PROJECT PROPOSAL

DELHI TECHNOLOGICAL UNIVERSITY
Department of Applied Mathematics
III Semester

➢ Project Details

Topic: Algebraic Representation of Graphs
Subject: Discrete Mathematics (MC 201)

➢ Project by

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   Roll No.: 2K20/MC/21

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➢ Project Supervisor

Ms. Priyanka Goel

➢ Project Introduction

In the project we will discuss graphs and matrices. A graph is a structure pointing to a set of objects in which some pairs of the objects are in some sense "related". The objects correspond to mathematical abstractions called vertices (also called nodes or points) and each of the related pairs of vertices is called an edge (also called link or line). Typically, a graph is depicted in diagrammatic form as a set of dots or circles for the vertices, joined by lines or curves for the edges. Graphs are one of the objects of study in discrete mathematics.

A matrix is a rectangular array of numbers. A matrix with m rows and n columns is called an m×n matrix.

Graphs and algebra is something which is used in everyday life:

Algebra is used in sports, cooking, health and fitness, business analysis, and many other day to day activities.

Graphs are used in logical reasoning, business analysis, planning routes and many other day to day activities.

➢ Project Objective

Objective of our project is to implement an adjacency matrix of a graph. An adjacency matrix is a square matrix which is used to represent a finite graph. The elements of the matrix indicate whether pairs of vertices are adjacent or not in the graph. And also we are going to learn about how one can find the number of edges, the degrees, the number of triangles, etc., without drawing the graph only just by using the entries of the matrix. So, basically we from the given graph will try to find out its adjacency matrix.

Also we are going to write some codes related to adjacency matrix of a graph to implement and find out adjacency matrix of a graph.

Also going to study about some of their applications.

❖ Date:

September 11, 2021