ITS1010 - Programming Fundamentals – Assignment 05
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1.import java.util.*;
class demo13{
public static void main(String[]args){
Scanner scan = new Scanner(System.in);
for(int i=0;i<10;i++){
System.out.println("Hello World ");}

}
}

---

2. import java.util.*;
class demo13{
public static void main(String[]args){
Scanner scan = new Scanner(System.in);
for(int i=1;i<101;i++){
System.out.println(i);}
}
}

---

3.import java.util.*;
class demo13{
public static void main(String[]args){
Scanner scan = new Scanner(System.in);
for(int i=100;i>0;i--){
System.out.println(i);}
}
}

---

4. import java.util.*;
class demo13{
public static void main(String[]args){
Scanner scan = new Scanner(System.in);
for(int i=1;i<101;i++){
if (i%2==0){
System.out.println(i);
}
}
}
}

---

5.
```
import java.util.*;
        class demo13{
            public static void main(String[]args){
                Random r = new Random();
                int x;
                for ( int i=0;i<10;i++){
                                x = r.nextInt(100);
                                System.out.println(x);


                                }
                        }
            }
```
---
6.
```
 import java.util.*;
   class demo13{
        public static void main(String[]args){
                Random r = new Random();
                int x;
        while(true){
                x = r.nextInt(100);
         if(x%2==1){
                System.out.println(x);
                }
        }
   }
}
```
---
7.
```
   import java.util.*;
        class demo13{
             public static void main(String[]args){
                char x;
        for(x ='A';x<='Z';x++){

                System.out.println(x+" ");
                }
        }
 }
```
---
8.
```
 import java.util.*;
  class demo13{
   public static void main(String args[]){
         Scanner scan =new Scanner(System.in);

        for(int i =1 ;i <=100; i++){
```

```
            int count = 0;

            for(int j = 1; j<= i; j++){

                if( i% j ==0 ){
                count ++;
                }
                  }
                if(count ==2){
                 System.out.println(i);    }
              }
            }
        }
```

---

9.
```
import java.util.*;
    class demo13{
      public static void main(String args[]){
            Scanner input = new Scanner(System.in);

            System.out.print("Input a number: ");
            int num = input.nextInt();

            System.out.print("Factorial of "+num +"! =");
      for (int i = num; 5 >num &&i>=1; i--)     {
            System.out.print(i + "*");
                  }
            }
     }
```

---

10.
```
import java.util.*;
      class demo13{
          public static void main(String args[]){
            Scanner input = new Scanner(System.in);

      for (int j =1 ; j<=10; j++){
            int num = input.nextInt();
            System.out.print("Factorial of "+num +"! =");

      for (int i = j;i>=1; i--)    {
            System.out.print(i + "*");
                  }
            }
      }
}
```

---

11.
```
import java.util.*;
 class demo13{
        public static void main(String args[]){
                Scanner input = new Scanner(System.in);

                int count =0;

        for (int j =0 ; j<50; j++){
                        System.out.print("input number   :");
                 int num = input.nextInt();

        if(num>100){
                 count =count+1; }
                }
                System.out.print("count is"+count);
                }
        }
```

---

12.
```
import java.util.*;
      class demo13{
        public static void main(String args[]){
                Scanner input = new Scanner(System.in);
                    double total =0;
                    double avg =0;
                     int max =0;
                     int min =100;
        for (int j =0 ; j<10; j++){
                        System.out.print("input marks   :");
           int marks = input.nextInt();
         if(marks>max){
                max = marks;   }

        if      (marks<min){
                 min =marks;    }
              total =total+marks;
               avg =total/10;       }
                    System.out.println("total is     :"+total);
                    System.out.println("averege is    :"+avg);
                     System.out.println("max is     :"+max);
                    System.out.print("min is    :"+min);

                }
        }
```

---

13. import java.util.*;
```
 class demo13{
  public static void main(String args[]){
        Scanner scan =new Scanner(System.in);

        double total = 0;
        double avg = 0;
        double total1 = 0;
        double avg1 = 0;

        for(int i = 1;i<=5; ++i){

            System.out.print(" input height      :");
               double height =scan.nextDouble();

            System.out.print(" input weight      :");
               double weight =scan.nextDouble();

           total = total +height;
               total1 = total1 + weight;
               avg =total/5;
               avg1 =total1/5;
               if(height>0 && weight>0){
               }
                System.out.println("  height  total      :  "+total);
               System.out.println("  height  averege    :  "+avg);
               System.out.println("  weight  total      :  "+total1);
               System.out.println("  weight  averege    :  "+avg1);}
         }
}
```
---
14.import java.util.*;
```
       class demo13{
           public static void main(String args[]){
               Scanner scan = new Scanner(System.in);
               System.out.println("Input number of Employees:");
               int emp =scan.nextInt();
               int total =0;
                int a = 0;
                int b = 0;
                int  c = 0;
                int  d = 0;
                int   e= 0;
                int   f = 0;
                int    g= 0;
```

```
        int    h = 0;
        int    i = 0;
        int  k =0;

for(int j=1;j<=emp;j++){

        System.out.println("Input salary   : ") ;
        int  salary =scan.nextInt ();
              total += salary;}

               a = total/5000 ;
               System.out.println("R5000 notes  :"+a) ;
               total %=5000;

               b = total/1000 ;
               System.out.println("R1000 notes  :"+b) ;
               total %=1000;

               c = total/500 ;
               System.out.println("R500 notes  :"+c) ;
               total %=500;

               d = total/100   ;
               System.out.println("R100 notes  :"+d) ;
               total %=100;

               e = total/50    ;
               System.out.println("R50 notes  :"+e) ;
                total %=50;

               f = total/20    ;
               System.out.println("R20 notes  :"+f) ;
               total %=20;

               g = total/10   ;
               System.out.println("R10 notes  :"+g) ;
               total %=10;
               h = total/5     ;
               System.out.println("R5 notes  :"+h) ;
               total %=5;

               i = total/2     ;
               System.out.println("R2 notes  :"+i) ;
               total %=2;
```

```
                k = total/1     ;
                System.out.println("R1 notes  :"+k) ;
                total %=1;
            }

        }
```

---

15. C Prints: 8 2

---

16. 0
    1
    2
    3
    4
    5
    6
    7
    8
    9
    0
    2
    4
    6
    8
    1
    3
    5
    7
    9
    0
    1
    2
    3
    4
    5
    6
    7
    8
    9
    0
    1
    2
    3
    4

5
6
7
8
9
1
2
3
4
5
6
7
8
9
10
1
2
3
4
5
6
7
8
9
10
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
1

2
3
4
5
6
7
8
9
10
0
1
2
3
4
5
6
7
8
9
10
0
1
2
3
4
5
6
7
8
9

17. B. for(int i=0;i<10;i++){}
for(int i=0;i<10;i++){}

D. {int i=0;}
for(int i=0;i<10;i++){}

---

18. D. Error at line 8

---

19. E. Compile Error

---

20. A. for(int i=100;i<110;i++){
System.out.println(i);
}
C. for(int i=0;i<10;i++){
int k=100;
System.out.println(i+k);
}
E. int k=100;
for(int i=0;i<10;i++){
System.out.println(k);
k++;
}

---

21. D. Compiler Error: variable d might not have been initialized.

---

22. D. Prints 0 0

---

23. a. infinetive loop

b. i : 0
i : 1
i : 2
i : 3
i : 4
i : 5
i : 6
i : 7
i : 8
i : 9

c. i : 0
i : 2
i : 4
i : 6
i : 8

d. ch : I
ch : J
ch : K
ch : L
ch : M
ch : N
ch : O
ch : P

ch : Q
ch : R
ch : S
ch : T
ch : U
ch : V
ch : W
ch : X
ch : Y
ch : Z

e. 0 10
1 9
2 8
3 7
4 6
5 5

f. 0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

26
7
28
29
30
31
32
! 33
" 34
# 35
$ 36
% 37
& 38
' 39
( 40
) 41
* 42
+ 43
, 44
- 45
. 46
/ 47
0 48
1 49
2 50
3 51
4 52
5 53
6 54
7 55
8 56
9 57
: 58
; 59
< 60
= 61
> 62
? 63
@ 64
A 65
B 66
C 67
D 68
E 69
F 70

G 71
H 72
I 73
J 74
K 75
L 76
M 77
N 78
O 79
P 80
Q 81
R 82
S 83
T 84
U 85
V 86
W 87
X 88
Y 89
Z 90
[ 91
\ 92
] 93
^ 94
_ 95
` 96
a 97
b 98
c 99
d 100
e 101
f 102
g 103
h 104
i 105
j 106
k 107
l 108
m 109
n 110
o 111
p 112
q 113
r 114
s 115

t 116
u 117
v 118
w 119
x 120
y 121
z 122
{ 123
| 124
} 125
~ 126
127

h. error: variable x might not have been initialized

---

24.A. 1 2 3
B. 2 3
C. 3
D. 4 1 2 3
E. 4 1 2 3
F. 4 1 2 3

---

25. A. if(x>0){a=0;}
B. a=0;
E. if(true){a=0;}
G. if(y>0){a=0;}else {a=-1;}
H. a=z>0?0:-1;

---

26. A. 1
B. 2 3 1
C. 3 1
D. 4
E. 4
F. 4

---

27. B. The code will fail to compile, owing to an illegal
conditional expression in the if statement.

---

28. B. case b: //
D. case e:
H. case (char)66:

---

29. A. Line 1
B. Line 2
C. Line 3
D. Line 4

E. Line 5
F. Line 6
H. Line 8

---

30. A. for(int i=0;i<10;i++){}
C. for(int i=0;;i++){}
D. for(int i=0;i<10;){}
E. for(double d=0;d<10;d++){}
F. for(;;){}
G. for(byte b=0;b<10;b++){}
J. for(int i=0;;){}
K. for(char ch='A'; ch>92;ch++){}

---

31. B. int x=65;
C. int x=65536;
D. byte x=65;
E. short x=66 ;

---

32. FOR

```
        import java.util.*;
            class demo13{
                public static void main(String[]args){
                 Scanner scan = new Scanner(System.in);
        for(int i=0;i<10;i++){
                 System.out.println("Hello World ");}

    }
}
```

WHILE

```
        import java.util.*;
            class demo12{
                public static void main(String[]args){
                 Scanner scan = new Scanner(System.in);
                int count = 0;
        while(true){
                 System.out.println("Hello World ");
                    count = 1+ count;
         If(count ==10){
      break;
            }
        }
    }
}
```

---

33.
```
import java.util.*;
        class demo12{
            public static void main(String[]args){
                Scanner scan = new Scanner(System.in);
                  int num =1;
        while(true){
                 System.out.println(num);
                   num = 1+ num;
         if(num ==101){
                 break;
         }
        }
    }
}
```
---
34.
```
import java.util.*;
         class demo12{
                public static void main(String[]args){
                 Scanner scan = new Scanner(System.in);
                   int i = 2;
        while (i<=100 ){
                    System.out.println(i);
                        i ++;
                    }
               }
        }
```
---
35.
```
import java.util.*;
 class demo13{
  public static void main(String args[]){
         Scanner scan =new Scanner(System.in);
          int i =1 ;
        while(i <=100){
                  int count = 0;
                  int j = 1;
        while( j<= i){

                if( i% j ==0 ){
                        count ++;
                }
                  j++;
                          }
                if(count ==2){
                        System.out.println(i);
                           }i++;
```

```
            }
        }
    }
```

---

36.
```
import java.util.*;
    class demo12{
        public static void main(String args[]){
        Scanner scan = new Scanner(System.in);

        System.out.print("Input a number: ");
            int num = scan.nextInt();
            int total = 0;

        while(num != 0) {
                int remain = num % 10;
                total += remain;
                num /= 10;
        }
            System.out.println("Digit total: " + total);
    }
}
```

---

37.
```
import java.util.*;
     class demo12{
        public static void main(String[] args){
        Scanner scan = new Scanner(System.in);
            int  r = 0;
         System.out.println("input number  ");
         int num =scan.nextInt();

      while(num !=0) {
            int remain = num % 10;
                r = r * 10 + remain;
                num = num/10;
      }
        System.out.println(r);
  }
}
```

---

38.
```
import java.util.*;
class demo12{
    public static void main(String args[]){
        Scanner input = new Scanner(System.in);

        System.out.print("Input a number: ");
```

```
            int num = input.nextInt();

            int temp = num;
            int temp2 = num;
            int count = 0;
            int result = 0;

            while(temp != 0) {
                  temp /= 10;
                  count++;
            }

            while(temp2 != 0) {
                  int remain = temp2 % 10;      //1
                  int t = 1;
                  for (int i = 0; i < count; i++) {
                        t *= remain;
                  }
                  result +=  t;
                  t = 1;

                  temp2 /= 10;
            }
            if(num == result) {
                  System.out.println(num + " is a armstrong number");
            } else {
                  System.out.println(num + " is not a armstrong number");
            }
      }
}
```

---

```
39.  import java.util.*;
  class demo12{
   public static void main(String args[]){
         Scanner scan =new Scanner(System.in);
               int i=1, gcd =1;
              System.out.print("input number1     :");
               int num1 =scan.nextInt();

              System.out.print("input number2     :");
               int num2 =scan.nextInt();

                while(num1>=i && num2>=i){

                   if( num1 %i ==0 && num2 %i ==0){
```

```
                    gcd =i;
                    }
                    i++;
                }
                System.out.print( "fist number " + num1 + "scend number " +num2+ "  gdc
" +gcd);
            }
  }
```

---

```
40. import java.util.*;
    class demo12{
        public static void main(String[] args){
        Scanner scan = new Scanner(System.in);

         int total = 0;
         int i =1;

   while(i<1000){
            if( i % 3 == 0  || i % 5==0){
                total += i;
                }
       i++;

   }

System.out.println("total is "+total);

    }
}
```

---

```
41. import java.util.*;
class demo12{
        public static void main(String args[]){
                Scanner input = new Scanner(System.in);

                System.out.print("Input a number: ");
                int num = input.nextInt();

                int count = 0;

                while(num != 0) {
                        num = num / 10;
                        count++;
                }
                System.out.println("Digit count: " + count);
```

```
    }
}
```

---

42.
```
import java.util.*;
class demo12{

	public static void main(String args[]){
		Scanner input = new Scanner(System.in);

		System.out.print("Input a number: ");
		int num = input.nextInt();	//256

		int temp = num;

		int newValue = 0;

		while(num != 0) {
			int remain = num % 10;
			newValue = (newValue*10) + remain;
			num /= 10;
		}

		if(temp == newValue) {
			System.out.println(temp + " is a palindrome");
		} else {
			System.out.println(temp + " is not a palindrome");
		}

	}
}
```

---

43.
```
import java.util.*;
class demo13{
	public static void main(String args[]){
		int num =1;

		while(true){
			if(num %1 == 0    && num %2 == 0 && num %3 == 0 &&
 num %4==   0 && num %5 == 0 && num %6 == 0 && num %7 == 0 &&
 num %8 == 0 && num %9 == 0 && num %10 == 0 &&  num %11 == 0 &&
 num %12 == 0 && num %13 == 0 && num %14 == 0 && num %15== 0 &&
num %16 == 0 && num %17 == 0 && num %18 == 0 && num %19== 0 && num %
20==0 ){
				System.out.println(num);
				break;}
```

```
                    num++;
                }
            }
        }
```

---

```
44. import java.util.*;
    class demo13{
     public static void main(String args[]){
     Scanner scan =new Scanner(System.in);
     int i=1, gcd =1,euler =1;
          System.out.print("input number1     :");
           int num1 =scan.nextInt();

          System.out.print("input number2     :");
           int num2 =scan.nextInt();

            while(num1>=i && num2>=i){


                    if( num1 %i ==0 && num2 %i ==0){
                        gcd =i;

                        euler =(num1*num2)/gcd;

                }
                i++;
                }

            System.out.print( "fist number " + num1 + "scend number " +num2+ "  euler
" +euler);
            }
        }
```

---

45.

---

```
46.  import java.util.*;
 class demo13{
        public static void main(String args[]){
            Scanner scan =new Scanner(System.in);
              int i = 1;
              int x =0;
              double total = 1;
              int count =0;

          System.out.print("input the number of customer  :");
```

```
            int cn=scan.nextInt();

        while(i< cn){
                System.out.println("Customer no:"+i);
                System.out.print("input price    :");
               int price = scan.nextInt();

                if(price <=50000){

                        count++;
                }
                if(price>5000000){
                        total += price;

                        x++;
                        }
                        i++;
                }

                total=((double)x/(double)cn)*100.0;
        System.out.println("No of customer (price<50000): "+count);
        System.out.println("Percentage of all inquiries(price>5000000): ;"+total+"%");
          }
        }
```

---

47.
```
import java.util.* ;
  class demo13{
    public static void main(String[]args){
      Scanner scan = new Scanner(System.in);
          System.out.print("Input number: ");
           int num = scan.nextInt();
           int count=0;
            int count2=0;
 while(num!=(-1)){
        if(num<1000){
        count++;
}
        if(num>1000){
  count2++;
}
        System.out.print("Input number: ");
         num = scan.nextInt();
}
System.out.println("no less than 1000 : "+count);
System.out.print("no more than 1000 : "+count2);
```

}}

---

48. B. int y = 11;

---

49.
```
import java.util.* ;
        class demo13{public static void main(String[]args){
            Scanner scan = new Scanner(System.in);
                System.out.print("Subject marks : ");
                  int sub = scan.nextInt();
                  int count=0;
                   int total=0;
                   int min,max;
                   min=max=sub;
      while(sub!=(-1)){
                total+=sub;
        if(sub>max){
                max=sub;
                }
        if(sub<min){
                min=sub;
                }
        count++;
                System.out.print("Subject marks : ");
           sub = scan.nextInt();
        }
          double avg =(double)total/(double)count;
  System.out.println("Number of students : "+count);
  System.out.println("Maximum is a : "+max);
  System.out.println("Minimum  is a : "+min);
 System.out.print("Average is a: "+avg);
  }
}
```

---

50.
```
  System.out.println(a);//Line 24
      System.out.println(b);//Line 25

          have    error: variable a might not have been initialized
```

---

51.E. The code will compile without error and will print 3 when
run.

---

52. compile error

---

53. B. 012

---

54. C. If the break is replaced by continue, the program will
print 4, 3 when run.

---

55. B. { continue; } is a valid statement block.

E. The break statement can only be used in a loop (while, do-while, or for) or a switch statement.

---

56. D. A B 2 A B 2 A B 2 A

---

57. A. i=1, j=0
D. i=2, j=1

---

58. E. Prints A

---

59. C. Only 5 is printed

---

60. A. 1 0 1 1 2 2 2 3 3 4

---

61.
```
import java.util.* ;
class demo13{

public static void main(String[]args){
for(int i=1;i<=10;i++){
        for(int j=1;j<=i;j++){
                System.out.print("*");
                }
                System.out.print("\n");
        }
}}
```

---

62.
```
import java.util.* ;
class demo13{

public static void main(String[]args){
for(int i=1;i<=10;i++){
        for(int j=1;j<=i;j++){
                System.out.print("*");
                }
                System.out.print("\n");
        }
}}
```

---

63.
```
import java.util.*;
class demo12{
  public static void main(String args[]){
   for(int i=0;i<5;i++){
   for(int j=0;j<5;j++){
        System.out.println(i+" "+j);
        }
  }

    for(int i=0;i<5;i++){
   for(int j=0;j<5;j++){
        System.out.println(j+" "+i);
        }
  }

     for(int i=5;i>0;i--){
    for(int j=0;j<5;j++){
        System.out.println(i+" "+j);
        }
  }

     for(int i=5;i>0;i--){
    for(int j=5;j>0;j--){
        System.out.println(i+" "+j);
        }
  }
}}
```