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Sample Copies of Projects

FUZZY SETS

PROJECT REPORT

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For the award of the degree of


BSC MATHEMATICS

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CERTIFICATE

This is to certify that this project work entitled "FUZZY SETS" submitted by ABHIN.M in partial fulfillment of the requirements for the award of degree of BACHELOR OF SCIENCE IN MATHEMATICS is a record of work carried out by them under my supervision.


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Introduction

A Fuzzy set is a mathematical concept that allows for the representation of uncertainty or imprecision in a set. It is a generalization of the classical notion of a set, where an element is either a member of the set or not a member. In contrast, a fuzzy set allows for elements to have a varying degree of membership in the set, represented by a value between 0 and 1. The concept of fuzzy sets was introduced by Lotfi Zadeh in 1965 as an extension of the classical notion of a set.

By contrast, fuzzy set theory permits the gradual assessment of the membership of elements in a set; this is described with the aid of a membership function valued in the real unit interval $[0,1]$. Fuzzy sets generalize classical sets, since the indicator functions of classical sets are special cases of the membership function of fuzzy sets, if the latter only take values 0 and 1. In fuzzy set theory, classical bivalent sets are usually called 'crisp sets'. Thus, the basic theme and ideas of crisp set theory will be reflected in fuzzy set theory also.

Various mathematical structures, whose features emphasize the effects of ordered structure, can be developed on the Fuzzy topology. One such branch, combining order structure. This branch of mathematics emerged from the background of processing fuzziness and local theory, proposed by the great mathematician Ehresmann, comprises the two most active aspects of topology on lattice, which affects each other.

**A Study on Eulerian and Hamilton
Graphs**

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Introduction

Graphs are mathematical structures which consists of set V of vertices and set E of edges. It is used to model pair-wise relations between objects from a certain collection. Vertices (also called nodes) are represented as points in the plane and edges are represented as the line segments connecting them.

A connected graph G is Eulerian if there exists a closed trail containing every edge of G . Such trail is an Eulerian trail.

The Konigsberg bridge problem was an old puzzle concerning the possibility of finding a path over every one of seven bridges that span a forked river flowing past an island, but without crossing any bridge twice Euler argued that no such path exists. In chinese postman problem the postman wishes to travel along every road in a city in order to deliver letters, with the least possible distance. The problem is how to find a shortest closed walk of the graph in which each edge is traversed atleast once, rather than exactly once.

A graph is called Hamiltonian if it has a spanning cycle. These graphs were first studied by sir William Hamilton, a mathematician. A spanning cycle of a graph G , when it exists, is often called Hamiltonian cycle of G .

Our project is divided into four chapters. In the first chapter,we discuss about some basic definitions in graph theory. Second chapter, we analyse the topic Eulerian graph. In the third chapter, we discuss about applications of Eulerian graph. In the fourth chapter, we discuss about Hamilton graphs.