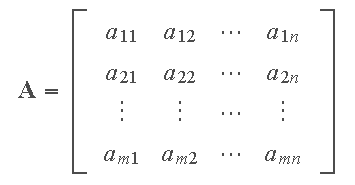
**Lab Assignment for Tuesday and Wednesday (11 -12 October, 2016)**

**Q1**. Write a program to find the **Frobenius norm** of a given matrix A. The **Frobenius norm**, sometimes also called the **Euclidean norm** (a term unfortunately also used for the vector -**norm**), is **matrix norm** of a **matrix** defined as the square root of the sum of the absolute squares of its elements.

For example:



Norm

**Q2**. Write a program to find the row wise and column wise sum of a matrix and also find the total sum.

For example:

|  |  |  |  |
| --- | --- | --- | --- |
| 3 | 7 | 1 | 11 |
| 6 | 2 | 5 | 13 |
| 1 | 3 | 2 | 6 |
| 10 | 12 | 8 | 30 |

**Q3.** Write a program to fill the matrix of size 5X5 with Pascal Triangle.

For Example:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |
| 1 | 1 |  |  |  |  |
| 1 | 2 | 1 |  |  |  |
| 1 | 3 | 3 | 1 |  |  |
| 1 | 4 | 6 | 4 | 1 |  |
| 1 | 5 | 10 | 10 | 5 | 1 |

**Q4**. Write a program to fill the matrix with following pattern.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | 1 |
|  |  |  |  | 1 | 2 |
|  |  |  | 1 | 2 | 4 |
|  |  | 1 | 2 | 4 | 8 |
|  | 1 | 2 | 4 | 8 | 16 |
| 1 | 2 | 4 | 8 | 16 | 32 |

1

**Q5**. Write a program to fill the matrix with following pattern.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 |  |  |  |  |
| 1 | 2 |  |  |  |
| 2 | 3 | 5 |  |  |
| 5 | 7 | 10 | 15 |  |
| 15 | 20 | 27 | 37 | 52 |

**Q6.** Write a program tofind the transposeof a given matrix of size AMXN.

For Example

|  |  |  |
| --- | --- | --- |
| 6 | 1 | 4 |
| -3 | 2 | 7 |
| 2 | 9 | 5 |
| -8 | 7 | 10 |

|  |  |  |  |
| --- | --- | --- | --- |
| 6 | -3 | 2 | -8 |
| 1 | 2 | 9 | 7 |
| 4 | 7 | 5 | 10 |

A3X4 = AT =