MATRIX ALGEBRA

Introduction

J. J. Sylvester was the first man who introduced the word **MATRIX** in 1850 and later on **Arthur Cayley** developed the theory of matrices in a symmetric way. Matrix is a powerful tool of modern mathematics which is originated in the study of linear equation and it has wide applications in every branch of science.

Definition of Matrix

A matrix is rectangular array of numbers (Real of Complex) enclosed by a pair of square brackets [ ] / parenthesis ( ) / double vertical rolls || ||. Or we can say it as a $2D$ array. The numbers in the matrix are called **entries** or **elements** of the matrix. That is, a rectangular array of the form:-[1]

$$\begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \dots & \dots & \dots & \dots \\ \dots & \dots & \dots & \dots \\ a_{m1} & a_{m2} & \dots & a_{mn} \end{bmatrix}$$

[1]For create this matrix, I used *amsmath* package.