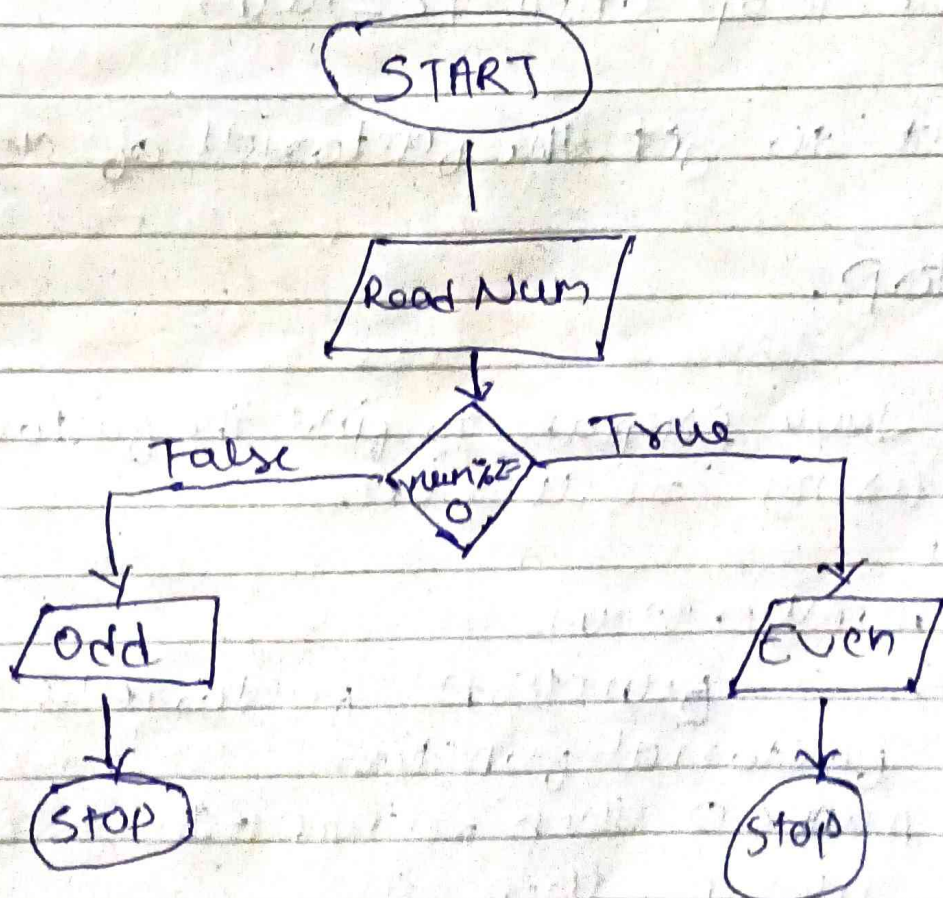


## Assignment 1

① Check if the given number is Even or Odd.

- ⇒ Start
- ⇒ Read Num
- ⇒ If Num is divisible by 2. ~~Go to~~ then number is even if not divisible then odd
- ⇒ STOP.





2. Write a Java program to find the factorial of a given number.

⇒ Start

⇒ Read the input number from the user

⇒ Declare & initialize variables  $fact = 1$  &  $i = 1$ .

⇒ Repeat the loop until  $i \leq num$ .

⇒ Print fact to get the factorial of a given no

⇒ ~~Stop~~ Stop.

3. Write a Java program to find the factorial of a number using recursion.

Step 1: Start

Step 2: Read number num

Step 3: Make a function factorial.

Step 4: Call factorial function.

Step 5: If  $num < 0$  then return -1

Else if  $no = 0$  then 1.

Else

return  $(no * factorial(no - 1))$

Step 6: Print factorial fact.



4. Swap two numbers without using the third variable

- ⇒ Start
- ⇒ Enter A, B
- ⇒ Print A, B
- ⇒  $A = A + B$
- ⇒  $B = A - B$
- ⇒  $A = A - B$
- ⇒ Print A, B
- ⇒ End.

5. How to check whether the given no is positive or negative in java.

- ⇒ Start
- ⇒ Input a number
- ⇒ Check if number  $> 0$
- ⇒ If greater than 0 print positive.
- ⇒ If less than 0, print negative
- ⇒ Stop.



Q6. Write a program to find whether a given number is leap year or not?

- ⇒ START
- ⇒ Take input year
- ⇒ Check if  $\text{year} \% 400 == 0$  ||  $(\text{year} \% 4 == 0 \text{ \& } \text{year} \% 100 \neq 0)$
- ⇒ If condition satisfies leap year else
- ⇒ Not a leap year
- ⇒ Stop

Q7. Write a Java program to print 1 to 10 without using loop?

- |                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>⇒ START</li> <li>⇒ <math>\text{println}(1 \text{ to } 10)</math></li> <li>⇒ stop</li> </ul> | <ul style="list-style-type: none"> <li>Start</li> <li>⇒ Recursive function               <ul style="list-style-type: none"> <li>if <math>(n \leq 10)</math> {</li> <li><math>\text{println}(n)</math>;</li> <li><math>\text{recursive function}(n+1)</math>;</li> <li>}</li> </ul> </li> <li>⇒ call from main</li> <li>⇒ stop</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



8. Write a Java program to print the digits of a given number.

- ⇒ Start
- ⇒ Read input
- ⇒ Declare  $x, y, z$   
 $x = n \% 10$   
 $n = n / 10$
- ⇒  $y = n \% 10$   
 $n = n / 10$
- ⇒  $z = n \% 10$   
 $n = n / 10$
- ⇒ Print  $z, y, x$
- ⇒ Stop.

9. Write a Java program to find all the factors of given number.

- |                                |                             |
|--------------------------------|-----------------------------|
| ⇒ Start                        | ⇒ if $num \geq \frac{a}{2}$ |
| ⇒ Take input $a$               | ⇒ Stop.                     |
| ⇒ declare $num$                |                             |
| ⇒ check $num \leq \frac{a}{2}$ |                             |
| ⇒ $a \% num = 0$               |                             |
| ⇒ Print $num$                  |                             |
| ⇒ Repeat 4                     |                             |



10. Write a java program to find the sum of the digits of a given number.

⇒ Start  
⇒ Read num.  
⇒ Declare & initialize  $sum = 0$ ;  
⇒ Take loop (number > 0)  
     $r = \text{number} \% 10$ ;  
     $sum = sum + r$ ;  
     $num = num / 10$ ;

⇒ Stop.

11. Write a java program to find smallest of 3 numbers (a, b, c);

⇒ Start  
⇒ Take input a, b, c.  
⇒ Check if  $\text{smallest} = (a \leq b) ? (a < c ? a : c) : (b < c ? b : c)$ ;  
⇒ Print Smallest.  
⇒ Stop.

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

⇒ Start  
⇒ Take input a, b  
⇒ Use For loop where loop will run



from 1 to b inside it a value will be incremented everytime return a

⇒ Point a

⇒ stop.

13. Write a java program to reverse a given number.

⇒ Start

⇒ Take input

⇒ Get remainder  $\text{num} \% 10$ ,

⇒  $\text{reverse} = \text{reverse} \times 10 + \text{remainder}$

⇒  $\text{number} = \text{number} / 10$

⇒ Do the process from 3 to 5 until number becomes 0.

⇒ print reverse.

⇒ End.

14. Write a Java program to find HCF of two given numbers.

⇒ START

⇒ Input  $n_1, n_2, i = 1, \text{Min} = 1$

⇒  $\text{Min} = (n_1 < n_2) ? n_1 : n_2$



17. Check whether the given number is a palindrome or not?

- ⇒ Start.
- ⇒ Read input
- ⇒ Hold number in temporary variable
- ⇒ reverse the number
- ⇒ Compare temporary with reversed number
- ⇒ if both numbers are same print palindrome number
- ⇒ Else not a palindrome.
- ⇒ End.

18. Write a java program to print all the prime factors of the given number.

- ⇒ Start
- ⇒ Read input.