**Kotlin Basic Practical**

**1. Write a program that prints your name and your college name.**

fun main() {

val Name = "Dhaval Sojitra"

val CollegeName = "Atmiya university"

*println*("My Name is : $Name")

*println*("College Name is : $CollegeName")

}

**----------------------------------------------------------------------------------------------------------------------------**

**2. Write a program that prints your address with name.**

fun main() {

val Name = "Dhaval Sojitra"

val Address = "Surat,Gujarat"

*println*("Name is : $Name")

*println*("Address : $Address")

}

**----------------------------------------------------------------------------------------------------------------------------**

**3. Write a program that accept two numbers and perform all basic**

**Mathematical operation and print.**

fun main() {

var num1 = 10

var num2 = 20

println("-----mathematical operations-----")

var sum = num1 + num2

println("The sum is : $sum")

var Sub = num1 - num2

println("The subtraction is : $Sub")

var mul = num1 \* num2

println("The multiplication is : $mul")

var div = num1 / num2

println("The division is : $div")

var rem = num1 % num2

println("The remainder is : $rem")

}

**----------------------------------------------------------------------------------------------------------------------------**

**4. Write a program to calculate simple interest.**

fun main() {

val principal = 1000

val rate =5

val time =2

var SimpleInterest = (principal \* rate \* time) / 100

*println*("--------------------------")

*println*("Simple Interest is : $SimpleInterest")

}

**----------------------------------------------------------------------------------------------------------------------------**

**5. Write a program to calculate compound interest**

fun main() {

*print*("Enter the principal amount: ")

val principal = *readLine*()!!.*toDouble*()

*print*("Enter the rate of interest: ")

val rate = *readLine*()!!.*toDouble*()

*print*("Enter the time period in years: ")

val time = *readLine*()!!.*toDouble*()

*print*("Enter the number of times interest is compounded per year: ")

val n = *readLine*()!!.*toDouble*()

var CompoundInterest = principal \* Math.pow((1 + rate / (n \* 100)), n \* time)

*println*("--------------------------")

*println*("Simple Compound Interest is : $CompoundInterest")

}

**----------------------------------------------------------------------------------------------------------------------------**

**6. Write a program to calculate 10% bonus of salary.**

fun main() {

var salary = 10000

var bonus = salary \* 0.10

*println*("The 10% bonus of the salary is: $bonus")

}

**----------------------------------------------------------------------------------------------------------------------------**

**7. Write a program to convert KM into Meter**

fun main() {

var distanceInKm = 10

val meters = distanceInKm \* 1000

*println*("The distance in meters is: $meters")

}

**----------------------------------------------------------------------------------------------------------------------------**

**8. The distance between two cities is input through keyboard. Write a program to convert and print this distance in feet, meter, inch and centimeter**

fun main() {

*print*("Enter the distance between two cities (in kilometers): ")

var distanceKm = *readLine*()?.*toDoubleOrNull*()

if(distanceKm!= null && distanceKm>=0){

*println*("------------------ Your distance between two cities ------------")

var feet = distanceKm \* 3280.84

*println*("Distance in feet: $feet feet")

var meter = distanceKm \* 1000

*println*("Distance in Meter : $meter meter")

var inch = distanceKm \* 39370.1

*println*("Distance in Inch : $inch km")

var centimeter = distanceKm \* 100000

*println*("Distance in Centimeter : $centimeter km")

} else{

*println*("Invalid input. Distance should be a non-negative number.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**9. Write a program to find volume of cylinder (v = 3.14r2h )**

fun main() {

var PI = 3.14

var radius = 5.0

var height = 5

var volume = PI \* radius.*pow*(2)\* height

*println*("Volume of the cylinder: $volume cubic units")

}

**----------------------------------------------------------------------------------------------------------------------------**

**10. Write a program to calculate area of triangle (a = 1/2hb)**

fun main() {

var bash = 5

var height = 15

var area = 0.5 \* bash \* height

*println*("Area of the triangle: $area square units")

}

**----------------------------------------------------------------------------------------------------------------------------**

**11. Write a program to calculate area and perimeter of the rectangle**

fun main() {

var length = 10

var width = 5

var area = length \* width

var perimeter = 2 \* (length + width)

*println*("Dimensions of the rectangle:")

*println*("Area of the rectangle: $area square units")

*println*("Perimeter of the rectangle: $perimeter units")

}

**----------------------------------------------------------------------------------------------------------------------------**

**12. Write a program to calculate area of circle**

fun main() {

var PI = 3.14

var radius = 5

var area = PI \* radius \* radius

*print*("The Area of Circle is : $area")

}

**----------------------------------------------------------------------------------------------------------------------------**

**13. Write a program to swap two values**

fun main() {

var num1 = 10

var num2 = 20

*println*("-------- Before Swapping --------")

*println*("value of Number1 is : $num1")

*println*("value of Number2 is : $num2")

var temp = num1

num1 = num2

num2 = temp

*println*("-------- After Swapping --------")

*println*("value of Number1 is : $num1")

*println*("value of Number2 is : $num2")

}

**----------------------------------------------------------------------------------------------------------------------------**

**14. Write a program to swap two values without using third variable**

fun main() {

var num1 = 10

var num2 = 20

*println*("-------- Before Swapping --------")

*println*("value of Number1 is : $num1")

*println*("value of Number2 is : $num2")

num1 = num1 + num2

num2 = num1 - num2

num1 = num1 - num2

*println*("-------- After Swapping --------")

*println*("value of Number1 is : $num1")

*println*("value of Number2 is : $num2")

}

**----------------------------------------------------------------------------------------------------------------------------**

**15. Write a program to read the value of X and Y and print the result of following expression (X+Y)/(X-Y)**

fun main() {

*// var x= 20*

*// var y= 10*

*print*("Enter the value of X: ")

val x = *readLine*()?.*toDoubleOrNull*()

*print*("Enter the value of Y: ")

val y = *readLine*()?.*toDoubleOrNull*()

if (x!= null && y!= null && x - y != 0.0) {

var result = (x + y) / (x - y)

*println*("Result of (X + Y) / (X - Y) = $result")

} else {

*println*("Invalid input or division by zero. Please enter valid non-zero values for X and Y.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**16. Write a program to read the value of X and Y and print the result of following**

**expression (X+Y)/2**

fun main() {

*print*("Enter the value of X : ")

var x = *readLine*()?.*toDoubleOrNull*()

*print*("Enter the value of Y : ")

var y = *readLine*()?.*toDoubleOrNull*()

if(x != null && y != null) {

var result = (x + y ) / 2

*println*("result of (x + y)/2 = $result")

}else{

*println*("Please enter the value of X to Y ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**17. Write a program to read the value of X and Y and print the result of following expression (X+Y)\*(X-Y)**

fun main() {

*print*("Enter the value of X : ")

var x = *readLine*()?.*toDoubleOrNull*()

*print*("Enter the value of Y : ")

var y = *readLine*()?.*toDoubleOrNull*()

if(x != null && y != null) {

var result = (x + y) \* (x - y)

*println*("result of (x + y) \* (x - y) = $result")

}else{

*println*("Please enter the value of X to Y ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**18. Write a program to read the value of X and Y and print the result of following expression 3X2+2XY+3Y2**

fun main() {

*print*("Enter the value of X : ")

var x = *readLine*()?.*toDoubleOrNull*()

*print*("Enter the value of Y : ")

var y = *readLine*()?.*toDoubleOrNull*()

if(x != null && y != null) {

var result = (3 \* x \* x ) + (2 \* x \* y) + (3 \* y \* 2)

*println*("result of (3 \* x \* x ) + (2 \* x \* y) + (3 \* y \* 2) = $result")

}else{

*println*("Please enter the value of X to Y ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**19. Write a program to read the value of X and Y and print the result of following expression (2X+3Y)/XY**

fun main() {

*print*("Enter the value of X : ")

var x = *readLine*()?.*toDoubleOrNull*()

*print*("Enter the value of Y : ")

var y = *readLine*()?.*toDoubleOrNull*()

if(x != null && y != null) {

var result = (2\*x + 3\*y) / (x \* y)

*println*("result of (2\*x + 3\*y) / (x \* y) = $result")

}else{

*println*("Please enter the value of X to Y ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**20. Write a program to convert negative to positive and positive to negative**

fun main() {

var num1 = -10

var num2 = 20

num1 = -num1

num2 = -num2

*println*("Convert negative to positive and positive to negative :")

*println*("number1: $num1")

*println*("number2: $num2")

}

**----------------------------------------------------------------------------------------------------------------------------**

**21. Write a program that accept 5 numbers from user and find average of the value**

fun main() {

var sum=0.0

*println*("Enter 5 numbers:")

for (i in 0 .. 4) {

*print*("Enter number ${i + 1}: ")

val num = *readLine*()?.*toDoubleOrNull*()!!

sum += num

}

val average = sum / 5

*println*("------------------------------")

*print*("average of five numbers is = $average")

}

**----------------------------------------------------------------------------------------------------------------------------**

**22. Write a program to find out the net salary of an employee and get the basic salary fromhim.**

**Applicable TA 4%, DA 30%, HRA 15% on basic salary. Applicable 3% tax 12% PF on basic salary**

fun main() {

*print*("Enter the basic salary:")

var basicSalary = *readLine*()!!.*toDouble*()

*println*("---------------------------")

var ta = basicSalary \* 0.04

var da = basicSalary \* 0.30

var hra = basicSalary \* 0.15

var grossSalary = basicSalary + ta + da + hra

var tax = basicSalary \* 0.03

var pf = basicSalary \* 0.12

var netsalary = grossSalary - tax - pf

*println*("Basic Salary: $basicSalary")

*println*("Travel Allowance (TA): $ta")

*println*("Dearness Allowance (DA): $da")

*println*("House Rent Allowance (HRA): $hra")

*println*("Gross Salary: $grossSalary")

*println*("Tax: $tax")

*println*("Provident Fund (PF): $pf")

*println*("Net Salary: $netsalary")

}

**----------------------------------------------------------------------------------------------------------------------------**

**23. Write a program to find maximum number from 2 numbers**

fun main() {

var num1 = 20

var num2 = 15

if (num1 > num2)

{

*println*("The maximum number between $num1 and $num2 is : $num1")

}else{

*println*("The maximum number between $num1 and $num2 is : $num2")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**24. Write a program to find out minimum number from 2 numbers**

fun main() {

var num1 = 10

var num2 = 15

var MinNumber = 0

if(num1 < num2){

MinNumber = num1

}else{

MinNumber = num2

}

*println*("The Minimum number between $num1 and $num2 is : $MinNumber")

}

**----------------------------------------------------------------------------------------------------------------------------**

**25. Write a program to find minimum and maximum no from 2 numbers.**

fun main() {

*print*("Enter the first number : ")

var n1 = *readLine*()?.*toIntOrNull*()

*print*("Enter the second number :")

var n2 = *readLine*()?.*toIntOrNull*()

*println*("---------------------------------------")

if(n1!= null && n2!= null) {

if (n1 > n2) {

*println*("The maximum number is: $n1")

*println*("The minimum number is: $n2")

} else if (n2 > n1) {

*println*("The maximum number is: $n2")

*println*("The minimum number is: $n1")

} else {

*println*("Both numbers are the same: $n1")

}

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**26. Write a program to check number is odd or even**

fun main() {

*print*("Enter the Number : ")

var num = *readLine*()!!.*toInt*()

if(num % 2 == 0){

*println*("$num is an even number")

}else{

*println*("$num is an odd number")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**27. Write a program that accepts the year from user and check it leap year or not.**

fun main() {

*print*("Enter the year : ")

val year = *readLine*()!!.*toInt*()

*println*("------------------------------------")

if((year % 4 == 0) && (year % 100 != 0 || year % 400 == 0)) {

*println*("$year is leap year")

}else{

*println*("$year is not leap year")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**28. Write a program to that accept the number from user and check it is divisible by 5 or not.**

fun main() {

*print*("Enter a Number : ")

var num = *readLine*()!!.*toDouble*()

if(num % 5 == 0.0) {

*print*("$num is divisible by 5")

}else {

*print*("$num is not divisible by 5")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**29. Write a program that accept the number from user and check its negative, positive or zero**

fun main() {

*print*("Enter a number : ")

val num = *readLine*()!!.*toDouble*()

*println*("--------------------------------")

if (num > 0){

*println*("$num is positive")

} else if (num < 0) {

*println*("$num is negative ")

} else {

*println*("$num is Zero ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**30. Write a program input one integer number. Check whether number is equal to 10 ornot.**

fun main() {

*print*("Enter a interger number : ")

var num = *readLine*()?.*toIntOrNull*()

*println*("---------------------------------")

if(num == 10){

*println*("$num is equal to 10")

}else{

*println*("$num is not equal to 10")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**31. Write a program input one integer number check whether number is in between 0 to100 or not**

fun main() {

*print*("Enter a number : ")

val num = *readLine*()?.*toIntOrNull*()

if(num != null && num in 0 .. 100) {

*print*("The number $num is between 0 and 100.")

} else {

*println*("The number $num is not between 0 and 100.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**32. Write a program input one integer number check whether number is four digits or not**

fun main() {

*print*("Enter a integer number :")

var num = *readLine*()?.*toIntOrNull*()

if (num != null && num in 1000 .. 9999) {

*println*("The number $num is a four-digit number.")

}else{

*println*("The number $num is not a four-digit number.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**33. Write a program input one integer number check whether is greater than 50 and less then 200**

fun main() {

*print*("Enter a number : ")

var num = *readLine*()?.*toIntOrNull*()

if(num != null && num > 50 && num < 200){

*println*("The number $num is greater than 50 and less than 200.")

}else {

*println*("The number is not within the range (greater than 50 and less than 200).")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**34. Write a program input one integer number display appropriate day of week.**

fun main() {

*print*("Enter a number between 1 and 7 :")

val num = *readLine*()?.*toIntOrNull*()

val dayOfWeek = when (num) {

1 ->"Monday"

2 -> "Tuesday"

3 -> "Wednesday"

4 -> "Thursday"

5 -> "Friday"

6 -> "Saturday"

7 -> "Sunday"

else -> {

*print*("Invalid day number. Please enter a number between 1 and 7.")

return

}

}

*println*("Day of the week is $dayOfWeek")

}

**----------------------------------------------------------------------------------------------------------------------------**

**35. Write a program input one integer number display appropriate name of month**

fun main() {

*print*("Enter a number 1-12 to display the appropriate month name : ")

val Number = *readLine*()?.*toIntOrNull*()

val month = when (Number) {

1 -> "January"

2 -> "February"

3 -> "March"

4 -> "April"

5 -> "May"

6 -> "June"

7 -> "July"

8 -> "August"

9 -> "September"

10 -> "October"

11 -> "November"

12 -> "December"

else -> {

*print*("Invalid input. Please enter a number between 1 and 12.")

return

}

}

*println*("Month name is: $month")

}

**----------------------------------------------------------------------------------------------------------------------------**

**36. Write a program to find out maximum from three number**

fun main() {

*print*("Enter the first number : ")

var num1 = *readLine*()?.*toIntOrNull*()

*print*("Enter the second number : ")

var num2 = *readLine*()?.*toIntOrNull*()

*print*("Enter the third number : ")

var num3 = *readLine*()?.*toIntOrNull*()

*println*("----------------------------------------")

if(num1 != null && num2 != null && num3 != null) {

if (num1 >= num2 && num1 >= num3) {

*print*("The maximum number is : $num1")

} else if (num2 >= num1 && num2 >= num3) {

*print*("The maximum number is : $num2")

} else {

*print*("The maximum number is : $num3")

}

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**37. Write a program to find out minimum from three number**

fun main() {

*print*("Enter the first number : ")

var num1 = *readLine*()?.*toIntOrNull*()

*print*("Enter the second number : ")

var num2 = *readLine*()?.*toIntOrNull*()

*print*("Enter the third number : ")

var num3 = *readLine*()?.*toIntOrNull*()

*println*("----------------------------------------")

if (num1!=null && num2!=null && num3!=null){

if(num1<=num2&&num1<=num3) {

*print*("The minimum number is : $num1")

}else if(num2<=num3&&num2<=num1){

*print*("The minimum number is : $num2")

}else{

*print*("The minimum number is : $num3")

}

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**38. Enter age of person and display message as**

**Up to 5 year Kid**

**5- 12 Children**

**13 – 19 Teenager**

**20 – 30 Young**

**31 – 60 Mid age group**

**60 or above Old**

fun main() {

print("Enter the age of the person : ")

var age = readLine()?.toIntOrNull()

if(age!=null) {

if(age<=5) {

println("Up to 5 years: Kid")

}else if (age in 6 ..12) {

println("5-12 years: Children")

}else if(age in 13 ..19) {

println("13-19 years: Teenager")

}else if(age in 20 ..30) {

println("20-30 years: Young")

} else if (age in 31..60) {

println("31-60 years: Mid age group")

} else if (age >= 61) {

println("60 years and above: Old")

} else {

println("Invalid age")

}

} else {

println("Please enter a valid number.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**39. Write a program input integer number and select number to perform following task**

**1 – Addition**

**2 – Subtraction**

**3 – Multiplication**

**4 – Division**

**5 – Exit**

fun main() {

var choice: Int

var result: Double

do {

println("1 - Addition")

println("2 - Subtraction")

println("3 - Multiplication")

println("4 - Division")

println("5 - Exit")

print("Enter your choice : ")

choice = readLine()!!.toInt()

println("------------------------------")

if (choice in 1..4) {

print("Enter first number : ")

var num1 = readLine()?.toDoubleOrNull()

print("Enter second number : ")

var num2 = readLine()?.toDoubleOrNull()

println("-------------------------------")

if(num1!=null && num2!=null) {

when (choice) {

1 -> {

result = (num1 + num2)

println(" Addition is: $result")

}

2 -> {

result = (num1 - num2)

println(" Subtraction is : $result")

}

3 -> {

result = (num1 \* num2)

println("Multiplication is : $result")

}

4 -> {

if (num2 != 0.0) {

result = (num1 / num2)

println("Division is : $result")

} else {

println("Error: Division by zero")

}

}

}

}

} else if (choice == 5) {

println("Exiting program.")

} else {

println("Invalid choice. Please enter a number between 1 and 5.")

}

println()

} while (choice != 5)

}

**----------------------------------------------------------------------------------------------------------------------------**

**40. Write a program input 5 subject marks and find class and result**

fun main() {

val numberOfSubjects = 5

var totalMarks = 0

for( i in 1..numberOfSubjects) {

print("Enter marks for subject ${i}: ")

val marks = readLine()!!.toInt()

totalMarks += marks

}

println("-----------------------------------")

val averageMarks = totalMarks / numberOfSubjects

println("\nAverage marks: $averageMarks")

if (averageMarks >= 70) {

print("Result: Distinction")

} else if (averageMarks >= 60) {

println("Result: First Class")

} else if (averageMarks >= 50) {

println("Result: Second Class")

} else if (averageMarks >= 40) {

println("Result: Pass")

} else {

println("you have failed. Please work harder. Fail")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**41. Write a program to find number which number is divisible by 3 but not divisible by 7**

fun main() {

*print*("Enter a number: ")

val number = *readLine*()!!.*toInt*()

if (number % 3 == 0 && number % 7 != 0) {

*println*("$number is divisible by 3 but not by 7.")

} else {

*println*("$number is not divisible by 3 or it is divisible by 7.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**42. Write a program that reads a sales bill amount calculate discount on bill amount as follows if bill amount less than 5000 calculate 7.5% discount on bill amount otherwise calculate 11% discount on bill. Print bill amount discount amount and net payable bill**

fun main() {

*print*("Enter the sales bill amount: ")

val billAmount = *readLine*()!!.*toDouble*()

if (billAmount < 5000) {

val discount = billAmount \* 7.5 / 100

val netPayable = billAmount - discount

*println*("Bill Amount: $billAmount")

*println*("A discount of 7.5% has been applied.")

*println*("Discount Amount: $discount")

*println*("Net Payable Bill: $netPayable")

} else {

val discount = billAmount \* 11.0 / 100

val netPayable = billAmount - discount

*println*("Bill Amount: $billAmount")

*println*("A discount of 11% has been applied.")

*println*("Discount Amount: $discount")

*println*("Net Payable Bill: $netPayable")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**43. An electric power distribution company charger its domestic customers as follows.**

**Consumption unit rate of charge**

**0 – 200 RS. 0.50 per unit**

**201 – 400 RS. 100 + RS. 0.65 per unit**

**401 – 600 RS. 230 + RS. 0.80 per unit**

**601 and above RS. 390 + RS. 1.00 per unit**

**Read the customer number and power consumed and print the amount to be paid by the customer**

fun main() {

*print*("Enter Customer Number : ")

var cnum = *readLine*()?.*toDoubleOrNull*()

*print*("Enter power consumed (units): ")

var unit = *readLine*()?.*toDoubleOrNull*()

var amount : Double = 0.0

if(cnum != null && unit !=null)

{

if(unit<=200){

amount = unit\*0.50

}

else if(unit<=400){

amount = (unit\*0.65)+100

}

else if(unit<=600){

amount = (unit\*0.80)+230

}

else{

amount = (unit\*1)+390

}

}

*println*("---------------BILL---------------")

*println*("Customer Number : $cnum")

*println*("Power Consumed in Units : $unit")

*println*("Payble Amount : $amount")

*println*("----------------------------------")

}

**----------------------------------------------------------------------------------------------------------------------------**

**44. Get a string from user and display it in upper case**

fun main() {

*print*("Enter Any String : ")

var str= *readLine*() ?: ""

*println*("Stirng in UPPER CASE : ${str.*uppercase*()}")

}

**----------------------------------------------------------------------------------------------------------------------------**

**45. Get a string from user and display it in lower case**

fun main() {

*print*("Enter Any String : ")

var str = *readLine*() ?: ""

*println*("String in lower case : ${str.*lowercase*()}")

}

**----------------------------------------------------------------------------------------------------------------------------**

**46. Get a string from user and check it is vowel or consonants**

fun main() {

*print*("Enter a string: ")

val input = *readLine*()!!

val vowels = "aeiouAEIOU"

for (char in input) {

if (char in vowels) {

*println*("$char is a vowel")

} else if (char.*isLetter*()) {

*println*("$char is a consonant")

} else {

*println*("$char is not a letter")

}

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**47. Write a program that accept character from keyboard and determine whether the character is a capital letter, small letter, digit or a special character**

fun main() {

*print*("Enter a character: ")

val input = *readLine*()

if (input != null && input.*isNotEmpty*()) {

val char = input.*single*()

if (char in 'A'..'Z') {

*println*("$char is a capital letter")

} else if (char in 'a'.. 'z') {

*println*("$char is a small letter")

} else if (char in '0'..'9') {

*println*("$char is a digit")

} else {

*println*("$char is a special character")

}

} else {

*println*("Please enter a valid character.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**48. Print 1 to 10**

fun main() {

for(i in 1..10){

*print*(" " + i)

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**49. Print 2 4 6 8 10**

fun main() {

for(i in 2.. 10 *step* 2){

*print*("$i ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**50. Print 1 3 5 7 9**

fun main() {

for(i in 1..10 *step* 2){

*print*("$i ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**51. Print 1 2 4 8 16 32 64 128 256 512 1024**

fun main() {

var num = 1

for(i in 1..11) {

*print*("$num ")

num \*= 2

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**52. Print 10 to 1**

fun main() {

for(i in 10 *downTo* 1){

*print*("$i ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**53. Print 1 10 2 9 3 8 4 7 5 6**

fun main() {

val n = 10

for (i in 1..n/2) {

*print*("$i ")

*print*("${n - i + 1} ")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**54. Print 1 2 3 5 6 7 9 -\_ \_ \_ n**

fun main() {

val n = 10

for (i in 1..n) {

if (i != 4 && i != 8) {

*print*("$i ")

}

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**55. Input and number display table of that number**

fun main() {

*print*("Enter a number: ")

val number = *readLine*()?.*toIntOrNull*()

if (number != null) {

*println*("Multiplication table of $number:")

for (i in 1..10) {

*println*("$number x $i = ${number \* i}")

}

} else {

*println*("Invalid input. Please enter a valid number.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**56. Print series of 1/1, 1/2, 1/3, \_ \_ \_ 1/N**

fun main() {

*print*("Enter a number N: ")

val n = *readLine*()?.*toIntOrNull*()

if (n != null && n > 0) {

*println*("Series of fractions 1/1, 1/2, 1/3, ..., 1/$n:")

for (i in 1..n) {

*println*("1/$i")

}

} else {

*println*("Invalid input. Please enter a valid positive integer.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**57. Print series of 1/2, 2/3, 3/4, 4/5, \_ \_ \_ N/N+1**

fun main() {

*print*("Enter a number N: ")

val n = *readLine*()?.*toIntOrNull*()

if (n != null && n > 0) {

*println*("Series of fractions 1/2, 2/3, 3/4, ..., $n/${n+1}:")

for (i in 1..n) {

*println*("$i/${i+1}")

}

} else {

*println*("Invalid input. Please enter a valid positive integer.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**58. Print series 1 + 4 – 9 + 16 – 25 + 36 + \_ \_ \_ + N2**

fun main() {

print("Enter the value of N: ")

var N = readLine()!!.toIntOrNull()!!

var sum = 0

for (i in 1..N) {

val term = i \* i

if (i % 2 == 0) {

sum -= term

} else {

sum += term

}

}

println("The sum of the series is: $sum")

}

**----------------------------------------------------------------------------------------------------------------------------**

**59. Print 0 1 1 2 3 5 8 13 21 34 55 (Fibonacci)**

fun main() {

val n = 11

*print*("Fibonacci Series up to $n terms: ")

var a = 0

var b = 1

for (i in 1..n) {

*print*("$a ")

val sum = a + b

a = b

b = sum

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**60. Print factorial value of given number**

fun main() {

*print*("Enter a number: ")

val number = *readLine*()?.*toIntOrNull*()

if (number != null && number >= 0) {

var factorial = 1

for (i in 1..number) {

factorial \*= i

}

*println*("Factorial of $number is: $factorial")

} else {

*println*("Invalid input. Please enter a non-negative integer.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**61. Check whether the number is prime or not**

fun main() {

val number = 17

var isPrime = true

var m = number/2

if (number <= 1) {

*println*("$number is a prime number.")

isPrime = false

} else {

for (i in 2..m) {

if (number % i == 0) {

isPrime = false

break

}

}

}

if (isPrime) {

*println*("$number is a prime number.")

} else {

*println*("$number is not a prime number.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**62. Print prime number between given range**

fun main() {

val start = 10

val end = 20

*println*("Prime numbers between $start and $end are:")

for (num in start..end) {

if (num > 1) {

var isPrime = true

for (i in 2 *until* num) {

if (num % i == 0) {

isPrime = false

break

}

}

if (isPrime) {

*println*(num)

}

}

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**63. Write program that display square, cubes and factorials of all integer from 1 to 10**

fun main() {

for (num in 1..10) {

val square = num \* num

val cube = num \* num \* num

var factorial = 1

for (i in 1..num) {

factorial \*= i

}

*println*("Number: $num")

*println*("Square: $square")

*println*("Cube: $cube")

*println*("Factorial: $factorial")

*println*()

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**64. Display sum of digit**

fun main() {

val number = 12345

var num = number

var sum = 0

while (num != 0) {

sum += num % 10

num /= 10

}

println("Sum of digits of $number is $sum")

}

**----------------------------------------------------------------------------------------------------------------------------**

**65. Display reverse number**

fun main() {

val number = 12345

var num = number

var reversed = 0

while (num != 0) {

val digit = num % 10

reversed = reversed \* 10 + digit

num /= 10

}

*println*("Reverse of $number is $reversed")

}

**----------------------------------------------------------------------------------------------------------------------------**

**66. Check entered number is Armstrong or not**

**----------------------------------------------------------------------------------------------------------------------------**

**67. Check entered number is palindrome or not**

fun main() {

val number = 123211

var num = number

var reversedNum = 0

while (num != 0) {

val digit = num % 10

reversedNum = reversedNum \* 10 + digit

num /= 10

}

if (reversedNum == number) {

*println*("$number is a palindrome.")

} else {

*println*("$number is not a palindrome.")

}

}

**----------------------------------------------------------------------------------------------------------------------------**

**68. Count odd and even digits from given number**

fun main() {

var number = 1234567891

var oddCount = 0

var evenCount = 0

while (number != 0) {

if (number % 2 == 0) {

evenCount++

} else {

oddCount++

}

number /= 10

}

*println*("Number of odd digits: $oddCount")

*println*("Number of even digits: $evenCount")

}

**----------------------------------------------------------------------------------------------------------------------------**

**69. Accept number and find how many zeros are there**

fun main() {

val number = 690420050

var zeroCount = 0

var num = number

while (num > 0) {

if (num % 10 == 0) {

zeroCount++

}

num /= 10

}

*println*("Number of zeros in $number: $zeroCount")

}

**----------------------------------------------------------------------------------------------------------------------------**

**70. Count digits of given number**

fun main() {

*//1)*

*//1 2 3 4 5*

*//1 2 3 4 5*

*//1 2 3 4 5*

*//1 2 3 4 5*

*//1 2 3 4 5*

println("--------- 1 pattern ----------")

for( i in 1 .. 5 ){

for( j in 1 .. 5){

print("$j ")

}

println()

}

*//2)*

*//1 1 1 1 1*

*//2 2 2 2 2*

*//3 3 3 3 3*

*//4 4 4 4 4*

*//5 5 5 5 5*

println("--------- 2 pattern ----------")

for( i in 1 .. 5 ){

for( j in 1 .. 5){

print("$i ")

}

println()

}

*//3)*

*//1 2 3 4 5*

*//2 4 6 8 10*

*//3 6 9 12 15*

*//4 8 12 16 20*

*//5 10 15 20 25*

println("--------- 3 pattern ----------")

for( i in 1 .. 5 ){

for( j in 1 .. 5){

print("${i \* j}" + " ")

}

println()

}

*//4)*

*//A A A A A*

*//B B B B B*

*//C C C C C*

*//D D D D D*

*//E E E E E*

println("--------- 4 pattern ----------")

for( i in 'A' .. 'E' ){

for( j in 'A' .. 'E'){

print("$i ")

}

println()

}

*//5)*

*//1 2 3 4 5*

*//$ 2 3 4 5*

*//$ $ 3 4 5*

*//$ $ $ 4 5*

*//$ $ $ $ 5*

println("--------- 5 pattern ----------")

for( i in 1 .. 5 ){

for( j in 1.. 5){

if (j < i) {

print("$ ")

} else {

print("$j ")

}

}

println()

}

*//6)*

*// 1 $ $ $ $*

*// 2 2 $ $ $*

*// 3 3 3 $ $*

*// 4 4 4 4 $*

*// 5 5 5 5 5*

println("--------- 6 pattern ----------")

for( i in 1 .. 5 ){

for( j in 1.. 5){

if (i < j) {

print("$ ")

} else {

print("$i ")

}

}

println()

}

*//7)*

*// X 0 0 0 0*

*// X X 0 0 0*

*// X X X 0 0*

*// X X X X 0*

*// X X X X X*

println("--------- 7 pattern ----------")

for( i in 1 .. 5 ) {

for( j in 1.. 5) {

if (i < j) {

print("0 ")

} else {

print("X ")

}

}

println()

}

*//8)*

*// \* \* \* \* \**

*// \* \**

*// \* \**

*// \* \**

*// \* \* \* \* \**

println("--------- 8 pattern ----------")

for( i in 1 .. 5 ) {

for( j in 1.. 5) {

if(i==1 || j==1 || i==5 || j==5 ) {

print("\* ")

}

else{

print(" ")

}

}

println()

}

*//9)*

*// 1*

*// 2 2*

*// 3 3 3*

*// 4 4 4 4*

*// 5 5 5 5 5*

println("--------- 9 pattern ----------")

for( i in 1 .. 5 ) {

for( j in 1.. i) {

print("$i ")

}

println()

}

*//10)*

*// 1*

*// 1 2*

*// 1 2 3*

*// 1 2 3 4*

*// 1 2 3 4 5*

println("--------- 10 pattern ----------")

for( i in 1 .. 5 ) {

for( j in 1.. i) {

print("$j ")

}

println()

}

*//11)*

*// 5*

*// 5 4*

*// 5 4 3*

*// 5 4 3 2*

*// 5 4 3 2 1*

println("--------- 11 pattern ----------")

for( i in 5 downTo 1 ) {

for( j in 5 downTo i) {

print("$j ")

}

println()

}

*// 12)*

*// 1*

*// 2 1*

*// 3 2 1*

*// 4 3 2 1*

*// 5 4 3 2 1*

println("--------- 12 pattern ----------")

for( i in 1 .. 5 ) {

for( j in i downTo 1) {

print("$j ")

}

println()

}

*// 13)*

*// 1*

*// 2 3*

*// 4 5 6*

*// 7 8 9 10*

*// 11 12 13 14 15*

println("--------- 13 pattern ----------")

var number =1

for (i in 1 .. 5) {

for( j in 1 .. i) {

print("$number ")

number++

}

println()

}

*// 14)*

*// 1*

*// 0 1*

*// 1 0 1*

*// 0 1 0 1*

*// 1 0 1 0 1*

println("--------- 14 pattern ----------")

for( i in 1 .. 5 ){

for( j in 1 .. i){

if((i+j) % 2 == 0 ){

print("1 ")

}else{

print("0 ")

}

}

println()

}

*// 15)*

*// 1*

*// 1 0*

*// 1 0 1*

*// 1 0 1 0*

*// 1 0 1 0 1*

println("--------- 15 pattern ----------")

for( i in 1 .. 5 ){

for( j in 1 .. i){

if( j % 2 == 0 ){

print("0 ")

}else{

print("1 ")

}

}

println()

}

*// 16)*

*// A*

*// B C*

*// D E F*

*// G H I J*

*// K L M N O*

println("--------- 16 pattern ----------")

var char ='A'

for (i in 1 .. 5) {

for( j in 1 .. i) {

print("$char ")

char++

}

println()

}

*//17)*

*// \**

*// \*\**

*// \*\*\**

*// \*\*\*\**

*//\*\*\*\*\**

println("--------- 17 pattern ----------")

for (i in 1..5) {

for (j in 1..(5 - i)) {

print(" ")

}

for (k in 1..i) {

print("\*")

}

println()

}

*//18)*

*// \* \* \* \* \**

*// \* \* \* \**

*// \* \* \**

*// \* \**

*// \**

println("--------- 18 pattern ----------")

for(i in 1 .. 5) {

for (j in 5 downTo i) {

print("\* ")

}

println()

}

*//19)*

*// \**

*// \* \**

*// \* \* \**

*// \* \* \* \**

*//\* \* \* \* \**

println("--------- 19 pattern ----------")

for( i in 1 .. 5) {

for (j in 1..(5 - i)) {

print(" ")

}

for (k in 1..i) {

print("\* ")

}

println()

}

}

**----------------------------------------------------------------------------------------------------------------------------**