Hands-on No. : **3**

Topic : **Control Flow Statements**

Date : **04-05-2024**

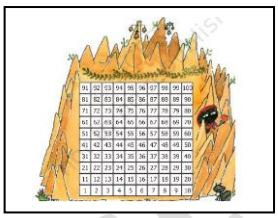
Solve the following problems

Question No.	Question Detail	Level
1	Take values of length and breadth of a rectangle from user and check if it is square or not. Sample Input: 5, 3 Sample Output: Not a Square Sample Input: 7, 7 Sample Output: Square	Easy
2	Write a program to check whether the given number is odd or even. Sample Input: 20 Sample Output: Even Sample Input: 87 Sample Output: Odd	Easy
3	Write a program to get a number from the user and print whether it is positive, negative or zero. Sample Input: 56 Sample Output: positive Sample Input: -235 Sample Output: negative	Easy
4	Write a program to check whether a kid is eligible for kinder garden school admission. If a child is of age 4 or more then he/she is eligible. Sample Input: 4 Sample Output: Eligible Sample Input: 2 Sample Output: Not Eligible	Easy

It is going to be hard but, hard does not mean impossible.

5	Write a program to find the mobile chosen is within the budget or not. To find the budget mobiles is based on the below-mentioned criteria, a) If the cost of the mobile chosen is less than or equal to 15000 then display it as "Mobile chosen is within the budget" b) If the cost of the mobile chosen is greater than 15000 then display it as "Mobile chosen is beyond the budget" Sample Input: 12000 Sample Output: Mobile chosen is within the budget Sample Input: 22000 Sample Output: Mobile chosen is beyond the budget	Easy
6	Given 2 integer values, 'a' and 'b', return their sum. However, "teen" values in the range 13…19 inclusive, are extra lucky. So, if either value is a teen, just return 19. Sample Input: 3, 4 Sample Output: 7 Sample Input: 13, 8 Sample Output: 19	Easy
7	Kumar is purchasing certain items in a store. While purchasing certain items, a discount of 10% is offered to his if the quantity purchased is more than 1000. Help, Kumar to calculate the total expenses. Sample Input: 1200, 15.50 Sample Output: 16740.0 Sample Input: 200, 15.50 Sample Output: 3100.0	Easy
8	In Chai Sung's family the birthright will be given to the firstborn as a custom. Who will get the birthright among his three sons Choi Sung, Moui Sung, and Bhoi Sung if their ages are the input values? Sample Input: 34, 26, 18 Sample Output: Choi Sung Sample Input: 28, 16, 30	Easy

	Sample Output: Bhoi Sung	
9	Write a program to check error in marks entry while user enters the marks in the system. Consider Error as marks entered less than 0 and more than 100. Sample Input: 83 Sample Output: Valid entry Sample Input: 101 Sample Output: Invalid entry Sample Input: -6 Sample Output: Invalid entry	Easy
10	Write a program that accepts three numbers from the user and prints "increasing" if the numbers are in increasing order, "decreasing" if the numbers are in decreasing order, and "Neither increasing or decreasing order" otherwise. Sample Input: 3 6 8 Sample Output: Increasing order Sample Input: 9 5 1 Sample Output: Decreasing order Sample Input: 4 9 2 Sample Output: Neither increasing nor decreasing order	Easy
11	Smith and John, grade 3 students playing number games. When Smith gives a number John will say the natural numbers up to that number but in reverse order. Shia, their friend will say the sum of those numbers. Help John and Smith with your program. Sample Input: 4 Sample Output: 4 3 2 1 , 10 Sample Input: 7 Sample Output: 7 6 5 4 3 2 1 , 28	Easy
12	Kittu the 'Giant Ant' has 100 rooms in its colony. All the ants in the colony can crawl from 1 room to another, from there to another and so on. But our 'Kittu' has a special power that makes him to jump from one room to next 10th room directly.	Easy

	That is room no 1 to room no 11 or 3 to 13… But poor 'Kittu' don't know to calculate/find which room that he can jump next. Help him saying all the room numbers to climb up. His starting room number can be the input. Sample Input: 2 Sample output: 2 12 22 32 … 92 Sample Input: 5 Sample Output: 5 15 25 35 … 95 	
13	Write a program to print the numbers from 1 to 20 other than the given number. Input should be between 1 to 20. Sample Input: 6 Sample Output: 1 2 3 4 5 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Sample Input: 17 Sample Output: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 19 20 Sample Input: 23 Sample Output: Invalid Input	Easy
14	Write a program to print only the numbers divisible by 3 and 5 for a given number from 1. Sample Input: 20 Sample Output: 3 5 6 9 10 12 15 18 20 Sample Input: 40 Sample Output: 3 5 6 9 10 12 15 18 20 21 24 25 27 30 33 35 36 39 40	Easy
15	Jack and Emma are playing a number game. Jack should say the sum of the numbers that Emma says. He should sum until Emma says 'zero'. Help Emma to check if Jack is right or not by telling her the answer. Sample Input: 2 5 9 4 0 Sample Output: 20 Sample Input: 6 8 2 5 3 9 0 Sample Output: 33	Easy

16	Write a program to print 'odd' or 'even' number series based on the given number. That is if the input is an odd number, then it should generate the odd number series from 1 to the given number inclusive. If it is even, then it should generate the series from 2 to that number. Sample Input: 13 Sample Output: 1 3 5 7 9 11 13 Sample Input: 16 Sample Output: 2 4 6 8 10 12 14 16	Easy
17	Given a number, Find the factorial of the given number using iteratives. Sample Input: 5 Sample Output: 120 Sample Input: 7 Sample Output: 5040	Easy
18	There is a movie club for under 20 in the city, where the entry is age restricted. Based on their age allow them into either 'Cartoon Club' or 'Teens Club'. Sample Input: 10 Sample Output: Cartoon Club Sample Input: 15 Sample Output: Teens Club Sample Input: -10 Sample Output: Invalid Age Sample Input: 25 Sample Output: Not Allowed	Medium
19	Write a program if an integer variable currentNumber is odd, change its value so that it is now 3 times currentNumber plus 1, otherwise change its value so that it is now half of currentNumber. Sample Input: 17 Sample Output: 52 Sample Input: 26	Medium

	Sample Output: 13	
20	Write a program to read an integer variable 'Code'. If the Code value is 1, read double values and print the sum. If the Code value is 2, read the integers and print the product. If the code value is 3, read the strings and join them. Sample Input: 1, 24.50, 67.00 Sample Output: 91.5 Sample Input: 3, 'Hello', 'World' Sample Output: HelloWorld	Medium
21	Once a baby lion lost his way in the jungle. An old deer took pity on him and planned to take him to his place. But the other deer and his other friends — rabbits, squirrels, and birds are scared so they accompanied. In the morning they counted themselves to see if the baby lion done any mischief. Help them to find it. Total number of animals, count of each (rabbit, deer, birds, and squirrels) in the morning are the inputs. Sample Input: 240, 27,48,124,38 Sample Output: Baby lion is mischievous Sample Input: 250, 42,46,115,47 Sample Output: Baby lion is well behaved Sample Input: 120, 45,38,30, 27 Sample Output: Counted wrongly 	Medium
22	A store charges $12 per item if you buy less than 10 items. If you buy between 10 and 99 items, the cost is $10 per item. If you buy 100 or more items, the cost is $7 per item. Write the logic that asks customer name, how many items they are buying and prints the customer's name and total cost. Sample Input: Smith, 40 Sample Output: Smith 400 Sample Input: Eve, 111 Sample Output: Eve 777	Medium

23	Write a program to read a Coordinate Point in a XY Coordinate System and Determine its Quadrant. Sample Input: 2 2 Sample Output: 1	Medium
24	Write a program to read a number N. Find the sum of odd and even numbers from 1 to N numbers (inclusive). Sample Input: 10 Sample Output: 25 30 Sample Input: 15 Sample Output: 64 56	Medium
25	Reina and Sierra were playing a game. Reina would give out number, and Sierra must reverse the given number. Help Sierra by writing program to reverse the number. Note that Reina should give a five-digit number. Sample Input: 61987 Sample Output: 78916 Sample Input: 1234 Sample Output: 'Not a valid number'	Medium
26	Write a program to check whether the given number is prime or not. Sample Input: 91 Sample Output: No Sample Input: 97 Sample Output: Yes	Medium
27	Write a program to print all prime numbers between 1 and N(inclusive). N will be the input. Sample Input: 5 Sample Output: 2 3 5	Medium
28	A student will not be allowed to sit in exam if his/her attendance is less than 75%. Number of classes held, and the Number of classes attended are the inputs. Display the attendance percentage and the eligibility of the student for the exam. Allow	Hard

	the student to sit if he/she has medical cause. Ask user if he/she has medical cause or not ('Y' or 'N') only when the attendance is lacking and print accordingly. Sample Input: 100, 80 Sample Output: 80% Allowed Sample Input: 100, 60, 'N' Sample Output: 60% Not allowed Sample Input: 100, 70, 'Y' Sample Output: 70% Allowed	
29	Jessica teaches her students about how many days in a month, what is a leap year and how to find it. Write a program to help her by saying the answer (number of days in a month) to expect from the student for the given month number and the year. Sample Input: 2, 2016 Sample Output: February 2016 has 29 days Sample Input: 7, 2020 Sample Output: July 2020 has 31 days Sample Input: 2, 2019 Sample Output: February 2019 has 28 days	Hard
30	Riya's teacher has asked her to prepare well for the lesson on seasons. When her teacher tells a month, she needs to say the season corresponding to that month. Write a program to solve the above task. Spring - March to May, Summer - June to August, Autumn - September to November and, Winter - December to February. Month should be in the range 1 to 12. If not, the output should be "Invalid month". Sample Input: 11 Sample Output: Autumn Sample Input: 13 Sample Output: Invalid month	Hard