**ConnectME**

**UCS 408**

**Data structures and Algorithms**

**B.E Third Year, Electronics Engineering**

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**Submitted by Submitted to**

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| **Contents**   1. **Introduction- Overview of the project**    1. **Need of the System**   In this age of social connection where almost everyone has a footprint on the internet and everyone needs to connect with people around them, there is need for an interface which can help us connect to people we don’t know in a very elegant and efficient manner.  ConnectME is an application in which people can create their own links with their knowns and after a sufficient enough entries one can find their connections with people whom they don’t know. The application finds the shortest possible path between the 2 people using Dijkstra’s algorithm which is an algorithm used to find the shortest path between the nodes of a graph.   * 1. **Data structures used**      1. **Graphs** - A Graph is a non-linear data structure consisting of nodes and edges. The nodes are sometimes also referred to as vertices and the edges are lines or arcs that connect any two nodes in the graph.   This interface works on Dijkstra’s algorithm, which is an algorithm for Graphs to find shortest path between its nodes.   * + 1. **Python Lists and Tuples** - Some Data Structures are also used which are somewhat specific to Python programming languages. These include Python lists and tuples.   1. **Applications of Proposed System** * Can be implemented for Nation-wide database of citizens for identification and discovery of culprits. * Can be used for matrimonial match-making purposes.  1. **Working of the Proposed System**   The application uses several Python libraries and packages for its working. They are described below:   * **Networkx** – NetworkX is a Python package for the creation, manipulation, and study of the structure, dynamics, and functions of complex networks. Here this package is used for creating graphs. * **OS** – The OS module in python provides functions for interacting with the operating system. OS, comes under Python’s standard utility modules. This module provides a portable way of using operating system dependent functionality. * **Tkinter** – Tkinter is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter outputs the fastest and easiest way to create the GUI applications. In the application this library is used for creating all the Graphic interface. * **Matplotlib** - Matplotlib is a Python 2D plotting library which produces publication quality figures in a variety of hardcopy formats and interactive environments across platforms. Matplotlib is used to plot the graphs.   There is an admin section where the administrator can perform the following functions:   * Take a look at the graph which contains all the nodes and connections. * There is also an option to have a look at all the users registered   In this System, users can register and login. After successful login:   * Users can find shortest path to a person they want to, if they are connected to their network. * Users can also add themselves to their friend’s network so that their friend can connect to people in their network.  1. **Output/Snapshots** 2. **Conclusion and Future Scope**   Although there is huge room for improvement, this project is an interesting concept which can exist on its own or can be integrated in any other application which already has a database of users.  In the current version of the system, it works on an offline database, in future we will be working on an online database for the system and also developing a mobile application for user login and functions.   1. **References**  * <https://matplotlib.org/> * <https://networkx.github.io/> * <https://www.geeksforgeeks.org/os-module-python-examples/> * <https://www.geeksforgeeks.org/python-gui-tkinter/> |  |
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