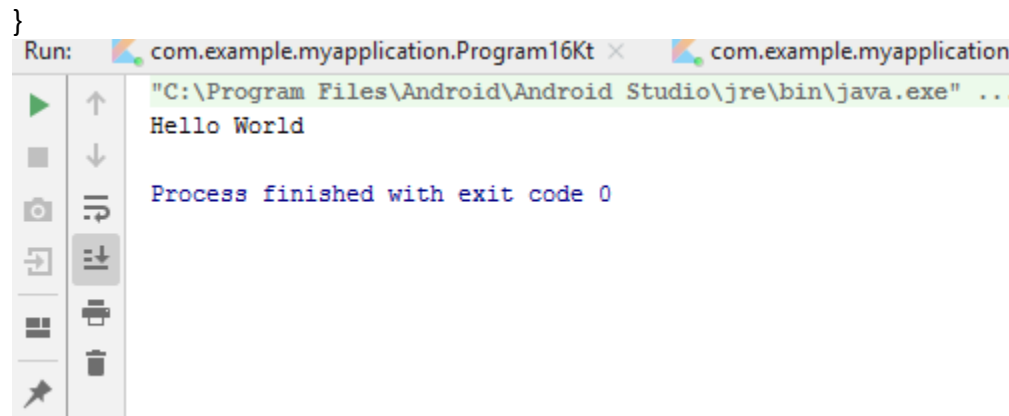


1**Write a Kotlin program to display a welcome message to the user.****Code**

```
fun main(args:Array<String>)  
{  
    println("Hello World")  
}
```

Outout**2****Write a Kotlin program to store your enrollment number, name & course in different variables and display on the screen.****Code**

```
import java.util.Scanner  
fun main(args:Array<String>)  
{  
    println("Enter Enrollment_Number")  
    val sc = Scanner(System.`in`)  
    val Enrollment_Number = sc.nextLine()  
  
    println("Enter Name:")  
    val Name = sc.nextLine()  
  
    println("Enter Course:")  
    val Course = sc.nextLine()  
  
    println("Your Enrollment_Number Is : $Enrollment_Number")  
    println("Your Name Is : $Name")  
    println("Your Course Is : $Course")  
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ..
Enter Enrollment_Number
IU2253000059
Enter Name:
Bhvaik
Enter Course:
MCA
Your Enrollment_Number Is : IU2253000059
Your Name Is : Bhvaik
Your Course Is: MCA
```

3

Write a Kotlin program to accept enrollment number, student name and marks of 5 subjects, from the user. Calculate the Total and Percentage and display all the details of the student on the screen.

Code

```
package com.example.myapplication
```

```
import java.util.Scanner
```

```
fun main(args:Array<String>)
```

```
{
```

```
    println("Enter Enrollment_Number:")
```

```
    val sc = Scanner(System.`in`)
```

```
    val Enrollment_Number = sc.nextLine()
```

```
    println("Enter Student_Name:")
```

```
    val Student_Name =sc.nextLine()
```

```
    println("Enter 5_Subject_Marks:")
```

```
    println("Android:")
```

```
    val Android =sc.nextInt()
```

```
    println("Java:")
```

```
    val Java =sc.nextInt()
```

```
    println("Python:")
```

```
    val Python =sc.nextInt()
```

```
    println("PHP:")a
```

```
    val PHP =sc.nextInt()
```

```
    println("AngularJS:")
```

```
    val AngularJS =sc.nextInt()
```

```
    println("Enrollment_Number: $Enrollment_Number")
```

```
    println("Student_Name: $Student_Name")
```

```
    println("Total Marks:" +(Android+Java+Python+PHP+AngularJS))
```

```
    println("Percentage:" + ((Android+Java+Python+PHP+AngularJS)*100/500) )
```

```
}
```

Output

NAME- BHAVIK POKAR

ENROLLMENT NUMBER- IU2253000059

SUBJECT- MOBILE APPLICATION DEVELOPMENT USING ANDROID

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
Enter Enrollment_Number:
IU2253000059
Enter Student_Name:
BHAVIK
Enter 5_Subject_Marks:
Android:
80
Java:
70
Python:
60
PHP:
65
AngularJS:
75
Enrollment_Number: IU2253000059
Student_Name: BHAVIK
Total Marks:350
Percentage:70

Process finished with exit code 0
|
```

4

Write a Kotlin program to perform the arithmetic operation on 2 numbers accepted from the user.

Code

```
package com.example.myapplication
```

```
import java.util.Scanner
fun main(args:Array<String>)
{
    val sc = Scanner(System.`in`)
    println("Enter The First Number: ")
    val a = sc.nextInt()

    println("Enter the Second Number: ")
    val b = sc.nextInt()

    println("Addition: " + (a+b) )
    println("Subtraction: " + (a-b) )
    println("Multiplication: " + (a*b) )
    println("Division: " + (a/b) )
    println("Modulo: " + (a%b) )
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
Enter The First Number:  
50  
Enter the Second Number:  
55  
Addition: 105  
Subtraction: -5  
Multiplication: 2750  
Division: 0  
Modulo: 50  
  
Process finished with exit code 0  
|
```

5

Write a Kotlin program to calculate and display the Simple Interest. Accept the input by the user.

{ Code

```
package com.example.myapplication
```

```
import java.util.Scanner
```

```
fun main(args:Array<String>)
```

```
    val sc = Scanner(System.`in`)
```

```
    println("Enter The principal: ")
```

```
    val principal = sc.nextLine()
```

```
    println("Enter The Rate_Of_Intrest:")
```

```
    val Rate_Of_Intrest = sc.nextLine()
```

```
    println("Enter The Time_Period:")
```

```
    val Time_Period = sc.nextLine()
```

```
    println("Simple Intrest:  $\$(Principal * Rate\_Of\_Intrest * Time\_Period) / 100$ ")
```

```
}
```

Output

6**Write a Kotlin program to print the multiplication table of a number.****Code**

```
import java.util.Scanner
fun main(args : Array<String>)
{
    val scanner = Scanner(System.`in`)

    print("Enter The Multiplication Number :- ")
    val num = scanner.nextInt()

    for (i in 1..10)
    {
        println("${i} * ${num} = ${i * num}")
    }
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
Enter The Multiplication Number :- 10  
1 * 10 = 10  
2 * 10 = 20  
3 * 10 = 30  
4 * 10 = 40  
5 * 10 = 50  
6 * 10 = 60  
7 * 10 = 70  
8 * 10 = 80  
9 * 10 = 90  
10 * 10 = 100  
  
Process finished with exit code 0  
|
```

7

Write a Kotlin program to calculate the area of a cylinder. Accept the radius and height from the user. Area: $\pi r^2 h$.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args:Array<String>)  
{  
    val sc = Scanner(System.`in`)  
    println("Enter RADIUS:")  
    val r = sc.nextInt()  
    println("Enter Height:")  
    val h = sc.nextInt()  
  
    var p1 = 3.14  
    var area = p1 * (r * r) * h  
    println("Radius: $r Height: $h ")  
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
Enter RADIUS:  
10  
Enter Height:  
5  
Radius: 10 Height: 5  
  
Process finished with exit code 0  
|
```

8

Write a Kotlin program to demonstrate the use of mutable and immutable variables in a program.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args:Array<String>)  
{  
    val sc = Scanner(System.`in`)  
    println("Enter The Value: ")  
    val X:Int=14  
    var Y:Int=14  
    println("value X: $X and Y: $Y")  
    Y=25  
    //X=25  
    println("value X: $X and Y: $Y")  
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
Enter The Value:  
value X: 14 and Y: 14  
value X: 14 and Y: 25  
  
Process finished with exit code 0
```

9

Write a Kotlin program to find even and odd numbers between a given range. Accept the range values from the user.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args:Array<String>) {  
    val sc = Scanner(System.`in`)  
    println("Enter The Range Number1:")  
    val n1 = sc.nextInt()  
  
    println("Enter The Range Number2:")  
    val n2 = sc.nextInt()  
  
    for (i in n1..n2)  
    {  
        if (i % 2 == 0) {  
            println("$i is Even.")  
        }  
        else {  
            println("$i is Odd.")  
        }  
    }  
}
```

Output


```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
Enter The Range Number1:
10
Enter The Range Number2:
22
10 is Even.
11 is Odd.
12 is Even.
13 is Odd.
14 is Even.
15 is Odd.
16 is Even.
17 is Odd.
18 is Even.
19 is Odd.
20 is Even.
21 is Odd.
22 is Even.

Process finished with exit code 0
|
```

10

Write a Kotlin program to accept a number from the user and check whether the number is positive, negative or zero.

Code

```
package com.example.myapplication

import java.util.Scanner
fun main(args:Array<String>)
{
    val sc = Scanner(System.`in`)
    println("Enter The Multiplication_Number")
    val Number = sc.nextInt()

    if (Number == 0)
    {
        println("${Number}is Zero.")
    }
    else if (Number>0)
    {
        println("${Number}is Positive.")
    }
    else (Number<0)
    {
        println("${Number}is Negative.")
    }
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
Enter The Multiplication_Number  
20  
20is Positive.  
  
Process finished with exit code 0  
|
```

11

Write a Kotlin program to make a simple calculator for +, -, *, /, %, using when.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args: Array<String>)  
{  
    val reader = Scanner(System.`in`)  
    print("Enter two numbers: ")  
  
    val first = reader.nextDouble()  
    val second = reader.nextDouble()  
  
    print("Enter an operator (+, -, *, /): ")  
    val operator = reader.next()[0]  
    val result: Double  
    when (operator)  
    {  
        '+' -> result = first + second  
        '-' -> result = first - second  
        '*' -> result = first * second  
        '/' -> result = first / second  
        else -> {  
            System.out.printf("Error! operator is not correct")  
            return  
        }  
    }  
    System.out.printf("%.1f %c %.1f = %.1f", first, operator, second, result)  
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe"  
Enter two numbers:  
22 25  
Enter an operator (+, -, *, /): +  
22.0 + 25.0 = 47.0  
Process finished with exit code 0  
|
```

12

Write a Kotlin program to swap 2 values accepted from the user without using a third variable.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args : Array<String>)  
{  
    val scanner = Scanner(System.`in`)  
  
    print("Enter The Number 1 :- ")  
    var num1 = scanner.nextInt()  
  
    print("Enter The Number 2 :- ")  
    var num2 = scanner.nextInt()  
  
    println("\nNumber 1 :- $num1")  
    println("Number 2 :- $num2")  
  
    var c = 0  
    c = num1  
    num1 = num2  
    num2 = c  
  
    println("\nNumber 1 :- $num1")  
    println("Number 2 :- $num2")  
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" .  
Enter The Number 1 :- 20  
Enter The Number 2 :- 22  
  
Number 1 :- 20  
Number 2 :- 22  
  
Number 1 :- 22  
Number 2 :- 20  
  
Process finished with exit code 0  
|
```

13

Write a Kotlin program to find the sum of digits of a number accepted from the user.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun getSumOfDigits(number: Int): Int  
{  
    var number = number  
    var sum = 0  
    while (number > 0) {  
        val r = number % 10  
        sum += r  
        number /= 10  
    }  
    return sum  
}  
fun main(arg: Array<String>)  
{  
    val sc = Scanner(System.`in`)  
  
    println("Enter Number : ")  
    val num: Int = sc.nextInt()  
    val sumOfDigits = getSumOfDigits(num)  
    println("Sum of Digits : $sumOfDigits")  
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ..
```

```
Enter Number :
```

```
55
```

```
Sum of Digits : 10
```

```
Process finished with exit code 0
```

```
|
```

14

Write a Kotlin program to accept 3 numbers from the user and print the biggest & smallest of the 3 float values.

Code

```
package com.example.myapplication

import java.util.Scanner
fun main(args : Array<String>)
{
    val scanner = Scanner(System.`in`)

    print("Enter The Number 1 :- ")
    val n1 = scanner.nextFloat()

    print("Enter The Number 2 :- ")
    val n2 = scanner.nextFloat()

    print("Enter The Number 3 :- ")
    val n3 = scanner.nextFloat()

    if (n1 >= n2 && n1 >= n3)
    {
        println("$n1 is the largest number.")
    }
    else if (n2 >= n1 && n2 >= n3)
    {
        println("$n2 is the largest number.")
    }
    else
    {
        println("$n3 is the largest number.")
    }
    if (n1 <= n2 && n1 <= n3)
    {
        println("$n1 is the smallest number.")
    }
    else if (n2 <= n1 && n2 <= n3)
    {
        println("$n2 is the smallest number.")
    }
}
```

```
    }  
    else  
    {  
        println("$n3 is the smallest number.")  
    }  
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
Enter The Number 1 :- 50  
Enter The Number 2 :- 55  
Enter The Number 3 :- 60  
60.0 is the largest number.  
50.0 is the smallest number.  
  
Process finished with exit code 0  
|
```

15

Write a Kotlin program to accept a string from the user and count the number of vowels in it and display it to the user.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args: Array<String>)  
{  
    var line = "This website is aw3som3."  
    var vowels = 0  
    var consonants = 0  
    var digits = 0  
    var spaces = 0  
  
    line = line.toLowerCase()  
    for (i in 0..line.length - 1) {  
        val ch = line[i]  
        if (ch == 'a' || ch == 'e' || ch == 'i'  
            || ch == 'o' || ch == 'u')  
        {  
            ++vowels  
        }  
        else if (ch in 'a'..'z')  
        {  
            ++consonants  
        }  
        else if (ch in '0'..'9')  
        {  
            ++digits  
        }  
        else if (ch == ' ')  
        {  
            ++spaces  
        }  
    }  
}
```

```

        {
            ++digits
        }
        else if (ch == ' ')
        {
            ++spaces
        }
    }

    println("Vowels: $vowels")
    println("Consonants: $consonants")
    println("Digits: $digits")
    println("White spaces: $spaces")
}

```

Output

```

"C:\Program Files\Android\Android Studio\jre\bin\java.exe" .
Vowels: 7
Consonants: 11
Digits: 2
White spaces: 3

Process finished with exit code 0

```

16

Write a Kotlin program to accept Employee Code, Employee Name, Employee Department and Employee Basic Salary. Calculate the Gross Salary of the employee using the following criterias:

Allowance = HRA(5% of Basic Salary) + DA(12% of Basic Salary) + TA(fixed as given below)

TA calculation

- 300 - HR Dept
- 500 - IT Dept
- 800 - Sales/Marketing Dept

Tax as

- | | |
|---------------------------------------|---------|
| Gross Salary <= 25,000 | No Tax |
| Gross Salary between (26,000 & 75000) | 15% Tax |
| Gross Salary > 75,000 | 25% Tax |

Gross Salary = (Basic Salary + Allowance)

Net Salary = Gross salary - Tax

Note: Create UDF to calculate the Allowances & Net Salary

Code

SUBJECT- MOBILE APPLICATION DEVELOPMENT USING ANDROID

```
package com.example.myapplication

import java.util.Scanner
fun calculateAllowanceAndNetSalary(basicSalary: Double, employeeDepartment: String):
Pair<Double, Double> {
    // Calculate Allowance
    val hra = basicSalary * 0.05
    val da = basicSalary * 0.12

    val ta: Double = when (employeeDepartment) {
        "HR" -> 300.0
        "IT" -> 500.0
        "Sales/Marketing" -> 800.0
        else -> 0.0
    }

    val allowance = hra + da + ta
    val grossSalary = basicSalary + allowance

    // Calculate Tax
    val tax: Double = when {
        grossSalary <= 25000.0 -> 0.0
        grossSalary in 25001.0..75000.0 -> grossSalary * 0.15
        else -> grossSalary * 0.25
    }

    val netSalary = grossSalary - tax

    return Pair(allowance, netSalary)
}

fun main(args: Array<String>) {
    // Accept input
    println("Enter Employee Code: ")
    val employeeCode = readLine()!!

    println("Enter Employee Name: ")
    val employeeName = readLine()!!

    println("Enter Employee Department: ")
    val employeeDepartment = readLine()!!

    println("Enter Employee Basic Salary: ")
    val basicSalary = readLine()!!.toDouble()

    val (allowance, netSalary) = calculateAllowanceAndNetSalary(basicSalary,
employeeDepartment)

    // Print results
    println("Employee Code: $employeeCode")
    println("Employee Name: $employeeName")
    println("Employee Department: $employeeDepartment")
    println("Basic Salary: $basicSalary")
    println("Allowance: $allowance")
    println("Net Salary: $netSalary")
}
```

Output


```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
Enter Employee Code:  
000059  
Enter Employee Name:  
Bhavik  
Enter Employee Department:  
Mca  
Enter Employee Basic Salary:  
50000  
Employee Code: 000059  
Employee Name: Bhavik  
Employee Department: Mca  
Basic Salary: 50000.0  
Allowance: 8500.0  
Net Salary: 49725.0
```

```
Process finished with exit code 0  
|
```

17

Write a Kotlin program to input 5 numbers from the user and find their sum and average.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args : Array<String>)  
{  
    val scanner = Scanner(System.`in`)  
  
    print("Enter The Subject 1 :- ")  
    val sub1 = scanner.nextInt()  
  
    print("Enter The Subject 2 :- ")  
    val sub2 = scanner.nextInt()  
  
    print("Enter The Subject 3 :- ")  
    val sub3 = scanner.nextInt()  
  
    print("Enter The Subject 4 :- ")  
    val sub4 = scanner.nextInt()  
  
    print("Enter The Subject 5 :- ")  
    val sub5 = scanner.nextInt()
```

```
var total = sub1 + sub2 + sub3 + sub4 + sub5

println("Total :- $total")
println("Per :- ${ total / 5.0 } % ")
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
Enter The Subject 1 :- 52
Enter The Subject 2 :- 45
Enter The Subject 3 :- 85
Enter The Subject 4 :- 42
Enter The Subject 5 :- 15
Total :- 239
Per :- 47.8 %

Process finished with exit code 0
|
```

18

Write a Kotlin program to print the following pattern:

```
1
12
123
1234
12345
123456
1234567
12345678
123456789
12345678910
```

Code

```
package com.example.myapplication

import java.util.Scanner
fun main(args : Array<String>)
{
    val scanner = Scanner(System.`in`)

    print("Enter The Number :- ")
    val n = scanner.nextInt()
    for (i in 1..n) {
```

```

        for(j in 1..i) {
            print("$j ")
        }
        println("")
    }
}

```

Output

```

"C:\Program Files\Android\Android Studio\jre\bin\java.exe
Enter The Number :- 10
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
1 2 3 4 5 6 7
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10

Process finished with exit code 0
|

```

19

Write a menu driven Kotlin program to provide a list of options to the user for finding Square, Cube and factorial of a number. Using when perform the appropriate operation as selected by the user.

Code

```

package com.example.myapplication

import java.util.Scanner
fun main(args : Array<String>)
{
    val scanner = Scanner(System.`in`)
    loop@ while (true)
    {
        println("\n\n*** Select Menu ***")
        println("1. Square")
        println("2. Cube")
        println("3. Factorial")
        println("4. Exit")

        print("Select Option :- ")
        val ch = scanner.next()[0]

        when (ch)
        {
            '1' ->
            {

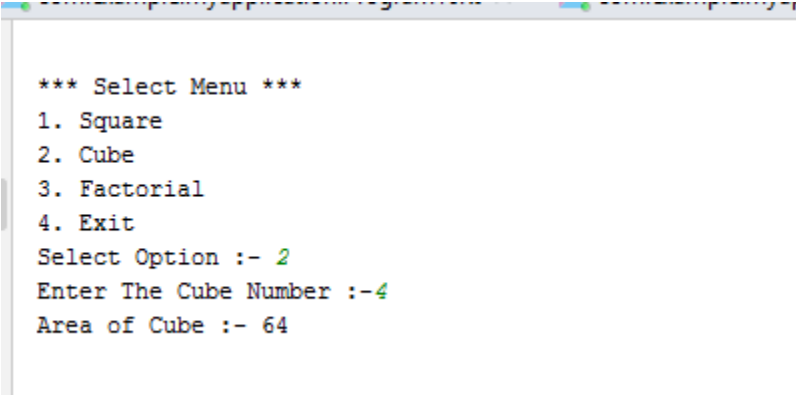
```

```
        print("Enter The Square Number :-")
        val num = scanner.nextInt()
        println("Area of Square :- ${num * num}")
    }
    '2' ->
    {
        print("Enter The Cube Number :-")
        val num = scanner.nextInt()
        println("Area of Cube :- ${num * num * num}")
    }
    '3' ->
    {
        print("Enter The Factorial Number :-")
        val num = scanner.nextInt()

        var fact=1
        for(i in 1..num){
            fact=fact*i;
        }
        println("Factorial :- $num :- ${fact}")
    }
    '4' -> break@loop

else ->
{
    println("Operator is not correct")
}
}
}
```

Output



```
*** Select Menu ***
1. Square
2. Cube
3. Factorial
4. Exit
Select Option :- 2
Enter The Cube Number :-4
Area of Cube :- 64
```

Code

```
package com.example.myapplication

import java.util.Scanner
fun main(args : Array<String>) {

    val scanner = Scanner(System.`in`)

    loop@ while (true)
    {
        println("\n\n*** Select Menu ***")
        println("1. Circle")
        println("2. Square")
        println("3. Triangle")
        println("4. Cylinder")
        println("5. Exit")

        print("Select Option :- ")
        val ch = scanner.next()[0]

        when (ch)
        {
            '1' ->
            {
                print("Enter The Radius Number :-")
                val radius = scanner.nextInt()
                println("Area of Circle :-  $\{3.14 * radius * radius\}$ ")
            }

            '2' ->
            {
                print("Enter The Square Number :-")
                val num = scanner.nextInt()
                println("Area of Square :-  $\{num * num\}$ ")
            }

            '3' ->
            {
                print("Enter The Base length of Triangle :-")
                val base = scanner.nextInt()

                print("Enter The Base Height of Triangle :-")
                val height = scanner.nextInt()

                println("Area of Triangle :-  $\{0.5 * base * height\}$ ")
            }

            '4' ->
            {
                print("Enter The Radius Number :-")
                val radius = scanner.nextInt()

                print("Enter The height Number :-")
                val height = scanner.nextInt()

                println("Area of Cube :-  $\{(22*radius*(radius+height))/7\}$ ")
            }

            '5' -> break@loop

            else ->
            {
                println("Operator is not correct")
            }
        }
    }
}
```

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
```

21

```
*****
*****
*****
*****
*****
****
***
**
*
```

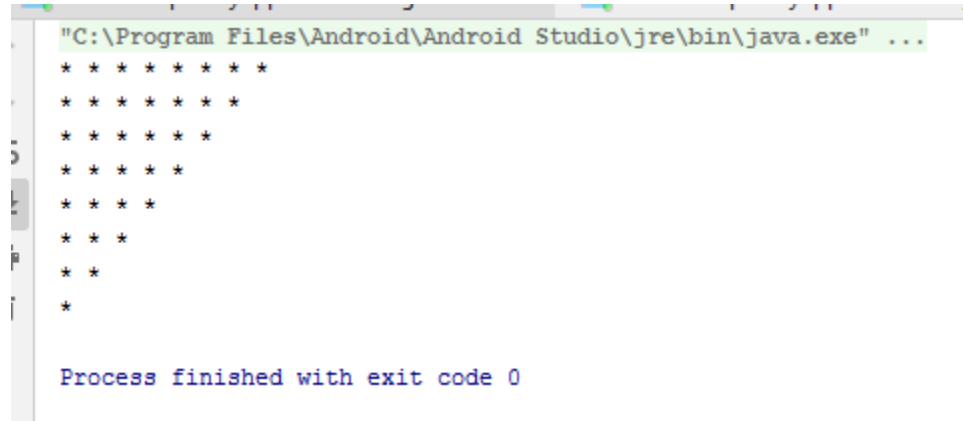
```
package com.example.myapplication

import java.util.Scanner
fun main(args : Array<String>)
{
    val scanner = Scanner(System.`in`)

    val rows = 8
}
```

```
        for (i in rows downTo 1) {  
            for(j in 1..i) {  
                print("* ")  
            }  
            println("")  
        }  
    }  
}
```

Output



```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
*****  
****  
***  
**  
*  
  
Process finished with exit code 0
```

22

Rewrite the program for question no. 11 using lambda.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args : Array<String>)  
{  
    val scanner = Scanner(System.`in`)  
  
    print("Enter The Number :- ")  
    val n = scanner.nextInt()  
    for (i in n downTo 1) {  
        for(j in 1..i) {  
            print("* ")  
        }  
        println("")  
    }  
}
```

Output

[illegible]

23

Write a Kotlin program to accept N values from the user, and perform the addition of positive numbers only. Note: Use a do-while loop and using UDF.

Code

```
package com.example.myapplication

import java.util.Scanner
val scanner = Scanner(System.`in`)
fun main(args : Array<String>)
{
    val scanner = Scanner(System.`in`)

    print("Enter The Number :- ")
    val num = scanner.nextInt()
    var i = 1
    var sum = 0

    while (i <= num) {
        sum = num + num
        print("$i + ")
        i++
    }
    println()
    println("sum :- $sum")
}
```

Output


```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...  
Enter The Number :- 10  
1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 +  
sum :- 20
```

```
Process finished with exit code 0  
|
```

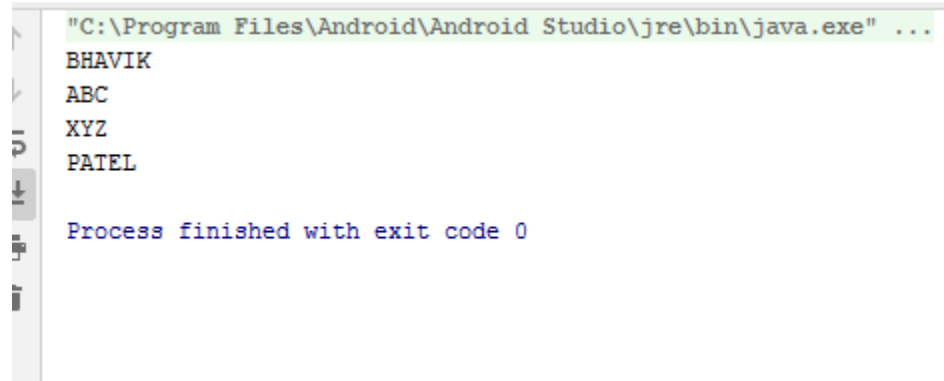
24

Write a Kotlin program to create an array of 5 string values and print them using `forEach` loop. Also create UDF for the same.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args : Array<String>)  
{  
    val scanner = Scanner(System.`in`)  
  
    var names = arrayOf("BHAVIK", "ABC", "XYZ", "PATEL")  
  
    names.forEach { item -> println(item) }  
}
```

Output



```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
BHAVIK
ABC
XYZ
PATEL

Process finished with exit code 0
```

25

Write a Kotlin program to print the fibonacci series having “N” elements. Accept the value of N from the user. Note: Use loop in reverse order & create UDF

Code

```
package com.example.myapplication

import java.util.Scanner
fun Fibonacci(n:Int):Int
{
    var a = 0
    var b = 1
    var c:Int
    var i:Int

    if( n == 0)
        return n;
    print("$a + $b +")

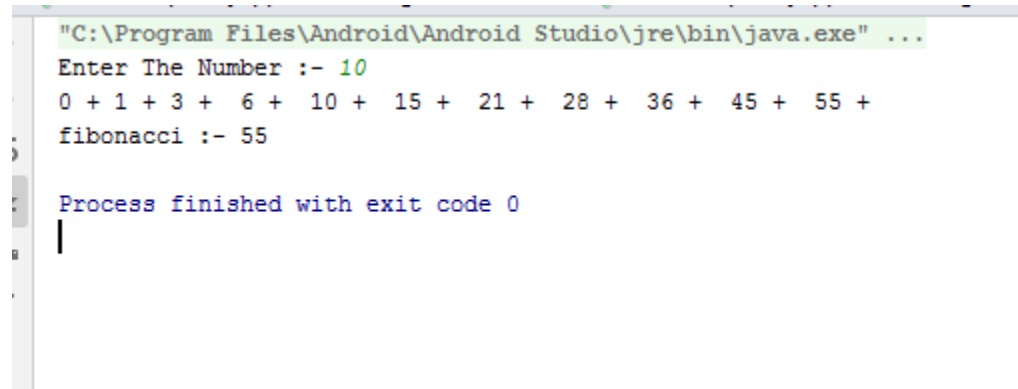
    for(i in 2..n)
    {
        c = i
        a = b
        b = c + a
        print(" $b + ")
    }
    return b;
}
fun main(args: Array<String>)
{
    val scanner = Scanner(System.`in`)

    print("Enter The Number :- ")
```

```
var num = scanner.nextInt()

println("\nfibonacci :- ${Fibonacci(num)}")
}
```

Output



```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
Enter The Number :- 10
0 + 1 + 3 + 6 + 10 + 15 + 21 + 28 + 36 + 45 + 55 +
fibonacci :- 55

Process finished with exit code 0
```

26

Write a Kotlin program to convert Kilometre to Metres or vice versa. Accept the choice from the user and perform the conversion accordingly. Note: Try to use lambda function for conversion

Code

```
package com.example.myapplication

import java.util.Scanner
fun main(args: Array<String>)
{
    val scanner = Scanner(System.`in`)
    print("Enter The kilometers :- ")
    var kilometers = scanner.nextFloat()
    var conv_fac = 0.621371
    var miles = kilometers * conv_fac

    println("${String.format("%.2f", kilometers)} kilometers is equal to
    ${String.format("%.2f", miles)}")
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" .  
Enter The kilometers :- 25  
25.00 kilometers is equal to 15.53  
  
Process finished with exit code 0  
|
```

27

Write a Kotlin program to print all prime numbers in between a given range, using UDF.

Code

```
package com.example.myapplication  
  
import java.util.Scanner  
fun main(args : Array<String>)  
{  
    val scanner = Scanner(System.`in`)  
  
    print("Enter The Range Number 1 :- ")  
    val num1 = scanner.nextInt()  
  
    print("Enter The Range Number 2 :- ")  
    val num2 = scanner.nextInt()  
  
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
Enter The Range Number 1 :- 20
Enter The Range Number 2 :- 10

Process finished with exit code 0
|
```

28

Write a Kotlin program to accept a number from the user and check whether it is an Armstrong number or not. Note: Use do-while loop & create UDF
Example: 153 is an Armstrong number because $(13)+(53)+(33) = 153$.

Code

```
package com.example.myapplication

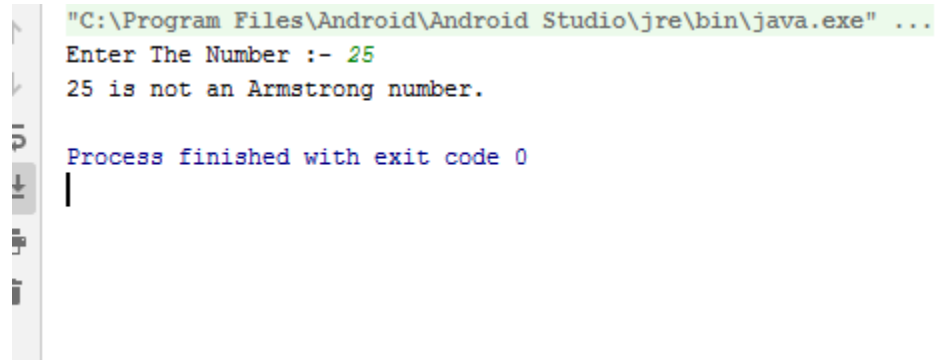
import java.util.Scanner
fun Armstrong(num:Int)
{
    var temp: Int
    var remainder: Int
    var result = 0
    temp = num
    while (temp != 0)
    {
        remainder = temp % 10
        result += Math.pow(remainder.toDouble(), 3.0).toInt()
        temp /= 10
    }

    if (result == num)
        println("$num is an Armstrong number.")
    else
        println("$num is not an Armstrong number.")
}

fun main(args: Array<String>)
{
    val scanner = Scanner(System.`in`)
    print("Enter The Number :- ")
    var num = scanner.nextInt()
```

```
        Armstrong(num)
    }
```

Output



```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
Enter The Number :- 25
25 is not an Armstrong number.
Process finished with exit code 0
```

29

Write a Kotlin program to demonstrate the use of indices attributes and withIndex() function of an Array

Code

```
package com.example.myapplication

import java.util.Scanner
fun main(args: Array<String>)
{
    val scanner = Scanner(System.`in`)
    val names = arrayOf("bhavik", "xyz", "abc", "patel")

    println("\nIndices Attributes")
    for (i in names.indices)
    {
        println("index :- $i - Name :- ${names[i]}")
    }
    println("\nWithIndex Function")
    for ((i,name) in names.withIndex()){
        println("index :- $i - Name :- ${name}")
    }
}
```

Output

```
Indices Attributes
index :- 0 - Name :- bhavik
index :- 1 - Name :- xyz
index :- 2 - Name :- abc
index :- 3 - Name :- patel

WithIndex Function
index :- 0 - Name :- bhavik
index :- 1 - Name :- xyz
index :- 2 - Name :- abc
index :- 3 - Name :- patel

Process finished with exit code 0
```

30

Write a Kotlin program to accept a value from the user either between 0-6 or any 1 value

from the following: { "Sun", "Mon", "Tue", "Wed", "Thurs", "Fri", "Sat"}. Print the full name of

the day based on input received using UDF

Code

```
package com.example.myapplication

import java.util.Scanner
fun main(args: Array<String>)
{
    print("Enter a number between 0 and 6 or a day of the week (Sun, Mon, Tue, Wed, Thurs, Fri, Sat):")
    var input = readLine()!!.trim()
    println("The day of the week is: ${getDayOfWeek(input)}")
}
fun getDayOfWeek(input: String): String
{
    val daysOfWeek = arrayOf("Sun", "Mon", "Tue", "Wed", "Thurs", "Fri", "Sat")
    var inputIndex = -1
    if (input in daysOfWeek)
    {
        inputIndex = daysOfWeek.indexOf(input)
    }
    else
```

```
{
    try
    {
        inputIndex = input.toInt()
    } catch (e: NumberFormatException)
    {
        return "Invalid input"
    }
}
if (inputIndex !in 0..6)
{
    return "Invalid input"
}
return when (inputIndex)
{
    0 -> "Sunday"
    1 -> "Monday"
    2 -> "Tuesday"
    3 -> "Wednesday"
    4 -> "Thursday"
    5 -> "Friday"
    6 -> "Saturday"
    else -> "Invalid input"
}
}
```

Output

```
"C:\Program Files\Android\Android Studio\jre\bin\java.exe" ...
```

```
Enter a number between 0 and 6 or a day of the week (Sun, Mon, Tue, Wed, Thurs, Fri, Sat):5
```

```
The day of the week is: Friday
```

```
Process finished with exit code 0
```

```
|
```


NAME- BHAVIK POKAR

ENROLLMENT NUMBER- IU2253000059

SUBJECT- MOBILE APPLICATION DEVELOPMENT USING ANDROID