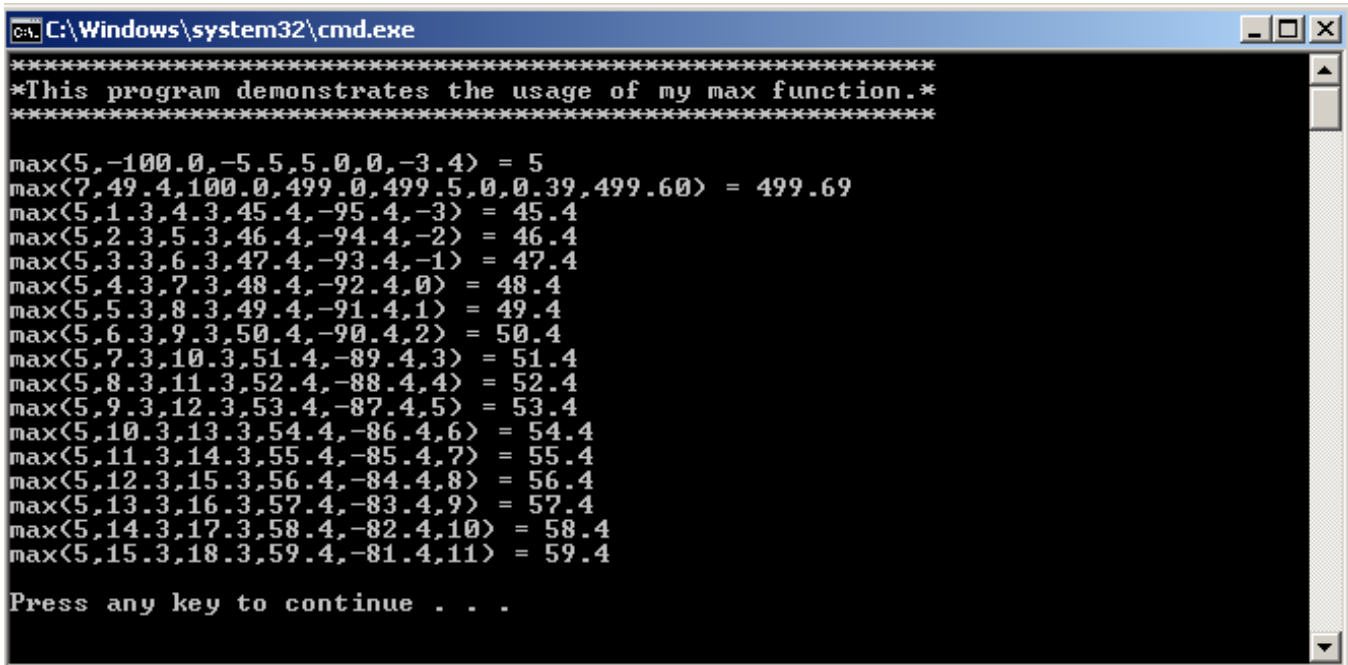
*****
***** MAIN MENU *****
*
* Please select an option:
*      Normal mode: N
*      Ranged mode: R
*      Quit: Q
*
* Enter(N,R,or Q): q

Thank you for using the program.
Now exiting the program. Press any key to continue . . .
```

PROBLEM #2

Normal display

PROBLEM2.cpp



```
C:\Windows\system32\cmd.exe
*****
*This program demonstrates the usage of my max function.*
*****

max(5,-100.0,-5.5,5.0,0,-3.4) = 5
max(7,49.4,100.0,499.0,499.5,0.0,39,499.60) = 499.69
max(5,1.3,4.3,45.4,-95.4,-3) = 45.4
max(5,2.3,5.3,46.4,-94.4,-2) = 46.4
max(5,3.3,6.3,47.4,-93.4,-1) = 47.4
max(5,4.3,7.3,48.4,-92.4,0) = 48.4
max(5,5.3,8.3,49.4,-91.4,1) = 49.4
max(5,6.3,9.3,50.4,-90.4,2) = 50.4
max(5,7.3,10.3,51.4,-89.4,3) = 51.4
max(5,8.3,11.3,52.4,-88.4,4) = 52.4
max(5,9.3,12.3,53.4,-87.4,5) = 53.4
max(5,10.3,13.3,54.4,-86.4,6) = 54.4
max(5,11.3,14.3,55.4,-85.4,7) = 55.4
max(5,12.3,15.3,56.4,-84.4,8) = 56.4
max(5,13.3,16.3,57.4,-83.4,9) = 57.4
max(5,14.3,17.3,58.4,-82.4,10) = 58.4
max(5,15.3,18.3,59.4,-81.4,11) = 59.4

Press any key to continue . . .
```

PROBLEM #3

Standard Input

PROBLEM3.cpp

```

C:\Windows\system32\cmd.exe
*****
*      Welcome to the powers program!      *
* This program allows you to compute powers of *
* numbers on an interval you define. Enjoy! *
*****

      ----MENU----
Please select an option

      Square: S
      Cube: C
      Forth power: F
      Quit: Q

Enter(S,C,F,or Q): c

You have chosen to cube values on an interval

Interval Entry
      Lower bound of interval(integer from 0 to 100) [X,...]: 0
      Upper bound of interval(integer from 0 to 100) [...,Y]: 20

TABULATING [0,20]
      0 |          1 |          8 |          27 |          64 |
-----
      125 |          216 |          343 |          512 |          729 |
-----
      1000 |          1331 |          1728 |          2197 |          2744 |
-----
      3375 |          4096 |          4913 |          5832 |          6859 |
-----
      8000 |

Interval Entry
      Lower bound of interval(integer from 0 to 100) [X,...]: 0
      Upper bound of interval(integer from 0 to 100) [...,Y]: 0

      ----MENU----
Please select an option

      Square: S
      Cube: C
      Forth power: F
      Quit: Q

Enter(S,C,F,or Q): q

Thank you for using this program. Goodbye!
Press any key to continue . . . _

```

PROBLEM #3

Input Validation

PROBLEM3.cpp

```

C:\Windows\system32\cmd.exe
*****
*      Welcome to the powers program!      *
* This program allows you to compute powers of *
* numbers on an interval you define. Enjoy! *
*****

      ----MENU----
Please select an option

      Square: S
      Cube: C
      Forth power: F
      Quit: Q

Enter(S,C,F,or Q): 3

      WARNING: INVALID CHOICE

Please enter a valid choice: f

You have chosen to raise to the forth power values on an interval

Interval Entry
  Lower bound of interval(integer from 0 to 100) [X,...]: 4
  Upper bound of interval(integer from 0 to 100) [...,Y]: 1

      WARNING: INVALID BOUNDARY

Upper bound: 30

TABULATING [4,30]
  256 |      625 |      1296 |      2401 |      4096 |
-----
  6561 |     10000 |     14641 |     20736 |     28561 |
-----
  38416 |     50625 |     65536 |     83521 |     104976 |
-----
  130321 |    160000 |    194481 |    234256 |    279841 |
-----
  331776 |    390625 |    456976 |    531441 |    614656 |
-----
  707281 |    810000 |

Interval Entry
  Lower bound of interval(integer from 0 to 100) [X,...]: 0
  Upper bound of interval(integer from 0 to 100) [...,Y]: 0

```

PROBLEM #4

Standard display.

PROBLEM4.cpp

```
C:\Windows\system32\cmd.exe

*****
***** TESTS OF THE indexOfMax() FUNCTION *****
*****

int myArray[6] = {0, 1, 2, 3, 3, 399}
indexOfMax(myArray,0,5) = 5

double myDoubleArray[5] = {4.3,43.4,44.29,43443.434,0}
indexOfMax(myArray,0,3) = 3

*****
** INTERVAL TEST **
*****

int longIntArray[18] = {34,    55,    33,    22, //Indexes 0-3
                       3,     45,    2,    45, //Indexes 4-7
                       2,     34,    56,    778, //Indexes 8-11
                       223,   45,    3,     3, //Indexes 12-15
                       5,     2}; //Indexes 16-17

The largest element in the array is: 778.
At the index location: 11

The largest element in range [0,3] is: 55.
At the index location: 1

The largest element in range [4,7] is: 45.
At the index location: 7

The largest element in range [8,11] is: 778.
At the index location: 11

The largest element in range [12,15] is: 223.
At the index location: 11

The largest element in range [16,17] is: 5.
At the index location: 16

*****
** Programmer Test **
*****

Discription: You are going to enter integer values into an array
Then the indexOfMax function will determine what position the largest value you
entered was.Example input: 34 55 333 ^Z

NOTE: if you have two or more numbers that are the largest and are equal
the position will indicate the second value position.

Enter a maximum of 10 integers(seperated by spaces,end with ^Z): 34 55 332 0 99
44 55 ^Z

The position of the largest value is: 3, which is 332
Press any key to continue . . . _
```