DAY 1:

**Basic Level If-else**

1. Swap 2 variable without using 3rd variable .(🡺three answer)
2. Accept three no and find out the highest no.
3. Accept a year from user check if it is leap year or not
4. Accept a character from user and reverse the case eg. Input aout put A
5. Accept a character from user and check if it is vowel or not
6. Accept a marks from user and print it’s grade
   1. Mks>=75 grade A
   2. Mks>=55 grade B
   3. Mks>=35 grade c
   4. Else fail
7. Accept a number from user - if it is divisible by 3 print “three” , if it is divisible by 7 print “seven” and if it is divisible by both(3,7) print “three -seven”
8. An electric power distribution co. charges its domestic consumers as follows

follows: consumption units

* 1. 0-200 0.50 perunit
  2. 201-400 100+0.65 pu.excess of 200
  3. 401-600 230+0.80pu.excess of 400
  4. 601 and above 390+1.00pu in excess of 600

1. Accept a number from user check if it is odd or even number
2. Enter sex m/f and salary- if m-salary>8000 tax is 5% of salary else 2%if f-salary>5000 tax is 3% else tax is 1% find a net salary=salary-tax
3. Accept 3 digit number from user and do the sum of its digit .(do not use any loop)
4. Accept years of investment rate of interest and principal amount of investment find simple interest
5. **Problem:** Given the length of four sides determine whether they can be used to create a polygon and determine if that polygon is a square. A polygon can be created if no single side is greater than the sum of the other three sides. Display a ONE when the status (polygon or square) is confirmed and ZERO when the status cannot be confirmed.

**Example Execution #1:**

Enter the length of the four sides: 4 3 2 9

Length of sides: 4, 3, 2, 9

Polygon status: 1

Square status: 0

**Example Execution #2:**

Enter the length of the four sides: 5 5 5 5

Length of sides: 5, 5, 5, 5

Polygon status: 1

Square status: 1

**Example Execution #3:**

Enter the length of the four sides: 84 25 20 15

Length of sides: 84, 25, 20, 15

Polygon status: 0

Square status: 0

Q14 Assignment 1 ( Determining the Type of a Triangle)

**Problem Statement:**

Consider a triangle with three sides measuring a, b, and c units. A triangle is a right-angled triangle if  
a 2 + b2 = c2

Allow a tolerance of 0.000001 in the comparison in the above case i.e  
a2 + b2 = c2 +/- 0.000001

A triangle is an isosceles triangle if any two of its sides are equal.  
A triangle is an equilateral triangle if all the three sides are equal.

Three values can be the dimensions of a triangle if and only if the sum of every pair of values isgreater than the third value. Otherwise, it is an invalid triangle.

Write a program that reads three real numbers and finds out whether they can be the sides of thetriangle and if they do, prints what type of triangle it is. Even though all equilateral triangles are isosceles, your program should classify an equilateral triangle to be an equilateral only. Similarly  
isosceles right-angled triangles should be classified as right-angled and not isosceles. A valid trianglewhich does not belong to any of the special types belongs to the notspecial category.  
The three sides will be given as real numbers separated by blanks. The program should print the typeof the triangle in words using lower case letters followed by eoln without any blanks.  
Thus the possible answers are

invalid

right-angled

isosceles

equilateral

notspecial

DAY2:

**LOOP**

1. Accept 10 number user and do sum of it.(do not use array)
2. Accept a number from user and find a factorial of a number
3. Accept 10 number from user count how many are positive ,negative , zero
4. Accept a nu’`mber from user and do sum of digit
5. Accept a number from user and reverse it.
6. Accept a number from user and check if it is palindrome number or not eg (121)
7. Accept a number from user and print a table of that number
8. Accept a number from user check if it is special number or not
   1. Eg.145
   2. 1! =1
   3. 4!=1\*2\*3\*4
   4. 5!=1\*2\*3\*4\*5 sum of it(1+24+120=145)
9. Accept a number from user and check if it is armstrong number or not
   1. Eg 153
   2. 1 cube
   3. 5 cube
   4. 3 cube sum of it (1+27+125=153)
10. Go on accepting number from user till user enter 0 and do sum of it.\*
11. Accept a number from user and print next 5 numbers.
12. Accept a number from user and print that many numbers after the number.
13. Accept start and end range from user and print all even number between them. (two answer)
14. Accept start and end range from user and print all odd number between them. (two answer)
15. Accept term from user and print Fibonacci series\*
16. Accept two number from user and print it’s LCM\*
17. Accept a number from user accept a digit from user and check the occurrence of that digit
18. Accept 10 number from user and print highest number\*
19. Accept 10 number from user and print lowest number.\*
20. Accept 10 number from user and print highest and 2nd highest number.\*
21. Write a prog to print every integer between 1 and n divisible by m. also report whether the number that is divisible by m is even or odd.

DAY 3:

**Nested Forloop break/continue**

1. Print all special number between 1 to 200000
2. Print all Armstrong number between 100 to 999

1\*1=1

1\*2=2

1\*3=3

1\*4=4

1\*5=5

1\*6=6

1\*7=7

1\*8=8

1\*9=9

1\*10=10

2\*1=1

2\*2=4

2\*3=6

2\*4=8

2\*5=10

2\*6=12

2\*7=14

2\*8=16

2\*9=18

2\*10=20

1. Accept a number from user and print table till that number
   1. Input 2
   2. o/p
2. Accept a number from user and print table till that number input 2
   1. o/p

2\*1=1

2\*2=4

2\*3=6

2\*4=8

2\*5=10

2\*6=12

2\*7=14

2\*8=16

2\*9=18

2\*10=20

1\*1=1

1\*2=2

1\*3=3

1\*4=4

1\*5=5

1\*6=6

1\*7=7

1\*8=8

1\*9=9

1\*10=10

1. Pattern

|  |  |  |
| --- | --- | --- |
| 1  12  123 | 1  22  333 | 1  2 2  3 3 3 |
| 1  23  456 | 1  12  123 | 1  21  321 |
| 1  121  12321 | 1  121  12321  121  1 | 32123  323  3 |
| 1  222  33333 | 0  101  21012 | zyxyz  zyz  z |
| a  ab  abc | \*  \*\*  \*\*\*  \*\*\*\* | \*\*  \* \*  \*\* |
| --\*\*--  -\*--\*-  \*----\* | 1  121  12121 | 321  32  3 |
|  | 1 1  2  3 3 |  |

1. Write program to print following pictures.

ABCDEFGHIJKLMNOPQRST

ACEGIKMOQS

ADGJMPS

AEIMO

1. Write a program to generate the following figure using loop construct

ABCDEBCDECDEDEE

ABCDEBCDECDEDE

ABCDEBCDECDE

ABCDEBCDE

ABCDE

1. Accept a number from user and check if it is prime number or not
2. Accept two number from user and find HCF
3. Print all prime number between 51 to 100
4. Print twin prime number between 1 to 20
5. Accept a number from user and print that many prime number after the number
6. Write a program to determine and print the sum of the following harmonic series for a given value if n1+1/2+1/3+….1/n

DAY 4:

**SWITCH**

1. Give choice to user
   1. square
   2. Cube
   3. exit

as per user choice display result if user enter invalid choice give appropriate message.

1. Do the same example above but you program should not exit unless user enter choice “c”
2. Accept date month and year from user and print date in formatedd-mmm-yyyy
   1. Eg. Input 12/3/2012 o/p 12 january 2012
3. give choice to user

1.+

2.\*

3./

4. exit

as per user choice display result if user enter invalid choice give appropriate message.

**Recursive function**

1. Find factorial of a number
2. Find binary of a number
3. Find Fibonacci series
4. Find HCF
5. Accept a number from user and do sum of digit

DAY 5:

1. Accept 5 number in an array, accept a number from user and check if given number is there in an array or not
2. Accept 5 number in an arrayand sort it (bubble sort)
3. Accept 5 number in an array and sort it (selection sort)
4. Accept 5 number in an array and sort it (insertion sort)
5. Accept two set of array each having 5 element sort it and put it in new array
6. Accept 5 number in an array, accept a number from user and check if given number is there in an array or not use binary search
7. Accept 5 number in an array ( repeat numbers ) print unique array
8. Accept 10 number in an array accept a index and a new number and add that number at that index
9. Accept 10 number in an array accept a number to be deleted from array and print new array
10. Accept data in 3\*3 matrix two times and do the sum of it
11. Accept data in 3\*3 matrix two time and do multiplication of matrix
12. Accept data in 4\*4 matrix and transpose it
13. Accept data in 4\*4 matrix and check if it is magic square or not
14. Accept data in 3\*3 matrix and print row wise and column wise total
15. Accept marks and roll number of 10 students and display maeks in ascending order
16. Accept 10 number in an array and print highest 3 number
17. Accept 5 number in an array and display message entered data is in ascending/descending or not sorted
18. Accept 10digit number print longest ascending number
    1. Eg 2156897456 o/p 15689

Day 6

**String**

1. Accept string from user , accept a character from user and count the occurrence of the same
2. Accept string and check if it is palindrome or not eg(nitin)
3. Accept a string and reverse it.
4. Accept a sentence from user and count number of words
5. Accept two string append 1st one with the second one
6. Accept two string and check both are same or not
7. Accept 5 name from user and print their name in ascending order
8. Accept 5 name from user , accept a name from user and check that name is there in array or not
9. Accept a string accept a character and delete all occurrence of that characterWrite a program to extract the portion of a string and print the extracted string. Assume that m characters are extracted, starting from n character
10. Accept a start and end range of a character,eg start A end F
    1. Ask user to enter any character between that range
    2. You have to print which character user has not entered
    3. Eg input start A end F entered character by user are BEF o/p ACD
11. Read a five-letter word into the computer, then encode the word on a letter-by-letter basis by

subtracting 30 from the numerical value that is used to represent each letter. Thus if the ASCII

character set is being used, the letter a (which is represented by the value 97) would become a C

(represented by the value 67), etc.

Write out the encoded version of the word. Test the program with the following words: white, roses,

Japan, zebra.

Day 7

Structure

1. Define a structure called cricket that will describe the following information

Player name

Team name

Batting average

Using cricket, declare an array player with 10 elements and write a program to read the information about all the 10 players and print a team wise list containing names of players with their battingaverage.

1. Define a structure called student that will describe the following information

Name

Div

%obtain

Using studentt, declare an array marksheet with 10 elements and write a program to read the information about all the 10 students and print a division wise list containing names of student with their % obtain

**FILE**

1. There are 10 records present in a file with the following structure :

struct

{

charitemcode[6];

charitemname [20];

intqty;

};

Write a program to read these records and display them in ascending order on the field itemname and write them into a text file in ascending order.

1. Accept 5 line from user and print it in a file
2. Define a structure to represent time in hours (0-23), minutes (0-59), and seconds (0-59), and

then write a function that accepts an argument of type time represented by this structure and

1. updates it by one second & 30 seconds
2. Read 1st 2 line from file
3. Print 10 line in a file then ask user which line it wants to read accordingly display that line
4. Read a file and copy it in reversing order in to another file
5. Read a file and count how many lines ,space and words are there
6. Create a text file using any simple editor. Write a program that will reverse each line in the input file and store it in another file.
7. Program to write even and odd integers into different files.
8. Write a program that will read each line in a file and store it in another file with the sequence reversed, that is, the first line in file one should be the last line in file two and so on.
9. Write a program to search a word from a text file.
   1. 1. If the word is found print a message that the word is found along with the position of the word in the file.
   2. 2. If the word is not found, print the message that the word is not found along with the total number of words in the file.
10. A user requires to do the following operations:

1.Number the lines in a file

2.Display**n** lines from a given line number.

3. Delete a particular line

4. Search for a given word and print all the lines where the word is found

DAY 8

1. Write a program to maintain a singly linked list having the following functions:

a. Creation of the list

b. Displaying the list.

c. Traverse through the linked list and subtract two consecutive nodes. The result

should be inserted just before the nodes subtracted.

E.g.: 4 15 8 14 2 6

Output: -11 4 15 -6 8 14 -4 2 6

1. Write a program to maintain a singly linked list having the following functions:
   1. Creation of the list
   2. Displaying the list.
   3. Sort list
   4. Insert node
   5. Delete node
2. Stack
3. Que