Ain Shams University

Faculty of Engineering

Computer and Systems Department

Data Structures and Algorithms

SNA Project Final Report

- ***Group :25***

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- **Github repository : https://github.com/AbdelrhmanMagdy/sna_project**

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✓ Introduction

- **A social network implementation based on web languages(NodeJS) and analysis it using clustering algorithms**
- **User can login/signup using a login form**
- **User can add post/like to any of posts on the network (friends and group friends)**
- **User can analyze existing data to view the most interacting user on the network**
- **User can visualize the existing data to find the shortest path between him and any other user on the network**
- **User can search for someone in the network by just typing a part of his name**
- **User can create/join different groups**
- **Each group have its private posts**
- **We use HTML5 , CSS3, Bootstrap, jquerry, javascript , NodeJS to implement frontend and backend and make the network more user friendly**
- **We use Mongo DB to implement database and retrieve the data using json formatting**

✓ Database and backend design

➢ Database implementation and design

- **Database is implemented by Mongo dB based databases that act as a graph.**
- **Database is online and we connect to it using "mongo.connect"**

➢ Backend implementation and design

- **Backend is implemented by NodeJS (Node JavaScript) web language that widely used now**
- **We use models to represents users/groups/posts**

➢ JSON visualization scripts

- **We use JavaScript library (dracula_algorithms library) to visualize the existing users and see the relation between the logged-in user and all other users in the network**
- **We use dijkstra algorithms to calculate the shortest path between the logged-in user and all users in the visualization graph**

➢ Statistics plot

- **We use JavaScript library (plot.ly) to represent the statistics in bar graphs**

✓ Frontend Design:

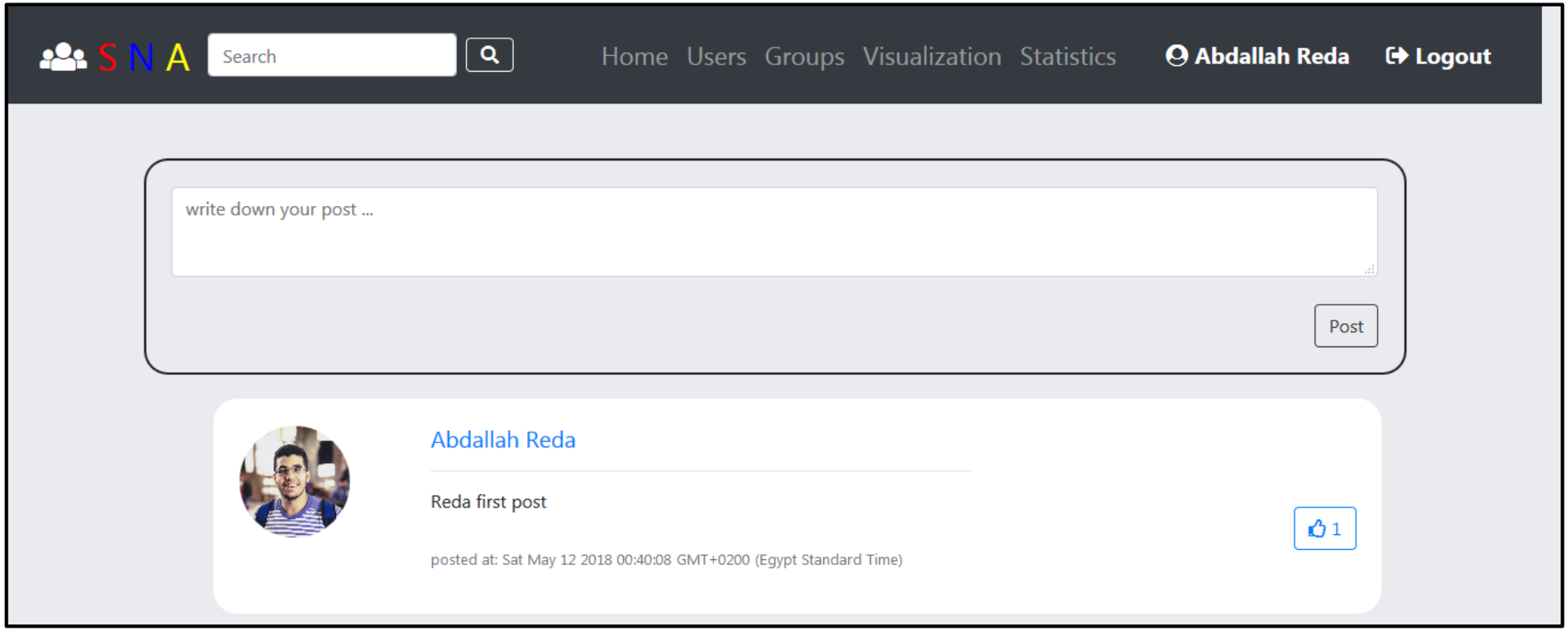
- **We use HTML5 , CSS3, Bootstrap, jquerry, javascript to implement frontend and make the network more user friendly**

➢ Login and Register

- User is able to create a new account to being able to access the SNA website
- After registration, user can log in the SNA website

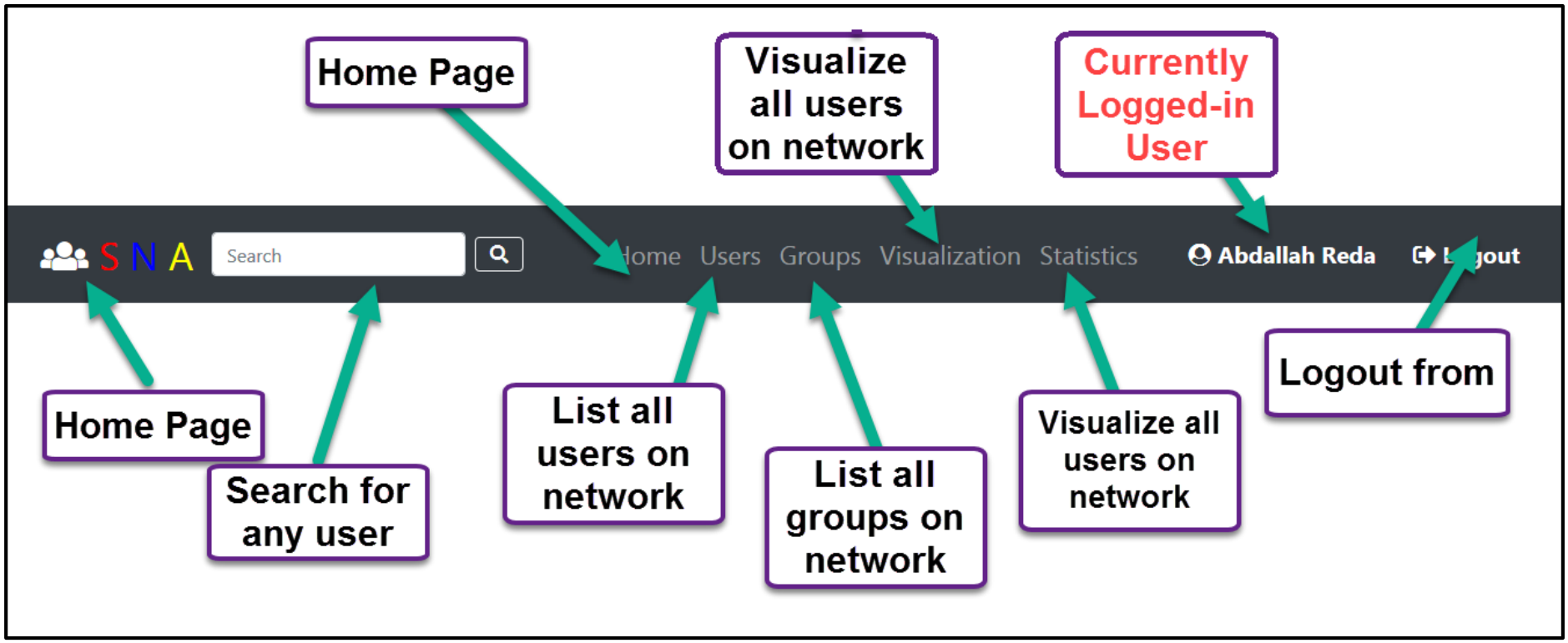
➢ Home

- After login , user will be directed to the Home page where his posts and friends' posts in groups and profile pages



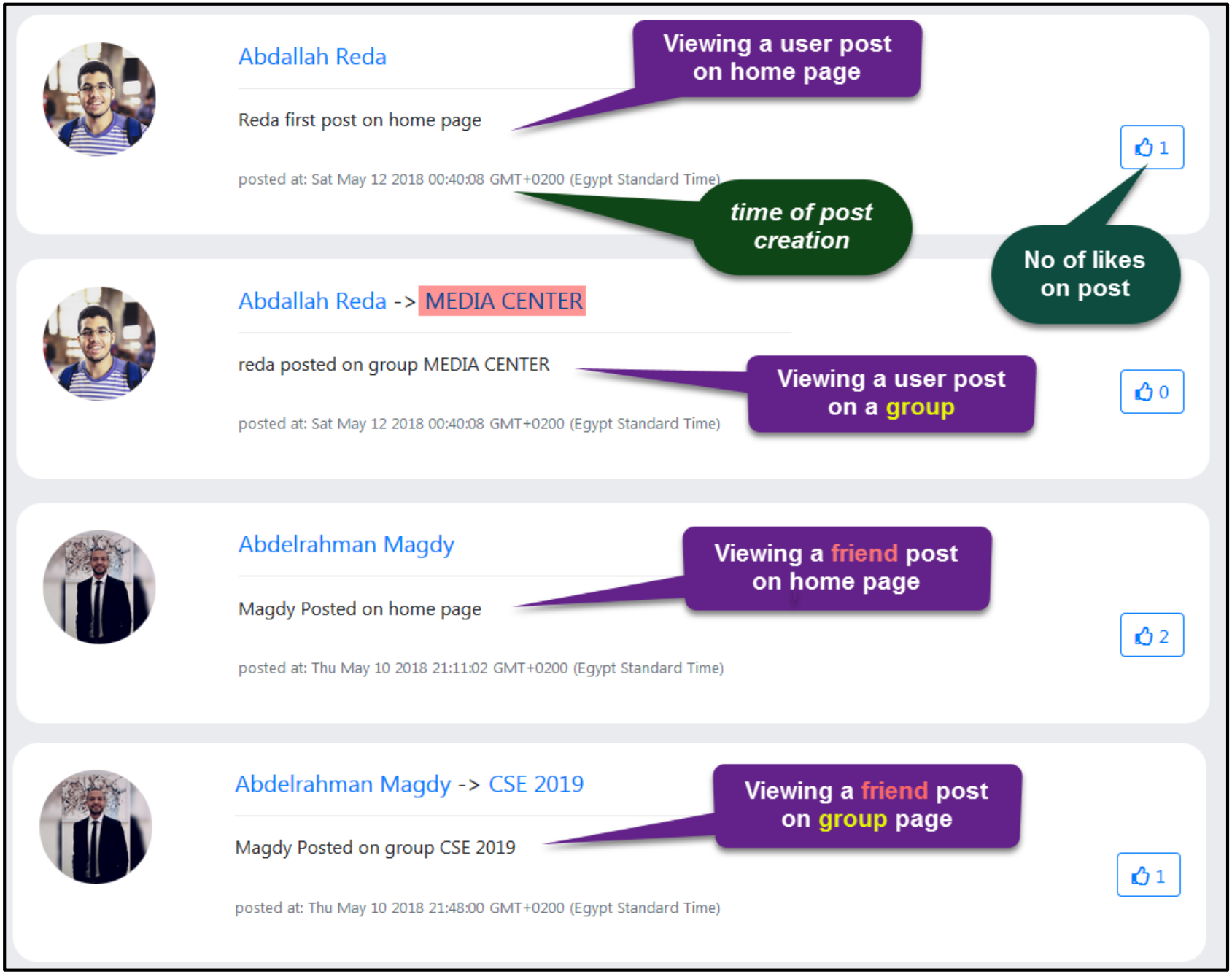
- ***<u>In home page you will observe:</u>***

1. Navigation bar:

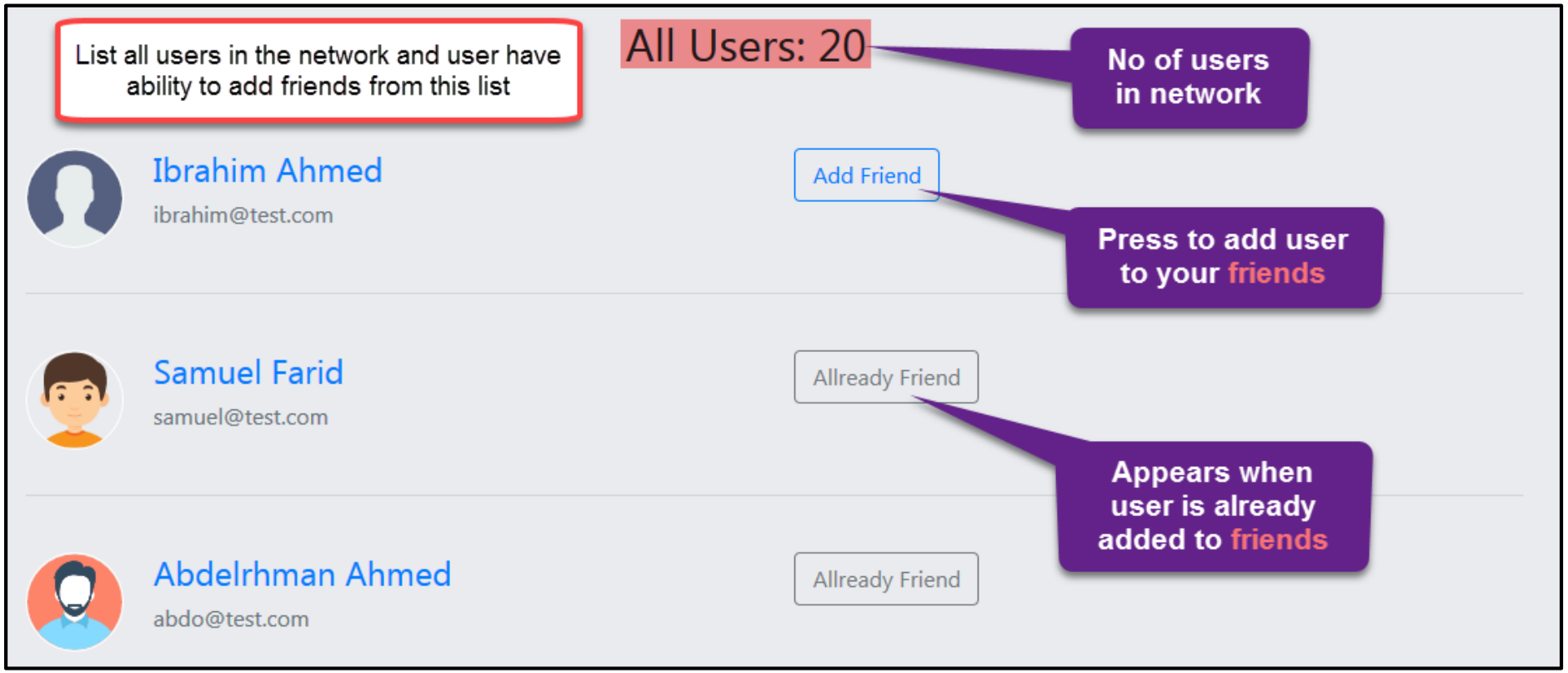


2. <u>Creating Posts</u>

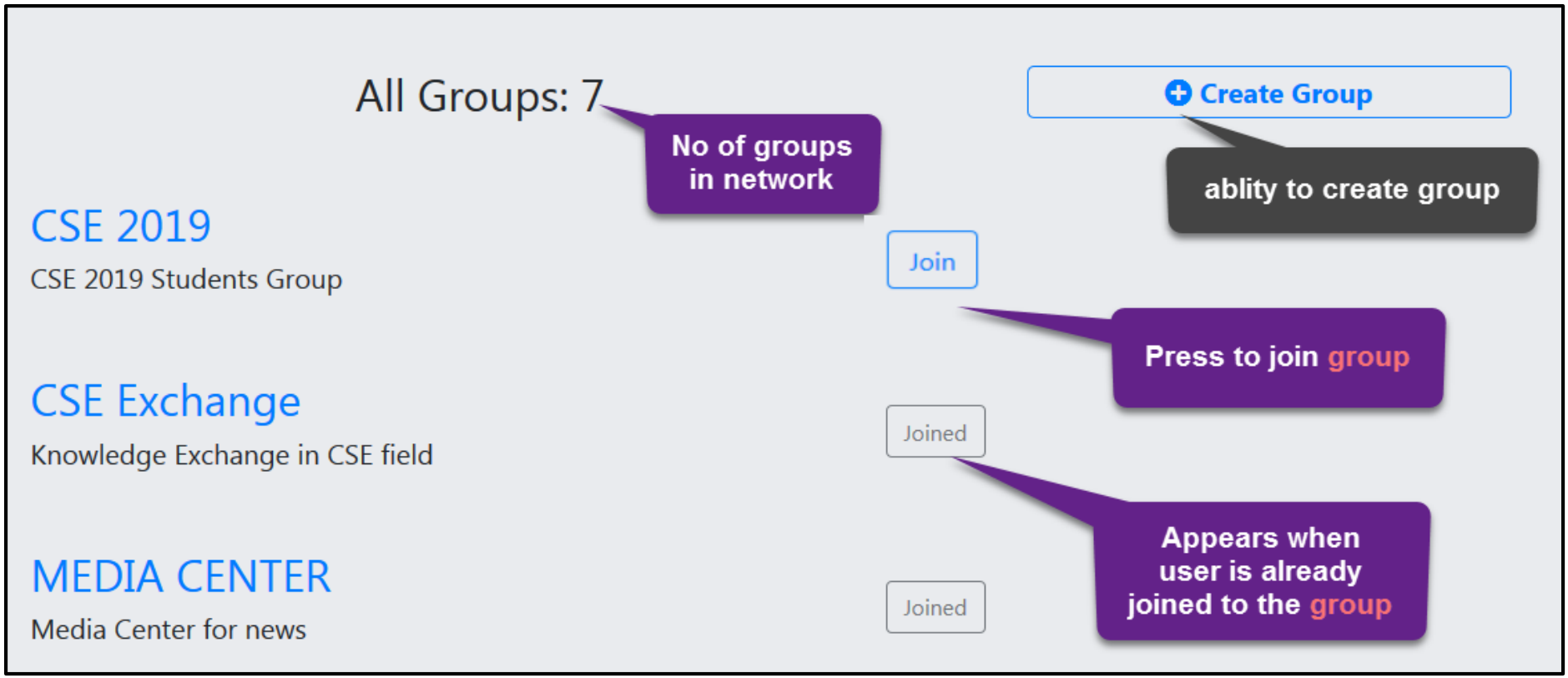
3. Posts on home page



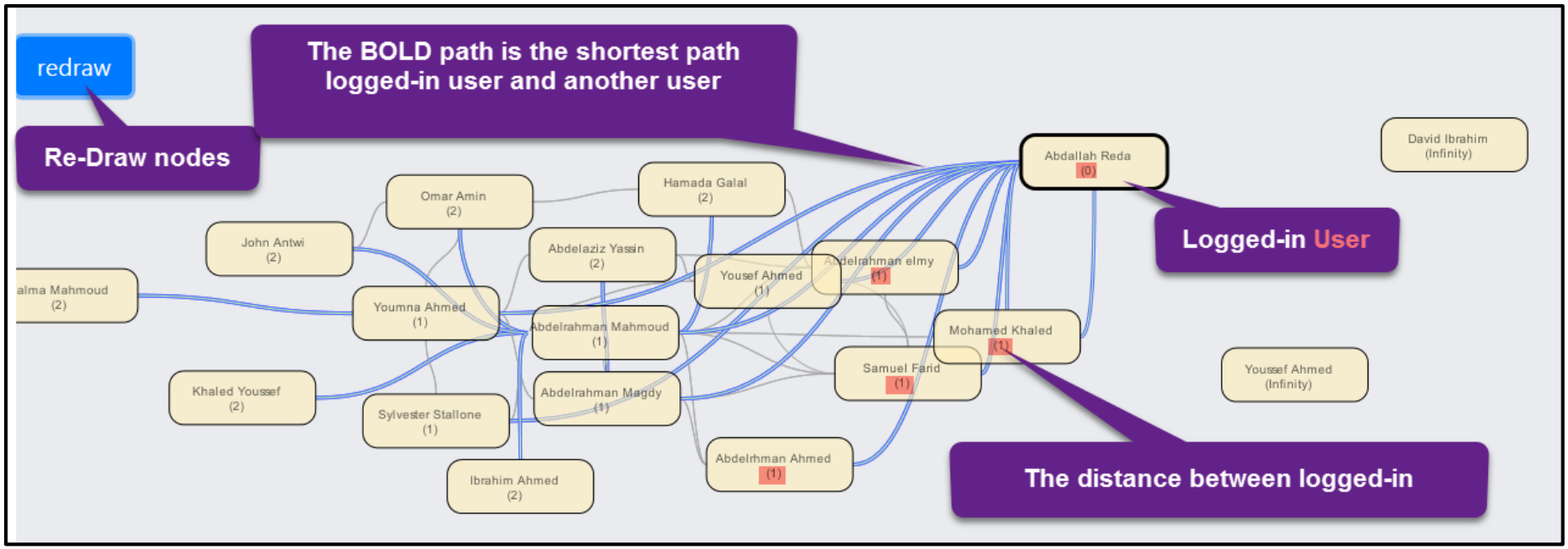
Users


List all users in the network and user have ability to add friends from this list
All Users: 20
No of users in network
Ibrahim Ahmed
ibrahim@test.com
Add Friend
Press to add user to your friends
Samuel Farid
samuel@test.com
Allready Friend
Appears when user is already added to friends
Abdelrhman Ahmed
abdo@test.com
Allready Friend

➢ Groups


All Groups: 7
No of groups in network
Create Group
ablity to create group
CSE 2019
CSE 2019 Students Group
Join
Press to join group
CSE Exchange
Knowledge Exchange in CSE field
Joined
Appears when user is already joined to the group
MEDIA CENTER
Media Center for news
Joined

➢ Visualization



➢ Statistics

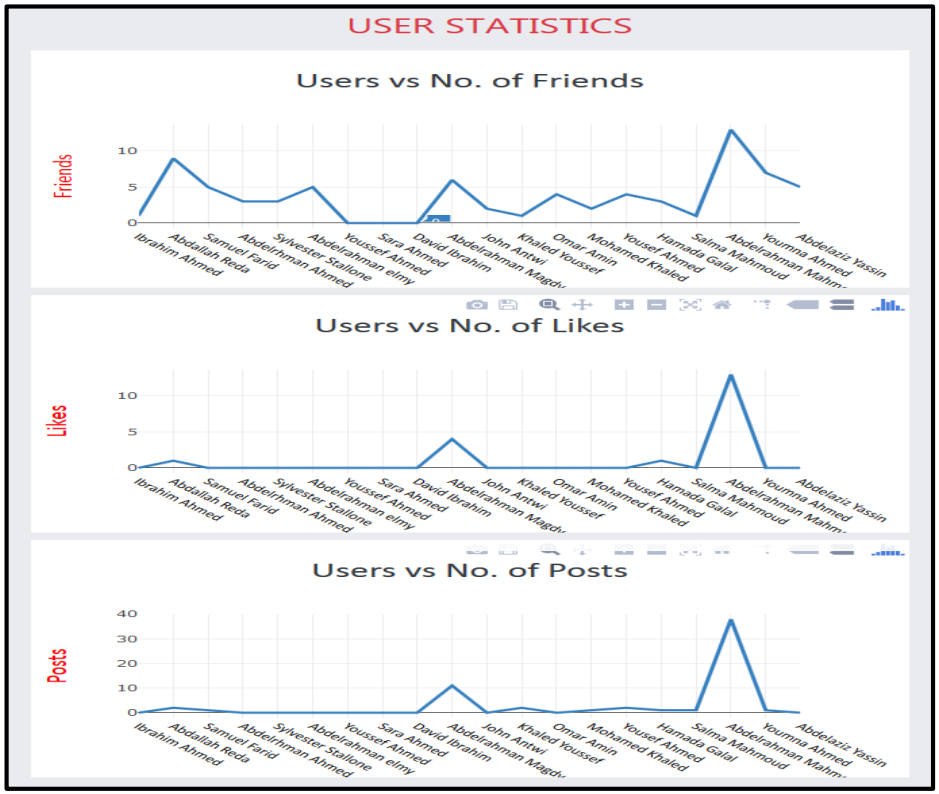
- **General Statistics**

GENERAL STATISTICS

No of users in Network = 20

No of groups in Network = 7

- **USER Statistics**



- **GROUP Statistics**