

### Question 01 :

#### Sentinel-controlled loop:

```
public class Question01Sentinelcontrolledloop {
    public static void main(String[] args) {
        /*
        START
            while loop: set sentinel condition: studentCounter != 10
            -create a scanner to obtain each student's result from
command window:
            - if result == 1, pass + 1, if result == 0, failure + 1
            - after entering student result, studentCounter + 1
            -when studentCounter == 10, exit the loop

        Print result:
            -print all passes and failures
            -if passes > 8, print Bonus to instructor!
        END

        * */

        Scanner scanner = new Scanner(System.in);
        // create a scanner
        int passes = 0;
        int failures = 0;
        int studentCounter = 1;
        //initializing variables
        System.out.println("Please enter 10 students' Result");

        while (studentCounter != 11) {
            System.out.println("Enter result (1 = pass, 2 = fail. -1 =
exit system): Please enter Student :" + studentCounter + " result :");
            int result = scanner.nextInt();

            if (result == 1) {
                passes += 1;
            }
            if (result == 0) {
                failures += 1;
            }
            studentCounter += 1;

        }

        System.out.printf("Passed: %d\nFailed: %d\n", passes,
failures);

        if (passes > 8) {
            System.out.println("Bonus to instructor!");
        } else {
            System.out.println("No Bonus");
        }

    }
}
```

for loop:

```
public class Question01Forloop {
    public static void main(String[] args) {
        /*
        START
        For loop, condition: studentCounter <= 10
        -create a scanner to obtain each student's result from
command window:
        - if result == 1, pass + 1, if result == 0, failure + 1
        - after entering student result, studentCounter + 1
        -when studentCounter == 10, exit the loop

        Print result:
        -print all passes and failures
        -if passes > 8, print Bonus to instructor!
        END
        * */
        Scanner scanner = new Scanner(System.in);
        // create a scanner
        int passes = 0;
        int failures = 0;

        //initializing variables

        for (int studentCounter = 1; studentCounter <= 10;
studentCounter++) {
            System.out.println("Enter result (1 = pass, 2 = fail): ");
            int result = scanner.nextInt();
            if (result == 1) {
                passes += 1;
            }
            if (result == 0) {
                failures += 1;
            }
        }
        System.out.printf("Passed: %d\nFailed: %d\n",passes,failures);

        if (passes > 8){
            System.out.println("Bonus to instructor!");
        }
        else {
            System.out.println("No Bonus");
        }
    }
}
```

## Question 02

While loop:

```
public class FindtheLargestNumber_whileLoop {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        // create a scanner to obtain units of each saleperson from
        command window

        int counter = 1;
        int largest = 0;
        int number;
        // initialing variables
        //while loop
        while (counter <= 10){
            System.out.println("Enter SalePerson: " + counter + "'s
units: ");
            int currentNumber = input.nextInt();
            // obtain current units
            number = currentNumber;
            if (number > largest){
                largest = number;
            }
            // compare current units and largest units, save latest
largest unit in variable [largest]
            counter += 1;
            //increment studentCounter so loop eventually terminates
        }

        System.out.printf("the largest units is %d", largest);

    }
}
```

output :

```

/Users/nancymacbook/Desktop/Programming_I/Assignment04/out/production/Assignment04 FindtheLargestNumber_whileLoop
Enter SalePerson: 1's units:
13
Enter SalePerson: 2's units:
09
Enter SalePerson: 3's units:
11
Enter SalePerson: 4's units:
34
Enter SalePerson: 5's units:
56
Enter SalePerson: 6's units:
4
Enter SalePerson: 7's units:
3
Enter SalePerson: 8's units:
24
Enter SalePerson: 9's units:
67
Enter SalePerson: 10's units:
45
the largest units is 67
Process finished with exit code 0
```

For loop:

```
public class FindtheLargestNumber_ForLoop {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        // create a scanner to obtain units of each saleperson from
        command window

        int largest = 0;

        // initialing variables
        // for loop
        for (int counter = 1; counter <= 10; counter++) {
            System.out.println("Enter SalePerson: " + counter + "'s
units: ");

            int number = input.nextInt();
            if (number > largest) {
                largest = number;
            }

        }
        System.out.printf("the largest units is %d", largest);

    }
}
```

output:

```
C:\Users\hancy\OneDrive\Desktop\Programming_1\Assignment04\04_07\production\Assignment04_FindtheLargestNumber_ForLoop
Enter SalePerson: 1's units:
45
Enter SalePerson: 2's units:
56
Enter SalePerson: 3's units:
67
Enter SalePerson: 4's units:
78
Enter SalePerson: 5's units:
89
Enter SalePerson: 6's units:
12
Enter SalePerson: 7's units:
23
Enter SalePerson: 8's units:
34
Enter SalePerson: 9's units:
31
Enter SalePerson: 10's units:
64
the largest units is 89
```