

## Lab 04 Tasks

**Q1.** Write a C program using an iteration statement to display the following output for integer  $n=17$  where  $(1 \leq n)$ . Take the value of  $n$  from the user.

**Sample output:**

1 2 3 **16** 5 6 7 **64** 9 10 11 **144** 13 14 15 **256** 17

**Q2.** Take an integer of any length as input and print the sum of its digits.

**Example:**

<b>Input:</b> 3245 <b>Output:</b> 14	<b>Input:</b> 78687 <b>Output:</b> 36
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**Q3.** The relation between Celsius scale and Fahrenheit scale of temperature is given by the following equation.

$$C = \frac{5}{9}(F - 32)$$

Assume that you are tasked to create a program where the users will give a Temperature range (i.e., 10-200) as **integer**. Users will also specify the scale (**Celsius / Fahrenheit**) in which the temperature range is given. The program must convert all the temperatures within the given range with **20 degrees** of interval from the user-specified scale into the other. The temperatures on the range should also be converted. The converted temperatures should also be **integers**.

**Example:**

<b>Sample Input:</b> 0 85 F	<b>Sample Output:</b> 0     -17 20    -6 40     4 60    15 80    26 85    29
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**Q4.** The program will take two integers **a** and **b** as input where  $(1 \leq a \leq b)$ . The program will then print all odd numbers between 1 and **a**. It will then print all even numbers between **a** and **b**.

**Example:**

<b>Input:</b> 5 10 <b>Output:</b> Odd Numbers between 1 and 5: 1 3 5 Even Numbers between 5 and 10: 6 8 10	<b>Input:</b> 7 7 <b>Output:</b> Odd Numbers between 1 and 7: 1 3 5 7 Odd Numbers between 7 and 7:
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**Q5.** Write a program that will take 4 quiz marks as input (maximum mark 15). Next the program will take mid semester mark (out of 75), semester final mark (out of 150) and attendance mark (out of 30) as input. Now the program will print the marks for the best 3 quizzes out of the 4 quizzes. It will then print the total marks obtained by the student which is the sum of the marks for the best 3 quizzes, mid semester, semester final and attendance. Next it prints marks in percentage which is determined by converting the total marks of the student from 300 to 100. Finally, the grade will be printed according to the following table:

Marks Percentage	Grade
100-80%	A+
75-79%	A
70-74%	A-
65-69%	B+
60-64%	B
55-59%	B-
50-54%	C
0-49%	F

**Example:**

<b>Input</b> Enter the quiz marks: 12 10 4 8 Enter Attendance Marks: 30 Enter mid semester marks: 60 Enter Semester Final Marks: 120	<b>Output:</b> The best three quiz marks are: 12 10 8 Total Marks: 240 Percentage: 80% Grade: A+
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