

Assignment HW3
Due date (on or before): Announced in class.

0. Read about Program Control statements in 'C'. Either from the book, or from a web-tutorial. Please specify which resource you used.

Book Name: _____

(and/or)

Website used: _____

1. Textbook, page 88, Exercise 3.11

```
a. if ( age >= 65 );  
    printf("Age is greater than or equal to 65\n");  
    else  
        printf("Age is less than 65\n");
```

```
b. int x = 1, total;  
  
    while ( x <= 10 ){  
        total += x;  
        ++x;  
    }
```

```
c. While ( x <= 100 )  
    total += x;  
    ++x;
```

```
d. while ( y > 0 ){  
    printf ("%d\n", y);  
    ++y;  
}
```

2. Textbook, page 133, Exercise 4.6

State which values of the control variable x are printed by each of the following for statements:

```
e. for (x = 2; x <= 13; x += 2){  
    printf("%d ", x);  
}
```

Ans:

```
f. for (x = 5; x <= 22; x += 7){  
    printf ("%d ", x);  
}
```

Ans:

```
g. for (x = 3; x <= 15; x += 3){  
    printf ("%d ", x);  
}
```

Ans:

```
h. for ( x = 1; x <= 5; x += 7 ){  
    printf ("%d ", x);  
}
```

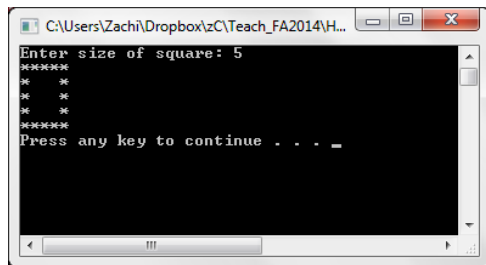
Ans:

```
i. for ( x = 12; x >= 2; x -= 3 ){  
    printf ("%d ", x);  
}
```

Ans:

3. Textbook, page 94, Exercise 3.34

(Hollow Square of Asterisks) Prompt the user for the size of the side of the square, and print a hollow square. For example, if your program reads a size of 5, it should print:



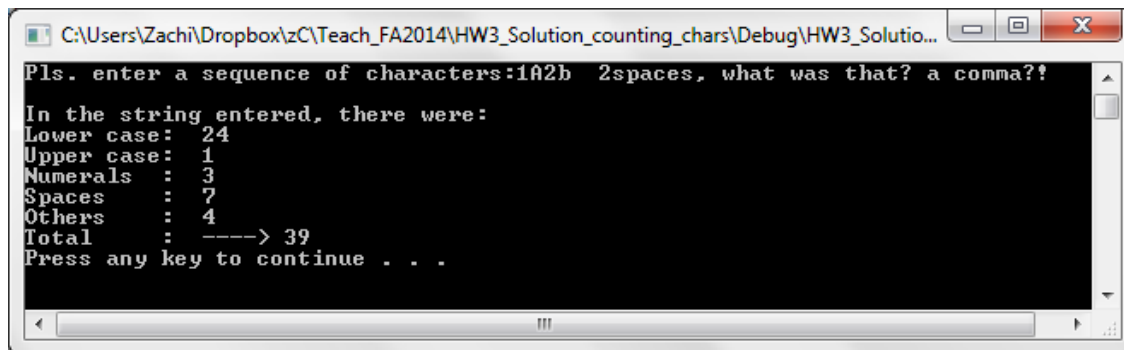
***** Start of code + Screen shot*****

***** End of code + Screen shot*****

Write a program to prompt the user for a sequence of characters, and then counts how many of the following are in the sequence:

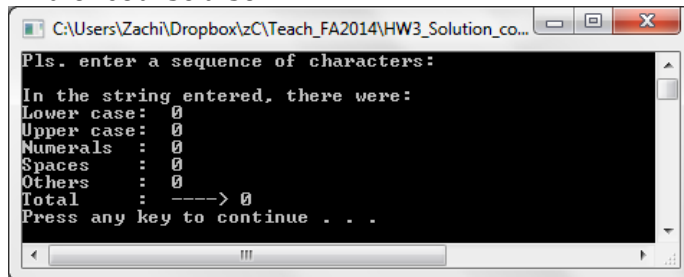
1. Total number of characters
2. Lower case letters.
3. Upper case letters.
4. Numerals (0...9)
5. White spaces
6. Others (not including New line).

The sum of 2-6 should be equal to item 1 of course.



```
C:\Users\Zachi\Dropbox\zC\Teach_FA2014\HW3_Solution_counting_chars\Debug\HW3_Solutio...
Pls. enter a sequence of characters:1a2b 2spaces, what was that? a comma?!
In the string entered, there were:
Lower case: 24
Upper case: 1
Numerals : 3
Spaces   : 7
Others   : 4
Total    : ----> 39
Press any key to continue . . .
```

And of course also:



```
C:\Users\Zachi\Dropbox\zC\Teach_FA2014\HW3_Solution_co...
Pls. enter a sequence of characters:
In the string entered, there were:
Lower case: 0
Upper case: 0
Numerals : 0
Spaces   : 0
Others   : 0
Total    : ----> 0
Press any key to continue . . .
```

***** Start of code + Screen shot*****

***** End of code + Screen shot*****

6. Challenge question (2/2):

Write a program to draw a circle of "*". See example below.

The program will ask the user for the radius of the circle, an integer number. The program will then draw the circle, and prompt the user to input new radius value.


The process will stop when the user inputs a radius of 0 (if entered at the first time, no circle is drawn).

What is a circle?

If the center of the circle is at Row0 and Col0 (you decide what these are), you should draw an "*" symbol at location Row and Col if the distance from (Row0,Col0) is less or equal to the given radius. In formula:

If ($\sqrt{(Row-Row0)^2 + (Col-Col0)^2}$) <= Rad) print "*"

See screenshot below, with example for Rad=2, Rad=3, and Rad=9.



```
C:\Users\Zachi\Dropbox\zC\Teach_FA2014\DrawCircle\Debug\DrawCircle.exe
Please enter Circle Radius, an integer number [0 to quit]:2
Printing a circle of radius 2.
 *
****
*****
****
 *

Please enter Circle Radius, an integer number [0 to quit]:3
 *
*****
*****
*****
*****
 *

Please enter Circle Radius, an integer number [0 to quit]:9
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 *

Please enter Circle Radius, an integer number [0 to quit]:0
Quitting program...
Press any key to continue . . .
```

***** Start of code + Screen shot*****

***** End of code + Screen shot*****