Week - 2 (Conditional, Repetition, and String manipulation)

1. Given one positive integer **n**. Find the factorial of that positive integer. (Note: 0! = 1)
   Input: always positive

Input	Output
5	120
0	1
2	2
7	5040
1	1
6	720
10	3628800
15	2004310016

2. Given the positive integer **n** and check **n** is prime number or not.

Input	Output
2	Prime
5	Prime
12	Not Prime
25	Not Prime
47	Prime
13849384	Not Prime
104729	Prime

3. Given the positive integer **n**, sum all numbers from **1** to **n** (inclusive), and print the result. (You can use loop, but if you can do it without using loop, you are the best)

Input	Output
10	55
5	15
25	325
100	5050
200	20100
1000	500500
0	0

4. You are given one String and one Integer. You need to print out every string at index that can be divisible by given int. (Note: index starts from 0, divider > 0)

Input	Output
Tutorism is Everywhere 3	TosiErhe
VueJS is da best 4	VS b
i love python programming 3	io tnrrmg
to good at coding, you code 5	to nod
you suck, we suck, everyone sucks 7	ykues
easy peasy lemon squeezy 1	easy peasy lemon squeezy

5. Write a program to print the text inside-out (reverse the text from the middle to both ends). For example, giving the text "elephant", the output is "peletnah". If the given text is "hello", the output should be "ehlol". (Note: input is only one word)

Input	Output
elephant	peletnah
hello	ehlol
programming	rgorpagnimm
pyapongay	paypoyagn
wholovesjava	volohwavajse
pythonista	ohtypatsin
bananapapaya	ananabayapap

6. You are given two strings str1, and str2. If the shorter string appears in the longer string, please remove the shorter string that appear in the longer string.
   (Note: CASE SENSITIVE, str1 and str2 will not has the equals length)
   (Hint: use indexOf(String str) method from String class)

Input	Output
boypluzplustutorplus plus	boypluztutor
plu boypluzplustutorplus	boyzstutors
teerapat sea	teerapat
pyapongaygayblahgaygy gay	pyaponblahgy
idontwanttocreatetestcases t	idonwanocreaeescases
lolhellololholahalol lol	heholaha

7. Receive 2 string as input. Write program to check that two string is match or not.
   a. If two string is all character is same (CASE SENSITIVE) print "Perfect Match"
   b. If two string is all character is same but case is not same print "Partial Match"
   c. If one string is substring of another string print "Partial Match" (CASE INSENSITIVE)
   d. Otherwise print "Not Match"

Input	Output
abcd ABCD	Partial Match
CSCMS CSCMS	Perfect Match
ABCD FGHI	Not Match
ilovepython LOVE	Partial Match
lolisnotgood LOLIS	Partial Match
practicemakesbetter MADE	Not Match

8. You are given a string of binary numbers. Write a program to convert given binary string to decimal number.

Input	Output
10	2
111	7
00110010	50
1101101	109
11001111	207
1001001	73

9. You are given a decimal number. Write a program to convert it into octal number (base 8).

Input	Output
9	11
15	17
35	43
20	24
50	62
1000	1750
1009	1761

10. You are given one integer N that is the length for each side of cube. Output this cube by using '*' for the border of cube and use '-' for the other part of cube.

Input	Output
| 5 | ```
----*****
---*---**
--*---*-*
-*---*--*
****---*
*---*--*
*---*-*
*---**
*****
``` |
| 4 | ```
---****
--*--**
-*--*-*
****--*
*--*-*
*--**
****
``` |
| 10 | ```
-------********
------*------**
-----*------*-*
----*------*--*
---*------*---*
--*------*----*
-*------*-----*
********------*
*------*-----*
*------*----*
*------*---*
*------*--*
*------*-*
*------**
********
``` |
| 8 | ```
-------********
------*------**
-----*------*-*
----*------*--*
---*------*---*
--*------*----*
-*------*-----*
********------*
*------*-----*
*------*----*
*------*---*
*------*--*
*------*-*
*------**
********
``` |

11. You are a lover of bacteria. You want to raise some bacteria in a box. Initially, the box is empty. Each morning, you can put any number of bacteria into the box. And each night, every bacterium in the box will split into two bacteria. You hope to see exactly X bacteria in the box at some moment. What is the minimum number of bacteria you need to put into the box across those days?

(Hint: For the first sample, we can add one bacterium in the box in the first day morning and at the third morning there will be 4 bacteria in the box. Now we put one more resulting 5 in the box. We added 2 bacteria in the process, so the answer is 2. For the second sample, we can put one in the first morning and in the 4-th morning there will be 8 in the box. So, the answer is 1.)

(Big Hint: Think about the number of zero or ones in binary representation of the given input number.)

Input	Output
5	2
8	1
13	3
20	2
39	4
69	3
98	3
200	3
3	2