Simple programs (Variables and Decision Making)

1. Write a command line program for Compute Quotient and Remainder.

   Test Case = 1
   Input = 5 2
   Output = 2 1

   Test Case = 2
   Input = 13 4
   Output = 3 1

   Test Case = 3
   Input = 78 16
   Output = 4 14

   Test Case = 4
   Input = 489 23
   Output = 21 6

   Test Case = 5
   Input = 54673 359
   Output = 152 105

2. Write command line program for odd and even.

   Test Case = 1
   Input = 1
   Output = 1 is Odd
   Test Case = 2
   Input = 2
   Output = 2 is Even
   Test Case = 3
   Input = 176
   Output = 176 is Even
   Test Case = 4
   Input = 6795
   Output = 6795 is Odd
   Test Case = 5
   Input = 8367519
   Output = 8367519 is Odd

3. Write a command line program for Check Whether a Number is Positive or Negative.

Test Case = 1
Input = 10
Output = 10 is positive

Test Case = 2
Input = -23
Output = -23 is negative

Test Case = 3
Input = -982
Output = -982 is negative

Test Case = 4
Input = 56894
Output = 56894 is positive

Test Case = 5
Input = 219532
Output = 219532 is positive

4. Write command line program to find area of circle.

Test Case = 1
Input = 2
Output =12.564

Test Case = 2
Input = 13
Output = 530.829

Test Case = 3
Input = 72
Output = 16282.944

Test Case = 4
Input = 106
Output =35292.276

Test Case = 5
Input = 534
Output = 895674.996

5. Write command line program to find area of triangle.

Test Case = 1
Input = 12,3
Output =18

Test Case = 2
Input = 538,719
Output =193411

Test Case = 3
Input = 25,15
Output =187.5

Test Case = 4
Input = 13,7
Output =45.5

Test Case = 5
Input = 1245, 9154
Output =5698365

6. Write command line program find greatest of two numbers

Test Case = 1
Input = 12 45
Output = 45

Test Case = 2
Input = 1234 456
Output =1234

Test Case = 3
Input = 45 987
Output =987

Test Case = 4
Input = 612 3912
Output =3912

Test Case = 5
Input = 12 90
Output =90

7. Write command line program for swapping two numbers

Test Case = 1
Input = 12 56
Output = 56 12

Test Case = 2
Input = 425 918
Output = 918 425

Test Case = 3
Input = 37 91
Output = 91 37

Test Case = 4
Input = 8769 3145
Output = 3145 8769

Test Case = 5
Input = 32728 98715
Output = 98715 32728

8. Write command line program to calculate Hypotenuse of a Right-angle triangle.

Test Case = 1
Input = 3 4
Output = 5.00

Test Case = 2
Input = 5 6
Output = 7.81

Test Case = 3
Input = 12 15
Output = 19.20

Test Case = 4
Input = 58 95
Output = 111.30

Test Case = 5
Input = 7 8
Output = 10.63

9. Write command line program to check if a year is leap year or not.

Test Case = 1
Input = 1901
Output = Not Leap Year

Test Case = 2
Input = 2016
Output = Leap Year

Test Case = 3
Input = 3112
Output = Leap Year

Test Case = 4
Input = 1978
Output = Not Leap Year

Test Case = 5
Input = 1120
Output = Leap Year

10. Write a command line program for Multiply two Floating Point Numbers

Test Case = 1
Input = 23.345 19.43
Output = 453.593

Test Case = 2
Input = 2589.52 658.986
Output = 1706457.426

Test Case = 3
Input = 245.251 77.65
Output = 19043.740

Test Case = 4
Input = 32.85 12.56
Output = 412.596

Test Case = 5
Input = 489.11 98.26
Output = 48059.948

11. Write a command line program for Find ASCII Value of a Character.

Test Case = 1
Input = A
Output = 65

Test Case = 2
Input = D
Output = 68

Test Case = 3
Input = Z
Output = 90

Test Case = 4
Input = p
Output = 112

Test Case = 5
Input = k
Output = 107

12. Write a command line program for Check Whether a Character is Vowel or Consonant.

Test Case = 1
Input = a
Output = a is vowel

Test Case = 2
Input = p
Output = p is Consonant

Test Case = 3
Input = u
Output = u is vowel

Test Case = 4
Input = t
Output = t is Consonant

Test Case = 5
Input = k
Output = k is Consonant

13. Write a command line program for Check Whether a Character is an Alphabet or not.

Test Case = 1
Input = Z
Output = Z is alphabet

Test Case = 2
Input = l
Output = l is alphabet

Test Case = 3
Input = 8
Output = 8 is not alphabet

Test Case = 4
Input = x
Output = x is alphabet

Test Case = 5
Input = +
Output = + is not alphabet

14. Write a command line program for Find the Largest Number Among Three Numbers.

Test Case = 1
Input = 12 45 2
Output = 45

Test Case = 2
Input = 69 45 96
Output = 96

Test Case = 3
Input = 997 59 10
Output = 997

Test Case = 4
Input = 128 235 221
Output = 235

Test Case = 5
Input = 4 99 569
Output = 569

15. Write a command line program for Find all Roots of a Quadratic Equation.

Test Case = 1
Input = -1 4 5
Output = -1.00 5.00

Test Case = 2
Input = 1 -2 -2
Output = 2.73 -0.73

Test Case = 3
Input = 4 8 2
Output = -0.29 -1.70

Test Case = 4
Input = 3 15 7
Output = -0.52 -4.47

Test Case = 5
Input = 5 20 10
Output = -0.58 -3.41

16. Write a command line program for Make a Simple Calculator Using switch...case.

Test Case = 1
Input = 5 + 2
Output = 7

Test Case = 2
Input = 23 * 4
Output = 92

Test Case = 3
Input = 75 - 23
Output = 52

Test Case = 4
Input = 34 -64
Output = -30

Test Case = 5
Input = 5 / 2
Output = 2.5

17. Write a command line program for Calculate the Sum of first n Natural Numbers.

Test Case = 1
Input = 5
Output = 15

Test Case = 2
Input = 10
Output = 55

Test Case = 3
Input = 985
Output = 485605

Test Case = 4
Input = 79
Output = 3160

Test Case = 5
Input = 109
Output = 5995

18. You are given 3 numbers a, b and x. write a C program to output the multiple of x which is closest to a^b .

Test Case=1
Input = 2 8 5
Output = 250

Test Case=2
Input = 5 7 9
Output = 78120

Test Case=3
Input = 7 10 12
Output = 282475248

Test Case=4
Input = 3 7 12
Output = 2184

Test Case=5
Input = 5 5 10
Output = 3120

19. Write a program to find minimum number of cookies required to distribute m cookies among n guests equally.

Test Case= 1
Input = 4 5
Output = 1

Test Case= 2
Input = 0 7
Output = 7

Test Case= 3
Input = 34 8
Output = 6

Test Case= 4
Input = 56 12
Output = 4

Test Case= 5
Input = 45 45
Output = 0

20. Write a program to calculate change for specified rupees with given type of coins First parameter is total rupees to convert into change, and next parameters are coin types. use coin types from higher to lower values. Output contains coin type and number of coins for all types.

Test Case= 1
Input = 100 10 5 2
Output = 10 10

Test Case= 2
Input = 157 10 5 2 1
Output = 10 15 5 1 2 1

Test Case= 3
Input = 18 5 2 1
Output = 5 3 2 1 1 1

Test Case= 4
Input = 29 10 5 2 1
Output = 10 2 5 1 2 2

Test Case= 5
Input = 57 5 2 1
Output = 5 11 2 1

21. Write a command line program to find nCr and nPr. nCr = n!/r!(n-r)! and nPr = n!/(n-r)!

Test Case= 1
Input = 4 2
Output = 6 12

Test Case= 2
Input = 5 3
Output = 3 6

Test Case= 3
Input = 9 5
Output = 630 15120

Test Case= 4
Input = 8 5
Output = 56 336

Test Case= 5
Input = 7 3
Output = 35 840

Programs using Looping

22. Write command line program to check if a number is prime or not.

Test Case = 1
Input = 7
Output = 7 is a prime number

Test Case = 2
Input = 169
Output = 169 is not a prime number

Test Case = 3
Input = 809
Output = 809 is a prime number

Test Case = 4
Input = 7919
Output = 7919 is a prime number

Test Case = 5
Input = 390625
Output = 390625 is not a prime number

23. Write command line program to reverse a number.

Test Case = 1
Input = 13
Output = 31

Test Case = 2
Input = 1579
Output = 9751

Test Case = 3
Input = 36598
Output = 89563

Test Case = 4
Input = 4211387
Output = 7831124

Test Case = 5
Input = 618
Output = 816

24. Write command line program to find N^{th} Fibonacci number.

Test Case = 1
Input = 0
Output = 0

Test Case = 2
Input = 2
Output = 1

Test Case = 3
Input = 11
Output = 89

Test Case = 4
Input = 19
Output = 4181

Test Case = 5
Input = 28
Output = 317811

25. Write command line program to calculate Fibonacci series upto Nth number

Test Case = 1
Input = 5
Output = 0 1 1 2 3

Test Case = 1
Input = 10
Output = 0 1 1 2 3 5 8 13 21 34

Test Case = 1
Input = 7
Output = 0 1 1 2 3 5 8

Test Case = 1
Input = 15
Output = 0 1 1 2 3 5 8 13 21 34 55 89 144 233 377

Test Case = 1
Input = 20
Output = 0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181

26. Write command line program to calculate factorial of a non-negative number.

Test Case = 1
Input = 5
Output = 120

Test Case = 2
Input = 9

Output = 362880

Test Case = 3
Input = 12
Output = 479001600

Test Case = 4
Input = 13
Output =

Test Case = 5
Input = 10
Output = 3628800

27. Write command line program to find whether the given number is Armstrong number or not.

Test Case = 1
Input = 15
Output = 15 is not an Armstrong number

Test Case = 2
Input = 371
Output = 371 is an Armstrong number

Test Case = 3
Input = 8208
Output = 8208 is an Armstrong number

Test Case = 4
Input = 1741725
Output = 1741725 is an Armstrong number

Test Case = 5
Input = 1289
Output = 1289 is not an Armstrong number

28. Write command line program to sum of all digits in a number.

Test Case = 1
Input = 134
Output = sum of digits in 134 is 8

Test Case = 2
Input = 4
Output = sum of digits in 4 is 4

Test Case = 3
Input = 7895
Output = sum of digits in 7895 is 29

Test Case = 4
Input = 12354
Output = sum of digits in 12354 is 15

Test Case = 5
Input = 9658432
Output = sum of digits in 9658432 is 37

29. Write command line program to calculate average of given numbers.

Test Case = 1
Input = 14 23
Output = Average of the numbers is 18.50

Test Case = 2
Input = 15 38 29 47 121 81
Output = Average of the numbers is 55.17

Test Case = 3
Input = 11 128 326 79 154 289 365 222 149 66 998
Output = Average of the numbers is 253.36

Test Case = 4
Input = 1 29 36
Output = Average of the numbers is 22.00

Test Case = 5
Input = 458 3 7 89
Output = Average of the numbers is 139.25

30. Write command line program to convert binary to octal.

Test Case = 1
Input = 110
Output = 6

Test Case = 2
Input = 01011001
Output = 131

Test Case = 3
Input = 001000111001
Output =1071

Test Case = 4
Input = 0001111100010000
Output =17420

Test Case = 5
Input = 0010011001110011
Output =23163

Test Case = 6
Input = 100101100111110000001001
Output =45476011

31. Write command line program to convert decimal to octal.

Test Case = 1
Input = 1297
Output =2421

Test Case = 2
Input = 8
Output =10

Test Case = 3
Input = 89458
Output =256562

Test Case = 4
Input = 421536
Output =1467240

Test Case = 5
Input = 29483841
Output =160361501

32. Write command line program to convert decimal to binary.

Test Case = 1
Input = 5
Output = 101

Test Case = 2
Input = 25
Output = 11001

Test Case = 3
Input = 6247
Output = 1100001100111

Test Case = 4
Input = 35981
Output = 1000110010001101

Test Case = 5
Input = 6589542
Output = 11001001000110001100110

33. Write command line program to binary to decimal number.

Test Case = 1
Input = 111011
Output = 59

Test Case = 2
Input = 10100100110010001
Output = 84369

Test Case = 3
Input = 100111101000001110100
Output = 1298548

Test Case = 4
Input = 10011011010001110100110000111
Output = 325642631

Test Case = 5
Input = 0100101010111110010101001101010010
Output = 1253987154

34. Write command line program to check if the number is palindrome or not.

Test Case = 1
Input = 121
Output = 121 is Palindrome

Test Case = 2
Input = 374
Output = 374 is not a palindrome

Test Case = 3
Input = 345643

Output = 345643 is not a palindrome

Test Case = 4
Input = 82344328
Output =82344328 is a palindrome

Test Case = 5
Input = 278959871
Output = 278959871 is not a palindrome

35. Write command line program to calculate square root without using math.h sqrt function.

Test Case = 1
Input = 17
Output = 4.123

Test Case = 2
Input = 81
Output = 9

Test Case = 3
Input = 569
Output = 23.854

Test Case = 4
Input = 27985
Output = 167.287

Test Case = 5
Input = 35817
Output = 189.254

36. Write command line program to calculate square root of a prime.

Test Case = 1
Input = 13
Output = 3.60

Test Case = 2
Input = 7907
Output = 88.92

Test Case = 3
Input = 5113
Output = 71.50

Test Case = 4
Input = 3727
Output = 61.04

Test Case = 5
Input = 1879
Output = 43.34

37. Write command line program to calculate LCM of two numbers
LCM(a, b) = (a x b) / GCD(a, b)

Test Case = 1
Input = 15 25
Output = 75

Test Case = 2
Input = 15 20
Output =60

Test Case = 3
Input = 5 7
Output =35

Test Case = 4
Input = 50 100
Output =100

Test Case = 5
Input = 36 60
Output = 180

38. Write a command line program for Generate Multiplication Table.

Test Case = 1
Input = 3
Output = 3 6 9 12 15

Test Case = 2
Input = 3 6
Output =
3 6 9 12 15
6 12 18 24 30

Test Case = 3
Input = 9

Output = 9 18 27 36 45

Test Case = 4
Input = 10 11 12
Output =
10 20 30 40 50
11 22 33 44 55
12 24 36 48 60

Test Case = 5
Input = 7
Output = 7 14 21 28 35

39. Write a command line program for Count Number of Digits in an Integer.

Test Case = 1
Input = 12
Output = 2

Test Case = 2
Input = 5
Output = 1

Test Case = 3
Input = 12678
Output = 5

Test Case = 4
Input = 132
Output = 3

Test Case = 5
Input = 4109678
Output = 7

40. Write a command line program for Calculate the Power of a Number.

Test Case = 1
Input = 3 2
Output = 9

Test Case = 2
Input = 4 3
Output = 64

Test Case = 3
Input = 10 4
Output = 10000

Test Case = 4
Input = 2 10
Output = 1024

Test Case = 5
Input = 5 4
Output = 625

41. Write a command line program for Display Armstrong Number Between Two Intervals.

Test Case = 1
Input = 1 1000
Output = 1 2 3 4 5 6 7 8 9 153 370 371 407

Test Case = 2
Input = 100 to 1000
Output = 153 370 371 407

Test Case = 3
Input = 1000 to 10000
Output = 1634 8208 9474

Test Case = 4
Input = 400 500
Output = 407

Test Case = 5
Input = 3 10
Output = 3 4 5 6 7 8 9

42. Write a command line program for Display Factors of a Number

Test Case = 1
Input = 12
Output = 1 2 3 4 6 12

Test Case = 2
Input = 30
Output = 1 2 3 5 6 10 15 30

Test Case = 3
Input = 46
Output = 1 2 23 46

Test Case = 4
Input = 56
Output = 1 2 4 7 8 14 28 56

Test Case = 5
Input = 15
Output = 1 3 5 15

43. Write a command line C program to separate odd and even numbers in the given array. First display all even numbers and then odd numbers.

Test Case= 1
Input = 2 7 3,6 8
Output = 2 6 8 7 3

Test Case = 2
Input = 12 45 37 36 88 64
Output = 12 36 88 64 12 45 37

Test Case=3
Input = 90 2 34 7 5 6
Output = 90 34 6 2 7 5

Test Case= 4
Input = 3 8 6 9 1
Output = 8 6 3 9 1

Test Case= 5
Input = 69 75 66 5 4 8
Output = 66 4 8 69 75 5

44. Write a command line program to find median of given sequence. If the sequence contains even number of elements then take the average middle two elements.

Test Case= 1
Input = 4 2 3
Output = 3

Test Case= 2
Input = 2 5 7 9
Output = 6.5

Test Case= 3
Input = 5 2 8 4 10
Output = 5

Test Case= 4

Input = 11 27 39 22 10 44
Output = 24.5

Test Case= 5
Input = 2 9 3 1 8 6 11
Output = 6

45. Write a command line program to print Floyd's triangle for given number of rows.

Test Case= 1
Input = 3
Output =
1
2 3
4 5 6

Test Case= 2
Input = 4
Output =
1
2 3
4 5 6
7 8 9 10

Test Case= 3
Input = 5
Output =
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

Test Case= 4
Input = 7
Output =
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21
22 23 24 25 26 27 28

46. Write a command line program to print Pascal triangle for given number of rows.

```
Test Case= 1
Input =  2
Output =
 1
1 1

Test Case= 2
Input =  3
Output =
   1
 1   1
1  2  1

Test Case= 1
Input =  4
Output =
          1
         1  1
        1 2 1
       1 3  3 1
```

47. C Programming Code to Create Pyramid Structure.

```
Test Case = 1
Input = 1
Output =
Test Case = 2
Input =
Output =
Test Case = 3
Input =
Output =
Test Case = 4
Input =
Output =
Test Case = 5
Input =
Output =
```

48. Write a command line C program to find minimum and maximum numbers of given numbers.

```
Test Case= 1
Input = 345 31 26  2347 100
Output =  2347 26
```

Test Case= 2
Input = 3 8 1 9 2
Output = 9 1

Test Case= 3
Input = 23 59 68 44 29 98 10
Output = 98 10

Test Case= 4
Input = 55 98 62 1 88 5
Output = 98 1

Test Case= 5
Input = 4 9 2 7 6
Output = 9 2

49. Write a program to print number of 1's in given integer number. for example if the number is 72 then number of 1's are 2.(Use binary representation of the number)

Test Case= 1
Input = 72
Output = 2

Test Case= 2
Input = 158
Output = 5

Test Case= 3
Input = 7598
Output = 9

Test Case= 4
Input = 125893
Output = 11

Test Case= 5
Input = 7
Output = 3

Programs using Strings

50. Write a command line program for Display Characters from one character to other character Using Loop.

Test Case = 1
Input = a e
Output = a b c d e

Test Case = 2
Input = D K
Output = D E F G H I J K

Test Case = 3
Input = P T
Output = P Q R S T

Test Case = 4
Input = m p
Output = m n o p

Test Case = 5
Input = T W
Output = T U V W

51. Write command line program to check if a string is palindrome or not.

Test Case = 1
Input = ABA
Output = ABA is palindrome

Test Case = 2
Input = SGGS
Output = SGGS is palindrome

Test Case = 3
Input = xcvDbmMbDvcx
Output = xcvDbmMbDvcx is not a palindrome.

Test Case = 4
Input = ASMpMSA
Output = ASMpMSA is a palindrome

Test Case = 5
Input = KMCVDSDVCNK
Output = KMCVDSDVCNK is not a palindrome

52. Write command line program to reverse a string

Test Case = 1
Input = compuTer
Output = reTupmoc

Test Case = 2
Input = Ichalkaranji
Output =ijnaraklahcI

Test Case = 3
Input = proGraMming
Output = gnimMarGorp

Test Case = 4
Input = Ninja
Output = ajniN

Test Case = 5
Input = fibonacci
Output =iccanobif

53. Write a command line program to convert all vowels in a given string to uppercase.

Test Case=1
Input = hello
Output = hEllO

Test Case=2
Input = computer
Output = cOmpUtEr

Test Case=3
Input = programming
Output = prOgrAmmIng

Test Case=4
Input = structure
Output = strUctUrE

Test Case=5
Input = algorithm
Output = AlgOrIthm

54. Write a command line program to find number of words from a CamelCase Word.

Test Case= 1
Input = GoodMorning
Output = 2

Test Case= 2
Input = HelloWorld
Output = 2

Test Case= 3
Input = PascalProgrammingLanguage
Output = 3

Test Case= 4
Input = TextileAndEngineeringInstitute
Output = 4

Test Case=5
Input = TheLostWorld
Output = 3

55. Write a command line program to check if a given string is present in another string.

Test Case= 1
Input = ing Programming
Output = Yes

Test Case= 2
Input = pac compact
Output = Yes

Test Case= 3
Input = Engineer TextileAndEngineeringInstitute
Output = Yes

Test Case= 4
Input = Istitute TextileAndEngineeringInstitute
Output = No

Test Case= 5
Input = comp Welcome
Output = No

56. Write a command line program to check whether two strings are anagrams or not. Two words are said to be anagrams of each other if the letters of one word can be rearranged to form the other word. So, in anagram strings, all characters occur the same number of times. For example, "abc" and "cab" are anagram strings, as every character 'a,' 'b,' and 'c' occur the same number of times (one time here) in both the strings.

Test Case= 1
Input = abc acb
Output = Yes

Test Case= 2
Input = contex texcon
Output = yes

Test Case= 3
Input = pot toc
Output = No

Test Case= 4
Input = brake kobra
Output = No

Test Case= 5
Input = creative reactive
Output = Yes

57. Write a program to check whether the given sentence is pangram or not. The sentence “The quick brown fox jumps over the lazy dog" is known as a *pangram* because it contains every letter of the alphabet.

Test Case= 1
Input = The quick brown fox jumps over the lazy dog
Output = Yes

Test Case= 2
Input = `We promptly judged antique ivory buckles for the next prize`
Output = Yes

Test Case= 3
Input = `We promptly judged antique ivory buckles for the prize`
Output = No

Test Case= 4
Input = How razorback jumping frogs can level six piqued gymnasts
Output = Yes

Test Case= 5
Input = How jumping frogs can level six piqued gymnasts
Output = No

58. Write a program to find numeric weight of given lowercase string. Assume lower case letters has been assigned values for 1 to 26 for alphabets ‘a’ to ‘z’. for example weight of string “apple” is 1+16+16+12+5 = 50

Test Case= 1
Input = apple
Output = 50

Test Case= 2
Input = hack
Output = 23

Test Case= 3
Input = watch
Output = 53

Test Case= 4
Input = aaa
Output = 3

Test Case= 5
Input = car
Output = 22