

**Introduction to C Programming**

# **Module 16: Assignment 03 (Theory)**

**Deadline 100 marks**: 5th May 11.59 PM.

**Deadline 90 marks**: 6th May 11.59 PM.

**Deadline 80 marks**: Anytime after that.

**Answer sheet:** [Answer Script](https://docs.google.com/document/d/12YsInKCYlVNKWNjA1FGAfg6gpLO4zI6byyNIL-I4n3k/edit?usp=sharing)

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**Question:** Write a C program to take positive integer **N** as input and print a pattern shown in the sample input output. **Marks**: 20

**Constraints**: 1 <= **N** <= 5

| **Sample Input** | **Sample Output** |
| --- | --- |
| 5 |  |
| 4 |  |

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**Question:** Write a C program to take positive integer **N** as input and print a pattern shown in the sample input output. **Marks**: 20

**Constraints**: 1 <= **N** <= 9

| **Sample Input** | **Sample Output** |
| --- | --- |
| 5 |  |
| 8 |  |

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**Question:** Write a function named **count\_before\_zero()** which receives an array of integers and the size of that array and counts the number of elements in that array until you find zero and returns that count. Call that function in the main function and print the count there. **Marks**: 15

| **Sample Input** | **Sample Output** |
| --- | --- |
| 5  1 2 4 0 5 | 3 |
| 4  1 2 3 4 | 4 |
| 5  0 1 2 4 5 | 0 |
| 5  1 2 0 4 0 | 2 |

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**Question:** Show the 4 types of examples of functions given below with an example. You can give any example you want, but make sure you are giving different examples for all the four types.. **Marks**: 20

1. Has Return + Parameter
2. Has Return + No Parameter
3. No Return + Parameter
4. No Return + No Parameter

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**Question:** Write a function named **is\_palindrome()** which will receive a string as parameter from the main function and this function will return 1 if the string is palindrome, otherwise it will return 0. And with the help of this 1 or 0 print “Palindrome” or “Not Palindrome” in the main function. **Marks**: 15

**Constraints**: String length will be maximum 10.

| **Sample Input** | **Sample Output** |
| --- | --- |
| madam | Palindrome |
| abcd | Not Palindrome |

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**Question:** Explain about **pass by value** and **pass by reference** with an example.

**Marks**: 10