CSC 10A

Accelerated Introduction to Programming Logic

Lab

20 Points

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Arrays

The purpose of this assignment is to give you practice in evaluating code that uses arrays, declaring arrays, initializing the values in arrays, and learning to use arrays to solve basic problems.

Requirements

Answer the questions below for credit. (Show your work)

Question #1 (2 points): Give the value of a[3] at the end of the code block:

```
int size = 5
int a[size]
int i = 0
for (i = 0 to size-1 STEP + 1){
    a[i] = i + 1
}
```

i	a[i]
0	1
1	2
2	3
3	4
4	5

What is the value of a[3] at the end?

a[3] = 4

Question #2 (2 points): Declare an integer array named "b" with a size of 10 elements. Using a loop (*for* or *while*), initialize the array by making every element of the array equal to -1:

int size = 10

int b[size]

int i = 0

for (int i = 0 to (b - 1) step +1){

   b[i] = b[i] ÷ -b

}

Question #3 (2 points): Give the value of b[2] at the end of the code block:

int size = 5

int a[size]

int b[size]

int i = 0

for (i = 0 to size-1 STEP + 1){

    a[i] = i * i

    b[i] = a[i] – i

}

i	a[i]	b[i]
4	16	12
3	9	6
2	4	2
1	1	0
0	0	0

What is the value of b[2] at the end?

b[2] = 2

Question #4 (2 points): Give the value of c[4] at the end of the code block:

int size = 5

int c[size]

int i = 0

for (i = 0 to size-1 STEP + 1){

    c[i] = size -i

}

i	c[i]
4	1

3	2
2	3
1	4
0	5

What is the value of c[4] at the end?

c[4] = 1

Question #5 (3 points): Give the value of a[5] at the end of the code block:

int size = 6

int t = 0

int a[size]

int i = 0

for (i = 0 to size-1 STEP + 1){

   t = t + i

   a[i] = (i << 1) + t

}

What is the value of a[5] at the end?

a[5] = 25

Question #6 (4 points): Give the values of the array (e.g. 1, 2, 3, …, 6) for the following array at the end of the code block:

int a[] = {6, 5, 4, 3, 2, 1}

int size = 6

```
int i = 0

for (i = 0 to size-1 STEP + 1){

    int val = a[(size - i) - 1]

    int val2 = a[i]

    a[(size – i) – 1] = val2

    a[i] = val

}
```

What are the values of the array at the end of the loop? (Write below)

a[] = {1,2,3,4,5,6}

Question #7 (5 points): Declare an integer array named "a" with a size of 10 elements. Using a loop (*for* or *while*) with the "i" variable counting from 0 to size – 1, initialize the elements of the array with values going from size – 1 to 0 (e.g. 9,8,7,6,5,4,3,2,1,0). In other words, make the array be in OPPOSITE order of the loop counter:

```
int size = 10

int a[size]

int i = 0

for (i = 0 to size -1 STEP +1){

    int val = a[(size - i) - 1]

    int val2 = a[i]

    a[(size – i) – 1] = val2

    a[i] = val

}
```