Talen Phillips EE 107 Homework 3 Due 18 Feb 13

1) Run the following program using various inputs:

#include <stdio.h>

int main(void)

{

int a1,a2,a3,cnt;

printf(“Input three integers: “);

cnt = scanf(“%d%d%d”, &a1, &a2, &a3);

printf(“Number of successful conversions: %d\n”, cnt);

return 0;

}

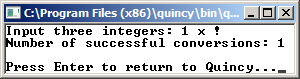
What happens when you type in the letter “x” as part of the input?

It is not converted, and therefore does not add to the total.

What numbers can be printed by your program?

0, 1, 2, and 3.

Show the output.



How do you get your program to print -1 to the screen? (Hint: This occurs when the program encounters an end-of-file before any input.)

It does not appear that this can be accomplished within the program as it was given. Instead, I have modified the code with an additional line: “cnt = EOF;” before the printf.

Show that you can do this.

#include <stdio.h>

int main(void)

{

int a1,a2,a3,cnt;

printf(“Input three integers: “);

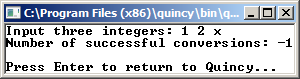
cnt = scanf(“%d%d%d”, &a1, &a2, &a3);

cnt = EOF; /\* additional code \*/

printf(“Number of successful conversions: %d\n”, cnt);

return 0;

}



2) Show the output produced by each of the following program fragments. Assume that i, j, and k are variables of type int.

a)

i=7; j=8;

i \*= j+1;

printf(”%d %d”,i,j);

i = 7×(8+1) = 63

j = 8

So the output should be “63 8”

b)

i=j=k=1;

i += j += k;

printf(”%d %d %d”,i,j,k);

k = 1

j = 1+1 = 2

i = 1+2 = 3

So the output should be “3 2 1”

c)

i=1; j=2; k=3;

i -= j -= k;

printf(”%d %d %d”,i,j,k);

k = 3

j = 2-3 = -1

i = 1-(-1) = 2

So the output should be “2 -1 3”

d)

i=2; j=1; k=0;

i \*= j \*= k;

printf(”%d %d %d”,i,j,k);

k = 0

j = 1×0 = 0

i = 2×0 = 0

So the output should be “0 0 0”

3) Show the output produced by each of the following program fragments. Assume that i and j are variables of type int.

a)

i=5;

j = ++i \* 3 – 2;

printf(”%d %d”, i,j);

**Order of operation:** Increment i, then multiply i and 3, then subtract 2, then set j to the resulting value.

**Output:** “6 16”

b)

i=5;

j = 3 - 2 \* i++;

printf(”%d %d”, i,j);

**Order of operation:** Multiply 3 and i, then subtract the result from 3, then increment i, then set j to the resulting value.

**Output:** “6 -7”

c)

i=7;

j = 3 \* i-- + 2;

printf(”%d %d”, i,j);

**Order of operation:** Multiply 3 and i, then add two, then decrement i, then set j to the resulting value.

**Output:** “6 23”

d)

i=7;

j = 3 + --i \* 2;

printf(”%d %d”, i,j);

**Order of operation:** Decrement i, then multiply i and 2, then add three, then set j to the resulting value.

**Output:** “6 15”

Submit your code and a screenshot of your code execution. Do not forget to use comments and the comment header as described in class.