CIS 36A – 7th In Class / Take Home Assignment – **10 Points**
Student Name **Ka Chi Lau** **Student ID** **10819338** **Point Total**

Pages 90 – 99 ***Java Programming A Comprehensive Introduction***

Section 1: Define / Answer

Explain the difference between a **for** loop and a **while loop**-

For has initializer while while loop doesn't have it

What is the basic difference between a **do-while** loop and [**or/while]** loops?

Do while would run the problem before the comparison while the while loop would run the comparison before looping

How do **break** statements work in relation to **for, while,** and **do-while** loops?

Break would stop the loop

Describe how an infinite **for** loop operates.

Once it operate, it would keep looping without stop

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Programming Assignments

1st Task: Pg. 115 #15 Java Programming *A Comprehensive Guide*

There are 6 different programs + output required for this assignment.

Please Have 6 Different snipping photos with programs and outputs.

Hint** The programs should not be very long for each answer.

The Class **ContDemo** in Chapter 3 shows one way to use a **for** loop to **print the even numbers 0 to 100.** Write programs that print the same output as that program, but do it in the following ways:

A. Using a **for** loop that increments the loop control variable by 2 each iteration

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```
1
2   package javaapplication4;
3
4   import java.util.Scanner;
5
6   public class JavaApplication4 {
7
8
9       public static void main(String[] args) {
10
11          int count;
12
13          for(count = 0; count <= 100; count++) {
14
15              if(count % 2 == 0) {
16                  System.out.println(count);
17              }
18          }
19
20      }
21  }
22
```

```
run:
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
```

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```
50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96
98
100
BUILD SUCCESSFUL (total time: 1 second)
```

B. Using a **for** loop whose loop control variable goes from 0 to 50.

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```
1
2   package javaapplication4;
3
4   import java.util.Scanner;
5
6   public class JavaApplication4 {
7
8
9       public static void main(String[] args) {
10
11          int count;
12
13          for(count = 0; count <= 50; count++) {
14
15              if(count % 2 == 0) {
16                  System.out.println(count);
17              }
18          }
19
20      }
21  }
22
```

Output - JavaApplication2 (run)

```
run:
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
```

C. Using a **for** loop whose loop control variable goes from 100 down to 0.

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```
1
2   package javaapplication4;
3
4   import java.util.Scanner;
5
6   public class JavaApplication4 {
7
8
9       public static void main(String[] args) {
10
11          int count;
12
13          for(count = 100; count >= 0; count--){
14              if(count % 2 == 0){
15                  System.out.println(count);
16              }
17          }
18
19      }
20  }
21
```

```
run:
100
98
96
94
92
90
88
86
84
82
80
78
76
74
72
70
68
66
64
62
60
58
56
54
52
50
```

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```
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
```

D. Using an infinite **for** loop with no conditional expression and exiting the loop with a **break** statement.

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```
1
2  package javaapplication4;
3
4  import java.util.Scanner;
5
6  public class JavaApplication4 {
7
8
9      public static void main(String[] args) {
10
11         int count;
12
13         count = 0;
14         for(;;){
15
16             if(count % 2 == 0){
17             System.out.println(count);
18             }
19
20             if(count == 100){
21             break;
22             }
23             count++;
24         }
25
26     }
27 }
28
```

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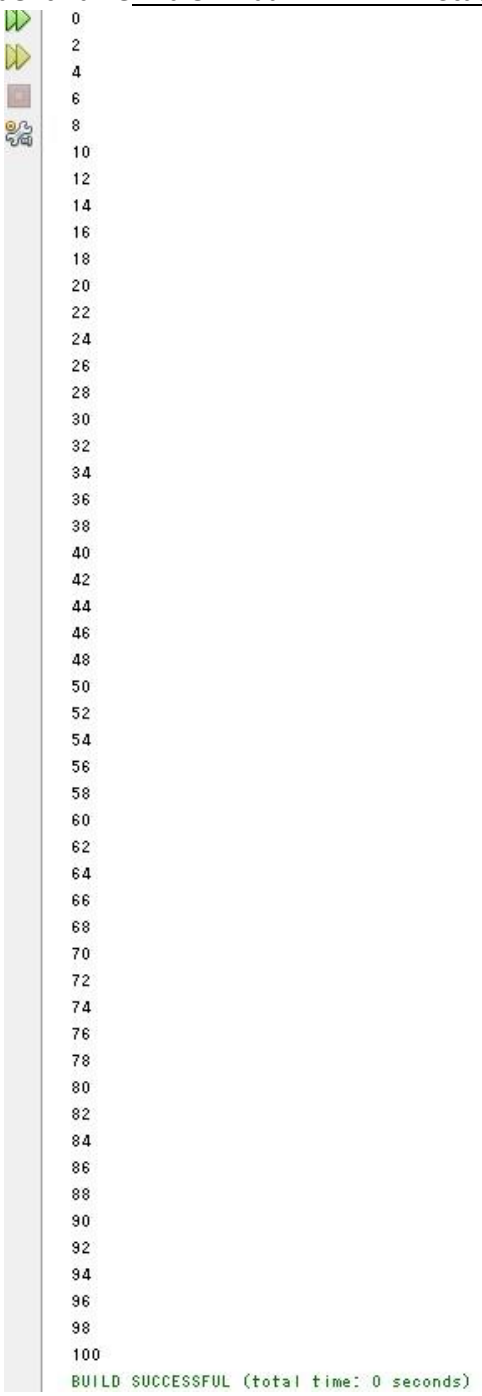

E. Using a **while** loop.

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```
1
2  package javaapplication4;
3
4  import java.util.Scanner;
5
6  public class JavaApplication4 {
7
8
9      public static void main(String[] args) {
10
11         int count;
12
13         count = 0;
14         while(count <= 100){
15             if(count % 2 == 0){
16                 System.out.println(count);
17             }
18             count++;
19         }
20
21     }
22 }
23
```

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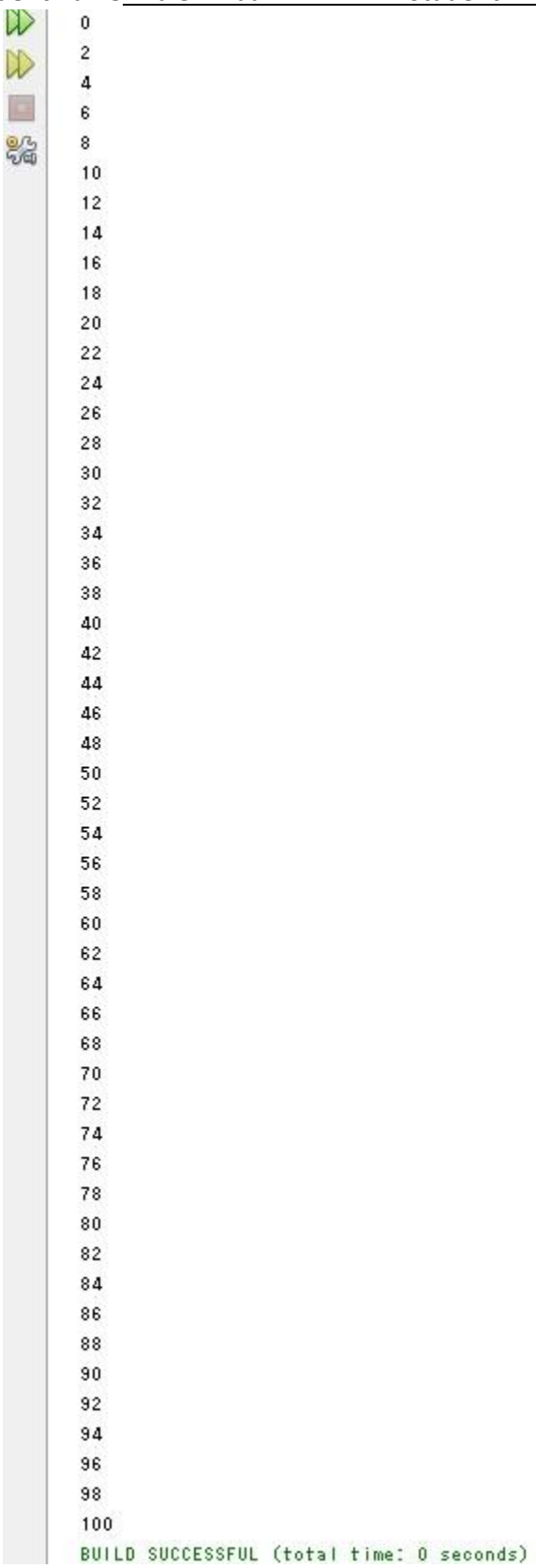

F. Using a **do-while** loop.

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```
1
2   package javaapplication4;
3
4   import java.util.Scanner;
5
6   public class JavaApplication4 {
7
8
9       public static void main(String[] args) {
10
11          int count;
12
13          count = 0;
14          do {
15              if(count % 2 == 0) {
16                  System.out.println(count);
17              }
18              count++;
19
20          } while(count <= 100);
21
22      }
23  }
24
```

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There should be 6 different Snipping photos. One photo for each program A – F.

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2nd Task- Change Calculator

Write a program that directs a cashier how to give change. The program has two inputs: The amount due and the amount received from the customer. Display the dollars, quarters, dimes, nickels, and pennies that the customer should receive.

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```
1
2   package javaapplication4;
3
4   import java.util.Scanner;
5
6   public class JavaApplication4 {
7
8
9       public static void main(String[] args) {
10
11          //int count;
12
13          Scanner input = new Scanner(System.in);
14
15          Double amountdue, recevie, returnx, cent;
16
17          int dollars, quarters, dimes,
18                  nickels, pennies;
19
20          System.out.print("Enter the cost of the item: ");
21          amountdue = input.nextDouble();
22          if(amountdue < 0) {
23              System.out.print("Invalid input");
24          }
25
26          System.out.print("Enter the money you recevie: ");
27          recevie = input.nextDouble();
28          if(recevie < 0) {
29              System.out.print("Invalid input");
30          }
31
32          returnx = recevie - amountdue;
33          if(returnx < 0) {
34              System.out.print("Ask more money from customer");
35          }
36
37          cent = returnx % 1;
38          dollars = (int) (returnx - cent);
39
40          quarters = 0;
41          quarters = (int) (cent / 0.25);
42          cent -= quarters * 0.25;
43
```

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```
43
44          dimes = 0;
45          dimes = (int) (cent / 0.1);
46          cent -= dimes * 0.1;
47
48          nickels = 0;
49          nickels = (int) (cent / 0.05);
50          cent -= nickels * 0.05;
51
52          pennies = 0;
53          pennies = (int) (cent / 0.01);
54          cent -= pennies * 0.01;
55
56          System.out.print("Dollars: " + dollars + " Quarters: " + quarters
57                  + " Dimes: " + dimes + " Nickels: " + nickels + " Pennies: "
58                  + pennies);
59
60
61      }
62  }
63
```

Output - JavaApplication2 (run)

```
run:
Enter the cost of the item: 10.50
Enter the money you recevie: 20
Dollars: 9 Quarters: 2 Dimes: 0 Nickels: 0 Pennies: 0BUILD SUCCESSFUL (total time: 11 seconds)
```