

# **Practical - Unit I**

**Q1. Write a Kotlin program to display your name and age entered by the user.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter your name: Mahipal  
Enter your age: 22  
Your name is Mahipal and you are 22 years old.  
  
Process finished with exit code 0
```

```
fun main() {  
  
    print("Enter your name: ")  
    val name = readLineOrNull() ?: ""  
  
    print("Enter your age: ")  
    val age = readLineOrNull()  
  
    if (age != null) {  
        println("Your name is $name and you are $age years old.")  
    } else {  
        println("Something Invalid.")  
    }  
}
```

**Q2. Write a Kotlin program to display a welcome message to the user.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter your name: Mahipal  
Welcome, Mahipal! We are glad to have you here.  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter your name: ")  
    val name = readlnOrNull() ?: ""  
  
    println("Welcome, $name! We are glad to have you here.")  
}
```

**Q3. Write a Kotlin program to store your enrollment number, name & course in different variables and display on the screen.**

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

```
Enrollment Details:
```

```
Enrollment Number: IU2453000077
```

```
Name: Mahipal Rajpurohit
```

```
Course: MCA
```

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

```
fun main() {  
    val enrollmentNumber = "IU2453000077"  
    val name = "Mahipal Rajpurohit"  
    val course = "MCA"  
  
    println("Enrollment Details:")  
    println("Enrollment Number: $enrollmentNumber")  
    println("Name: $name")  
    println("Course: $course")  
}
```

**Q4. 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.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter your enrollment number: IU2453000077  
Enter your name: Mahipal  
Enter marks for subject 1: 80  
Enter marks for subject 2: 60  
Enter marks for subject 3: 97  
Enter marks for subject 4: 65  
Enter marks for subject 5: 98  
  
Student Details:  
Enrollment Number: IU2453000077  
Name: Mahipal  
Marks: 80, 60, 97, 65, 98  
Total: 400  
Percentage: 80.00%  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter your enrollment number: ")  
    val enrollmentNumber = readln()  
  
    print("Enter your name: ")  
    val name = readln()  
  
    val marks = IntArray(5)  
    for (i in marks.indices) {  
        print("Enter marks for subject ${i + 1}: ")  
        marks[i] = readln().toInt()  
    }  
  
    val total = marks.sum()  
    val percentage = total / 5.0  
  
    println("\nStudent Details:")  
    println("Enrollment Number: $enrollmentNumber")  
    println("Name: $name")  
    println("Marks: ${marks.joinToString(", ")}")  
}
```

```
println("Total: $total")
println("Percentage: %.2f%%".format(percentage))}
```

**Q5. Write a Kotlin program to perform the arithmetic operation on 2 numbers accepted from the user.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...
Enter the first number: 4
Enter the second number: 8
Sum: 12.0
Subtraction : -4.0
Multiplication : 32.0
Remainder: 4.0

Process finished with exit code 0
```

```
fun main() {
    print("Enter the first number: ")
    val num1 = readln().toDouble()

    print("Enter the second number: ")
    val num2 = readln().toDouble()

    println("Sum: ${num1 + num2}")
    println("Subtraction : ${num1 - num2}")
    println("Multiplication : ${num1 * num2}")
    println("Remainder: ${num1 % num2}")
}
```

**Q6. Write a Kotlin program to calculate and display the Simple Interest. Accept the input by the user.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter the principal amount: 80000  
Enter the rate of interest (in %): 4  
Enter the time (in years): 2  
  
Simple Interest: 6400.0  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter the principal amount: ")  
    val principal = readln().toDouble()  
  
    print("Enter the rate of interest (in %): ")  
    val rate = readln().toDouble()  
  
    print("Enter the time (in years): ")  
    val time = readln().toDouble()  
  
    val simpleInterest = (principal * rate * time) / 100  
  
    println("\nSimple Interest: $simpleInterest")  
}
```

**Q7. Write a Kotlin program to print the multiplication table of a number.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter a number: 5  
  
Multiplication Table of 5:  
5 x 1 = 5  
5 x 2 = 10  
5 x 3 = 15  
5 x 4 = 20  
5 x 5 = 25  
5 x 6 = 30  
5 x 7 = 35  
5 x 8 = 40  
5 x 9 = 45  
5 x 10 = 50  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter a number: ")  
    val number = readln().toInt()  
  
    println("\nMultiplication Table of $number:")  
    for (i in 1..10) {  
        println("$number x $i = ${number * i}")  
    }  
}
```

**Q8. Write a Kotlin program to calculate the area of a cylinder. Accept the radius and height from the user. Area:  $\pi r^2 h$ .**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter the radius of the cylinder: 6  
Enter the height of the cylinder: 20  
  
Area of the cylinder: 2261.946710584651  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter the radius of the cylinder: ")  
    val radius = readln().toDouble()  
  
    print("Enter the height of the cylinder: ")  
    val height = readln().toDouble()  
  
    val area = Math.PI * radius * radius * height  
  
    println("\nArea of the cylinder: $area")  
}
```



**Q9. Write a Kotlin program to demonstrate the use of mutable and immutable variables in a program.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Name: Alice  
Age: 25  
Updated Age: 26  
  
Process finished with exit code 0
```

```
fun main() {  
    val name = "Alice"  
    println("Name: $name")  
  
    var age = 25  
    println("Age: $age")  
  
    age = 26  
    println("Updated Age: $age")  
}
```

**Q10. Write a Kotlin program to find even and odd numbers between a given range. Accept the range values from the user.**

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

```
Enter the start of the range: 1
```

```
Enter the end of the range: 10
```

```
Even numbers between 1 and 10:
```

```
2
```

```
4
```

```
6
```

```
8
```

```
10
```

```
Odd numbers between 1 and 10:
```

```
1
```

```
3
```

```
5
```

```
7
```

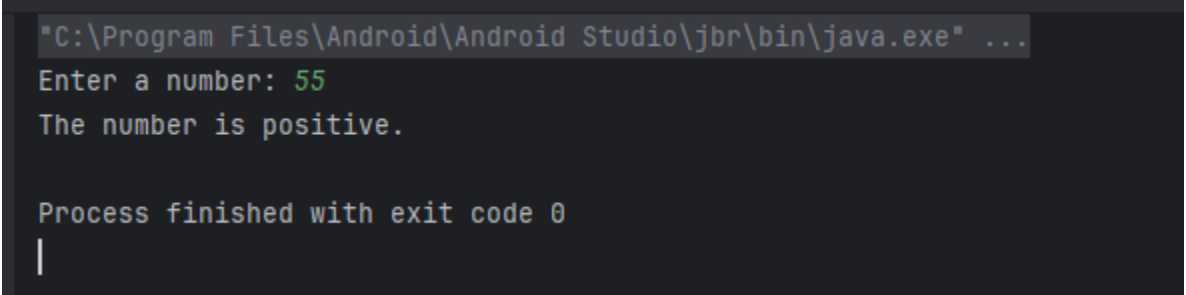
```
9
```

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

```
fun main() {  
  
    print("Enter the start of the range: ")  
    val start = readln().toInt()  
  
    print("Enter the end of the range: ")  
    val end = readln().toInt()  
  
    println("\nEven numbers between $start and $end:")  
    for (i in start..end) {  
        if (i % 2 == 0) {  
            println(i)  
        }  
    }  
  
    println("\nOdd numbers between $start and $end:")  
}
```

```
for (i in start..end){  
    if (i % 2 != 0) {  
        println(i)    }  
    }  
}
```

**Q11. Write a Kotlin program to accept a number from the user and check whether the number is positive, negative or zero.**



```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter a number: 55  
The number is positive.  
  
Process finished with exit code 0  
|
```

```
fun main() {  
    print("Enter a number: ")  
    val number = readln().toInt()  
  
    when {  
        number > 0 -> println("The number is positive.")  
        number < 0 -> println("The number is negative.")  
        else -> println("The number is zero.")  
    }  
}
```

**Q12. Write a Kotlin program to make a simple calculator for +, -, \*, /, %, using when.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter the first number: 5  
Enter the second number: 6  
Choose an operation (+, -, *, /, %):  
+  
Result: 11.0  
  
Process finished with exit code 0  
|
```

```
fun main() {  
    print("Enter the first number: ")  
    val num1 = readln().toDouble()  
  
    print("Enter the second number: ")  
    val num2 = readln().toDouble()  
  
    println("Choose an operation (+, -, *, /, %):")  
    val operation = readln()  
  
    val result = when (operation) {  
        "+" -> num1 + num2  
        "-" -> num1 - num2  
        "*" -> num1 * num2  
        "/" -> if (num2 != 0.0) num1 / num2 else "Error: Division by zero"  
        "%" -> if (num2 != 0.0) num1 % num2 else "Error: Division by zero"  
        else -> "Invalid operation"  
    }  
    println("Result: $result")  
}
```

**Q13. Write a Kotlin program to swap 2 values accepted from the user without using a third variable.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter the first value: 3  
Enter the second value: 8  
  
After swapping:  
First value: 8  
Second value: 3  
  
Process finished with exit code 0  
|
```

```
fun main() {  
    print("Enter the first value: ")  
    var a = readln().toInt()  
  
    print("Enter the second value: ")  
    var b = readln().toInt()  
  
    a = a + b  
    b = a - b  
    a = a - b  
  
    println("\nAfter swapping:")  
    println("First value: $a")  
    println("Second value: $b")  
}
```

**Q14. Write a Kotlin program to find the sum of digits of a number accepted from the user.**

```
*C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter a number: 60  
The sum of digits of 60 is: 6  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter a number: ")  
    val number = readln().toInt()  
  
    var sum = 0  
    var num = number  
  
    while (num != 0) {  
        sum += num % 10  
        num /= 10  
    }  
    println("The sum of digits of $number is: $sum")  
}
```

**Q15. Write a Kotlin program to accept 3 numbers from the user and print the biggest & smallest of the 3 float values.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter the first number: 98.5  
Enter the second number: 4.6  
Enter the third number: 87.5  
  
The largest number is: 98.5  
The smallest number is: 4.6  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter the first number: ")  
    val num1 = readln().toFloat()  
  
    print("Enter the second number: ")  
    val num2 = readln().toFloat()  
  
    print("Enter the third number: ")  
    val num3 = readln().toFloat()  
  
    val largest = maxOf(num1, num2, num3)  
    val smallest = minOf(num1, num2, num3)  
  
    println("\nThe largest number is: $largest")  
    println("The smallest number is: $smallest")  
}
```

**Q16. 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.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter a string: Mahipal  
The number of vowels in the string is: 3  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter a string: ")  
    val input = readln()  
  
    var vowelCount = 0  
  
    for (char in input) {  
        if (char.lowercaseChar() in "aeiou") {  
            vowelCount++  
        }  
    }  
  
    println("The number of vowels in the string is: $vowelCount")  
}
```



**Q17. 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:**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter Employee Code: 0077  
Enter Employee Name: Mahipal  
Enter Employee Department (HR/IT/Sales/Marketing): HR  
Enter Employee Basic Salary: 30000  
  
Employee Details:  
Employee Code: 0077  
Employee Name: Mahipal  
Employee Department: HR  
Basic Salary: 30000.0  
Total Allowances: 5400.0  
Gross Salary: 35400.0  
Tax: 5310.0  
Net Salary: 30090.0  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter Employee Code: ")  
    val empCode = readln()  
  
    print("Enter Employee Name: ")  
    val empName = readln()
```

```
print("Enter Employee Department (HR/IT/Sales/Marketing): ")
val empDept = readln()

print("Enter Employee Basic Salary: ")
val basicSalary = readln().toDouble()

val hra = 0.05 * basicSalary
val da = 0.12 * basicSalary
val ta = when (empDept) {
    "HR" -> 300.0
    "IT" -> 500.0
    "Sales", "Marketing" -> 800.0
    else -> 0.0
}

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

val tax = when {
    grossSalary <= 25000 -> 0.0
    grossSalary <= 75000 -> grossSalary * 0.15
    else -> grossSalary * 0.25
}

val netSalary = grossSalary - tax

println("\nEmployee Details:")
println("Employee Code: $empCode")
println("Employee Name: $empName")
println("Employee Department: $empDept")
println("Basic Salary: $basicSalary")
println("Total Allowances: $totalAllowances")
println("Gross Salary: $grossSalary")
println("Tax: $tax")
println("Net Salary: $netSalary")
}
```

**Q18. Write a Kotlin program to input 5 numbers from the user and find their sum and average.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter number 1: 5  
Enter number 2: 9  
Enter number 3: 4  
Enter number 4: 8  
Enter number 5: 5  
The sum of the numbers is: 31.0  
The average of the numbers is: 6.2  
  
Process finished with exit code 0
```

```
fun main() {  
    var sum = 0.0  
  
    for (i in 1..5) {  
        print("Enter number $i: ")  
        val num = readln().toDouble()  
        sum += num  
    }  
  
    val average = sum / 5  
  
    println("The sum of the numbers is: $sum")  
    println("The average of the numbers is: $average")  
}
```

```
}
```

**Q19. Write a Kotlin program to print the following pattern:**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
1  
12  
123  
1234  
12345  
123456  
1234567  
12345678  
123456789  
12345678910  
  
Process finished with exit code 0
```

```
fun main() {  
    for (i in 1..10) {  
        for (j in 1..i) {  
            print(j)  
        }  
        println()  
    }  
}
```

**Q20. 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.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Select an option:  
1. Find the square of a number  
2. Find the cube of a number  
3. Find the factorial of a number  
4. Exit  
Enter your choice (1-4): 1  
Enter a number to find its square: 5  
The square of 5 is 25  
  
Process finished with exit code 0
```

```
fun main() {  
    println("Select an option:")  
    println("1. Find the square of a number")  
    println("2. Find the cube of a number")  
    println("3. Find the factorial of a number")  
    println("4. Exit")  
  
    print("Enter your choice (1-4): ")  
    val choice = readln().toInt()  
  
    when (choice) {
```

```
1 -> {
    print("Enter a number to find its square: ")
    val num = readln().toInt()
    val square = num * num
    println("The square of $num is $square")
}
2 -> {
    print("Enter a number to find its cube: ")
    val num = readln().toInt()
    val cube = num * num * num
    println("The cube of $num is $cube")
}
3 -> {
    print("Enter a number to find its factorial: ")
    val num = readln().toInt()
    var factorial = 1
    for (i in 1..num) {
        factorial *= i
    }
    println("The factorial of $num is $factorial")
}
4 -> {
    println("Exiting the program. Goodbye!")
}
else -> {
    println("Invalid choice! Please select a valid option (1-4).")
}
}
}
```

**Q21. Write a menu driven Kotlin program to provide a list of options to the user for finding the area of Circle, Square, Triangle and Cylinder. Perform appropriate operation as selected by the user.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Select an option:  
1. Find the area of a Circle  
2. Find the area of a Square  
3. Find the area of a Triangle  
4. Find the area of a Cylinder  
5. Exit  
Enter your choice (1-5): 3  
Enter the base of the Triangle: 4  
Enter the height of the Triangle: 5  
The area of the Triangle is: 10.0  
  
Process finished with exit code 0
```

```
import kotlin.math.PI
```

```
fun main() {  
    println("Select an option:")  
    println("1. Find the area of a Circle")  
    println("2. Find the area of a Square")  
    println("3. Find the area of a Triangle")  
    println("4. Find the area of a Cylinder")  
    println("5. Exit")  
}
```

```
print("Enter your choice (1-5): ")
val choice = readln().toInt()
```

```
when (choice) {
```

```
    1 -> {
```

```
        print("Enter the radius of the Circle: ")
        val radius = readln().toDouble()
        val area = PI * radius * radius
        println("The area of the Circle is: $area")
```

```
    }
```

```
    2 -> {
```

```
        print("Enter the side length of the Square: ")
        val side = readln().toDouble()
        val area = side * side
        println("The area of the Square is: $area")
```

```
    }
```

```
    3 -> {
```

```
        print("Enter the base of the Triangle: ")
        val base = readln().toDouble()
        print("Enter the height of the Triangle: ")
        val height = readln().toDouble()
        val area = 0.5 * base * height
        println("The area of the Triangle is: $area")
```

```
    }
```

```
    4 -> {
```

```
        print("Enter the radius of the Cylinder: ")
        val radius = readln().toDouble()
        print("Enter the height of the Cylinder: ")
        val height = readln().toDouble()
        val area = 2 * PI * radius * (radius + height)
        println("The surface area of the Cylinder is: $area")
```

```
    }
```

```
    5 -> {
```

```
        println("Exiting the program. Goodbye!")
```

```
    }
```

```
else -> {
```

```
    println("Invalid choice! Please select a valid option (1-5).")
```



```
}  
}  
}
```

**Q22. Write a Kotlin program to print the following pattern:**

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

```
fun main() {  
    for (i in 8 downTo 1) {  
  
        for (j in 1..i) {  
            print("*")  
        }  
        println()  
    }  
}
```

```
}
```

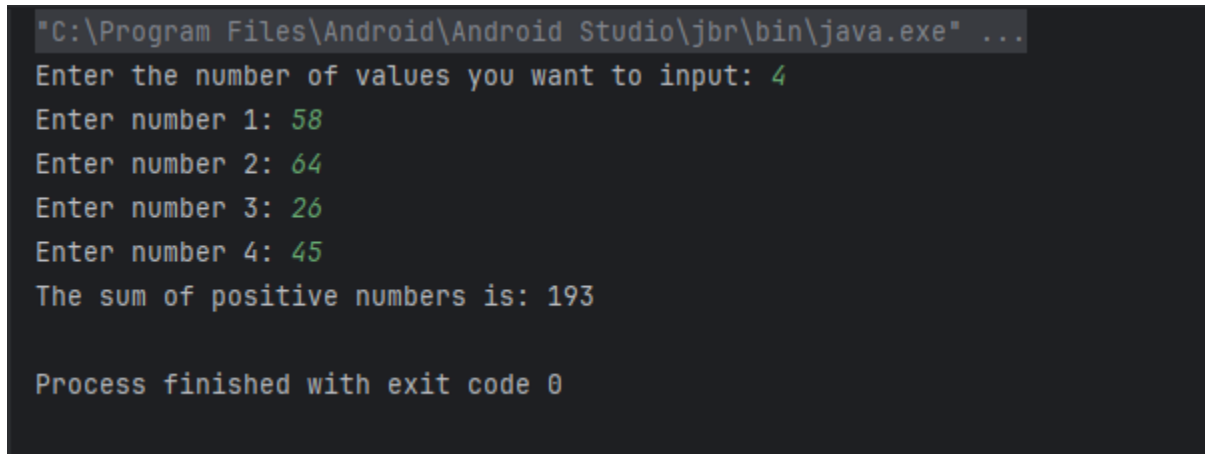
**Q23. Rewrite the program for question no. 11 using lambda.**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter a number: -8  
The number is: Negative  
  
Process finished with exit code 0
```

```
fun main() {  
    val checkNumber: (Int) -> String = { number ->  
        when {  
            number > 0 -> "Positive"  
            number < 0 -> "Negative"  
            else -> "Zero"  
        }  
    }  
}  
  
print("Enter a number: ")  
val num = readln().toInt()
```

```
println("The number is: ${checkNumber(num)}")
}
```

**Q24. 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.**



```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...
Enter the number of values you want to input: 4
Enter number 1: 58
Enter number 2: 64
Enter number 3: 26
Enter number 4: 45
The sum of positive numbers is: 193

Process finished with exit code 0
```

```
fun main() {
    print("Enter the number of values you want to input: ")
    val n = readln().toInt()
    val sum = addPositiveNumbers(n)

    println("The sum of positive numbers is: $sum")
}
```

```

fun addPositiveNumbers(n: Int): Int {
    var sum = 0
    var count = 0

    do {
        print("Enter number ${count + 1}: ")
        val num = readln().toInt()

        if (num > 0) {
            sum += num
        }

        count++
    } while (count < n)

    return sum
}

```

**Q25. Write a Kotlin program to create an array of 5 string values and print them using forEach loop. Also create UDF for the same.**



```

"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...
Mahipal
Parth
Paras
Meet
Suju

Process finished with exit code 0

```

```

fun main() {
    val names = arrayOf("Mahipal", "Parth", "Paras", "Meet", "Suju")

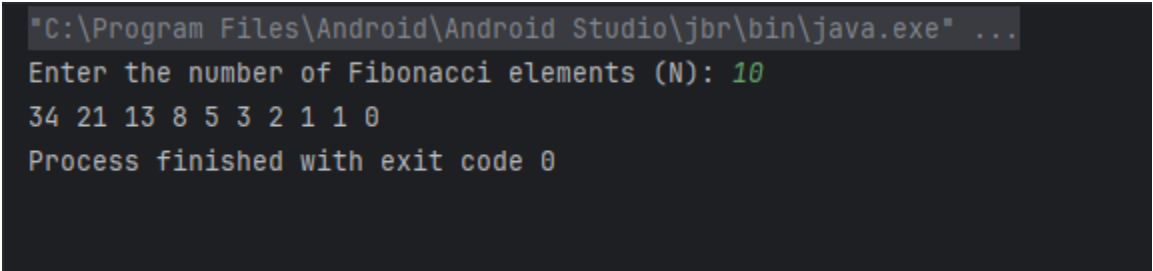
    printArrayValues(names)
}

fun printArrayValues(arr: Array<String>) {
    arr.forEach { value ->

```

```
    println(value)
}
}
```

**Q26. 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**



```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...
Enter the number of Fibonacci elements (N): 10
34 21 13 8 5 3 2 1 1 0
Process finished with exit code 0
```

```
fun main() {
    print("Enter the number of Fibonacci elements (N): ")
    val n = readln().toInt()
    printFibonacciReverse(n)
}
```

```
fun printFibonacciReverse(n: Int) {
    val fibonacci = mutableListOf<Int>()
    var first = 0
    var second = 1
```

```

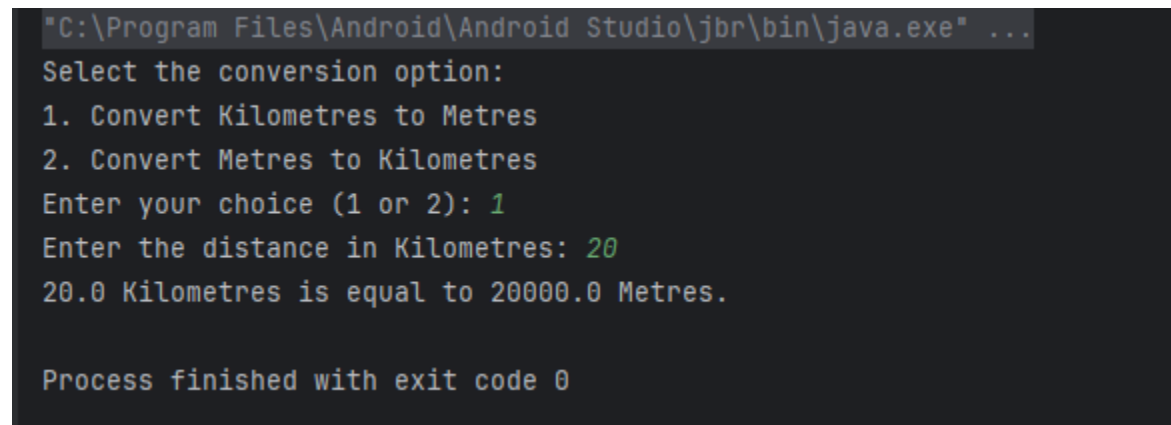
for (i in 1..n) {
    fibonacci.add(first)
    val next = first + second
    first = second
    second = next
}

for (i in fibonacci.size - 1 downTo 0) {
    print("${fibonacci[i]} ")
}
}

```

**Q27. 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**



```

"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...
Select the conversion option:
1. Convert Kilometres to Metres
2. Convert Metres to Kilometres
Enter your choice (1 or 2): 1
Enter the distance in Kilometres: 20
20.0 Kilometres is equal to 20000.0 Metres.

Process finished with exit code 0

```

```

fun main() {
    val kmToMetres: (Double) -> Double = { km -> km * 1000 }
    val metresToKm: (Double) -> Double = { metres -> metres / 1000 }

    println("Select the conversion option:")
    println("1. Convert Kilometres to Metres")
    println("2. Convert Metres to Kilometres")

    print("Enter your choice (1 or 2): ")
}

```

```

val choice = readln().toInt()

when (choice) {
    1 -> {
        print("Enter the distance in Kilometres: ")
        val km = readln().toDouble()
        val metres = kmToMetres(km)
        println("$km Kilometres is equal to $metres Metres.")
    }
    2 -> {
        print("Enter the distance in Metres: ")
        val metres = readln().toDouble()
        val km = metresToKm(metres)
        println("$metres Metres is equal to $km Kilometres.")
    }
    else -> {      println("Invalid choice. Please enter 1 or 2.")      } } }

```

**Q28. Write a Kotlin program to print all prime numbers in between a given range, using UDF.**

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

```
Enter the lower range: 10
```

```
Enter the upper range: 60
```

```
11
```

```
13
```

```
17
```

```
19
```

```
23
```

```
29
```

```
31
```

```
37
```

```
41
```

```
43
```

```
47
```

```
53
```

```
59
```

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

```
fun main() {  
    print("Enter the lower range: ")  
    val lower = readln().toInt()  
  
    print("Enter the upper range: ")  
    val upper = readln().toInt()  
  
    printPrimeNumbers(lower, upper)  
}  
  
fun printPrimeNumbers(lower: Int, upper: Int) {  
    for (num in lower..upper) {  
        if (isPrime(num)) {  
            println(num)  
        }  
    }  
}
```

```
fun isPrime(num: Int): Boolean {
```



```
if (num <= 1) return false
```

```
for (i in 2 until num) {
```

```
    if (num % i == 0) return false
```

```
}
```

```
return true
```

```
}
```

**Q29. 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**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter a number: 56  
56 is not an Armstrong number.  
  
Process finished with exit code 0
```

```
fun main() {  
    print("Enter a number: ")  
    val number = readln().toInt()  
  
    if (isArmstrongNumber(number)) {  
        println("$number is an Armstrong number.")  
    } else {  
        println("$number is not an Armstrong number.")  
    }  
}  
  
fun isArmstrongNumber(num: Int): Boolean {  
    var sum = 0  
    val originalNumber = num  
    val numberOfDigits = num.toString().length  
  
    var temp = num  
    do {  
        val digit = temp % 10  
        sum += Math.pow(digit.toDouble(), numberOfDigits.toDouble()).toInt()  
        temp /= 10  
    } while (temp > 0)  
  
    return sum == originalNumber  
}
```

**Q30. Write a Kotlin program to demonstrate the use of indices attributes and withIndex() function of an Array**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Using 'indices' to loop over the array:  
Index: 0, Value: 10  
Index: 1, Value: 20  
Index: 2, Value: 30  
Index: 3, Value: 40  
Index: 4, Value: 50  
  
Using 'withIndex()' to loop over the array:  
Index: 0, Value: 10  
Index: 1, Value: 20  
Index: 2, Value: 30  
Index: 3, Value: 40  
Index: 4, Value: 50  
  
Process finished with exit code 0
```

```
fun main() {  
    val numbers = arrayOf(10, 20, 30, 40, 50)  
  
    println("Using 'indices' to loop over the array:")  
    for (index in numbers.indices) {  
        println("Index: $index, Value: ${numbers[index]}")  
    }  
  
    println("\nUsing 'withIndex()' to loop over the array:")  
    for ((index, value) in numbers.withIndex()) {  
        println("Index: $index, Value: $value")  
    }  
}
```

**Q31. Write a Kotlin program to accept a value from the user either between 0-6 or any 1 value from the following:**

```
"C:\Program Files\Android\Android Studio\jbr\bin\java.exe" ...  
Enter a number between 0-6 or a day name (Sun, Mon, Tue, Wed, Thurs, Fri, Sat):  
5  
Friday  
  
Process finished with exit code 0
```

```
fun main() {  
    println("Enter a number between 0-6 or a day name (Sun, Mon, Tue, Wed, Thurs, Fri,  
Sat):")  
    val input = readln()  
  
    printDay(input)  
}  
  
fun printDay(input: String) {  
    if (input.toIntOrNull() in 0..6) {  
        when (input.toInt()) {  
            0 -> println("Sunday")  
            1 -> println("Monday")  
            2 -> println("Tuesday")  
            3 -> println("Wednesday")  
            4 -> println("Thursday")  
            5 -> println("Friday")  
            6 -> println("Saturday")  
        }  
    }  
    else {  
        when (input.lowercase()) {  
            "sun" -> println("Sunday")  
            "mon" -> println("Monday")  
            "tue" -> println("Tuesday")  
            "wed" -> println("Wednesday")  
            "thurs" -> println("Thursday")  
        }  
    }  
}
```

```
"fri" -> println("Friday")  
"sat" -> println("Saturday")  
else -> println("Invalid input")  
}}}
```