**10 Algorithms and Data Structures**

**10.1 Algorithms**

AS mentioned throughout this document, office hours is a website that help people in different ages and specially students to communicate with experts in the field they like , The goal of the project is to increase people knowledge and help them to finish their courses or anything they need in their field.

**10.1.1 Experts and topics selection**

In order to make the user select his topic , he can search for any field he want then he will be able to choose the topic , after choosing the topic we offer the user all the experts in this field so he can choose 3 experts to ask them questions or have a session with them later .

**10.2 Data Structures**

The overarching data structure that our system uses is the database. More specifically, we will use the Mongodb relational database management system to store the information pertinent to our system. Our database will use the following data types in conducting logging sessions.

**Email**: String – the email will be the unique identifier to differentiate between users

**UserName**: String – the name will identify the user

**Password:** String – password is a string that is required to login

**TimeStamp**: int – the time stamp is used to allow the user to book a slot in a specific time

**Questions:** String–the questions is used to allow the users to ask the experts questions in a specific topic so the expert can answer it and they start the session after the expert answers this questions.

Also we will introduce a class “ schedule” , this class holds all information about the scheduling as a arraylist of time slots ,time slot is a class the has date , start time and end time , this class is used to help user to find a perfect slot for the session.

Then class “experts” , which hold information about the experts information as his fields and topics , so the user can choose their favorites experts to ask them a questions .

Now class “ session “ , this class holds all information about the session such as the slot time , its status as if the session is private or public , method of the communication as it may be audio call or video call and the number of users participating in it , each session has a unique id that identify the session to the system .

Finally We have class “ Admin “ , this class holds the information about admins who can assign a normal user to be expert and can view any profile.