Assignment-1.

03/03/2022.

Q.1. Check the given number is even or odd.

⇒

Step.1 :- Start

Step.2 : Accept /Read the number.

Step.3 : Divide the number by 2. and store the remainder in R.

Step. 4 : if R=0. print number is even.

Step 5 : else print - number is odd.

Step. 6 : Stop

Q.2 Write a java program to find the factorial of given numbe

⇒ Step 1 : Start.

Step 2 : Accept one number.

Step 3 :- Read the number and assign it to a variable

Step 4 : multiply That number by the integers ~~up~~ less than the number upto 1.

Step 5 : update The value and print.

Step 6 : Stop

Q.3. Find the factorial of a number using recursion.

⇒

step.1 ! Start.

step 2 : Accept and read the number n.

Step 3 ! call factorial (n)

Step 4 ! print factorial

Step 5 : Stop.

```
Factorial (n)
Step 1: IF n==1 then return 1.
Step 2: else
            F = n* Factorial (n-1)
Step 3: Return F.
```

Q.4 Swap two numbers without using third variable approa

→

```
Step 1 : Start.
Step 2 : accept 2 numbers and ~~read~~ store them in variable a,b
Step 3 : Define a=b and b=a.
Step 4 : print a and b.
Step 5 : Stop.
```

Q.5. How to check the given number is positive or negati in java?

→

```
Step 1 : Start
Step 2 : Declare avariable and initialize it as n.
Step 3 : call the method signum() to check whether
         it is positive or negative.
Step 4 : Display the result.
Step 5 : Stop

signum().
Step 1 : if $n=0$, return 0.
         ifelse $n>0$, return 1.
         else $n<0$, return -1.
```

Q.6. Write a java program to find whether given numb is leap year or NOT

→

```
Step 1 : Start.
Step 2 : accept the year in integer form. ~~and store it in~~
Step 3 : ~~if it is~~ devide the number by 4 and
         store it into R.
Step 4 : if R=0 print "Leap year"
```

else print " Not a leap year".
Step 5: Stop.

Q.7 Write a java program to print 1 to 10 without using loop.

→

Step 1 : Start.
Step 2 : accept ~~to~~ 1 to 10 integer numbers and store them into variables.
Step 3 : write a print statement and print them
Step 4 : Stop

Q.8. write a java program to print the digits of a given number.
→ Step 1 : Start.
Step 2 : Accept the number.
Step 3 : divide the number by 10, Remainder. ~~ans~~ store into variable Remainder
Step 4 : print Remainder.
Step 5 : Now, number = number/10.
Step 6 : Repeate step 3. while (number > 0).
Step 7 : Stop.

Q.9. write the java program to print all the factors of the given number.
→ Step 1 ! Start.
Step 2 : Read the given number.
Step 3 ! devide the given number by integers less than than or equal to the number and greater than zer
Step 4 ! ~~if th~~ and store the Remainder ~~answers~~ in R. variabl
Step 5 ! if R is equal to zero print the int. number
Step 6 ! else print "No-factors" / "prime number"

Q.10. write a java program to find the sum of the digits of a given number.
→ Step 1 : Start.
Step 2 : Read the number and store it into N. / initial in N
Step 3 : Declare sum(s) ~~to~~ variable to store the su of numbers and initialize it to 0.

Date

Step 4: find the remainder by using modulo (%) oper. it returns the last digit of the number.

Step 5: Add the last digit to the variable sum

Step 6: divide the number by 10. for removing last digit of N.

Step 7: Repeat Step 4 - 6 while (N>0)

Step 8: finally print the sum var. value

Step 9: Stop.

Q.11. Write a java program to find the smallest of 3 numbers(

→ Step 1: Start

Step 2: Take three numbers in a, b, c.

Step 3: Check if a is less than b.

Step 4: If above condn. is true, go to Step 5, else go to Step 7.

Step 5: check if c is less than a.

Step 6: If above condition is true, c is the smallest, else a is the smallest. Go to step 9.

Step 7. Check if b is less than c.

Step 8: if above condn. is true, b is the smallest else c is the smallest.

Step 9: Stop.

Q.12. How to add two numbers without using the arithmetic operators in java?

→ Step 1: start

Step 2: x++ ; y-- ;

Step 3: Repeat Step 2 until y becomes 0.

Q.13. Algorithm to reverse a given number.

→ Step 1: Start.

Step 2: accept a number and store it in num.

Step 3: sum=0

Step 4: Rem. = num % 10
sum = (sum×10)+Rem

```
        num = num/10
Step 5 : if (num>0) then goto step 4.
Step 6 : display reversed no. i.e sum.
Step 7 : Stop
```

Q.14 Alogo. to find GCD of two given numbers.

```
→ Step 1 : Start.
  Step 2 : Declare n1 , n2 , gcd=1 , i=1
  Step 3 : take input for n1 and n2
  Step 4 : If i <= n1 and i <= n2 go to step 5 else step 6
  Step 5 : check if n1 % i = 0 && n2 % i = 0
               return gcd = i
           else i = i+1
  Step 6 : print gcd.
  Step 7 : Stop.
```

Q.15. Algorithm to print LCM of given numbers.

```
→ Step 1 :- Start
  Step 2 : accept two numbers and store in n1 & n2
  Step 3 : If n1 > n2 LCM=n1
           else LCM=n2
  Step 4 : validate LCM is divisible by both n1 & n2
  Step 5 :- If divisible print LCM of two numbers
  Step 6 :    else the value of LCM is increased
              and goto step (4).
  Step 7 : Stop
```

Q.17. Algorithm to check whether given number is palindrom or not

```
→ Step 1 : Start
  Step 2 : input the number.
  Step 3 : If the reverse of the number is equal
           to the number then return true
  Step 4 : else return false.
  Step 5 : Stop.
```

Q.18. ~~Algo.~~ to print all the prime factors of given number.

Step 1 : Start

Step 2 : input a number from user, store it in some variable say num.

Step 3 : Run a loop from 2 to num/2, increment i in each iteration the loop structure should loo like for (i = 2; i<=num/2 ; i++)

Step 4 : inside the loop, first check if i is a fact of num or not. If it is a factor then check it is prime or not.

Step 5 : print the value of i if it is prime and a factor of num.

Step 6 : Stop

Q.19. Even number from particular Range 2, 4, - - -10

Step 1 : Start

Step 2 : initialize sum = 0 , n = 2

Step 3 : sum = sum + n

Step 4 : n = n + 2 print n

Step 5 : if n > 10 repeat Step 3.
~~else print n value~~

Step 6 : stop.

Q.20. Algo. print odd num. series from range 1, 3, 5 ...1

Step 1 : Start.

Step 2 : initialize sum = 0 , n = 1

Step 3 : n = sum + n

Step 4 : n = n + 2 and print n.

Step 5 : if n >= 14

Step 6 : Stop.