Meeting

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Messaging Application and the messages are encrypted using our own encryption algorithm.

Normalization Formula

$$\begin{aligned} \text{Normalized Value} &= \frac{\text{Value} - \text{Min}}{\text{Max} - \text{Min}} \\ \text{Value} &= \text{Normalized Value} \times (\text{Max} - \text{Min}) + \text{min} \end{aligned} \tag{1}$$

Algorithm Steps

1. Get input from user
2. Input handling and validation
3. Input is x_1, x_2, y, s, r
    1. x_1, x_2 are the positive and negative bounds of x
    2. y is one bound of y and the other bound will be the same value but negative.
    3. s is the number of sections
    4. r is the ramdom state
4. start preparing your points by dividing the x axis into s sections
5. make an array of 100 random numbers from 0 to 99.
6. depending on the random state, the array will be shuffled.
7. the array will be used to shuffle the points.
8. After Having the points apply lagrange/Newton interpolation to get the polynomial.

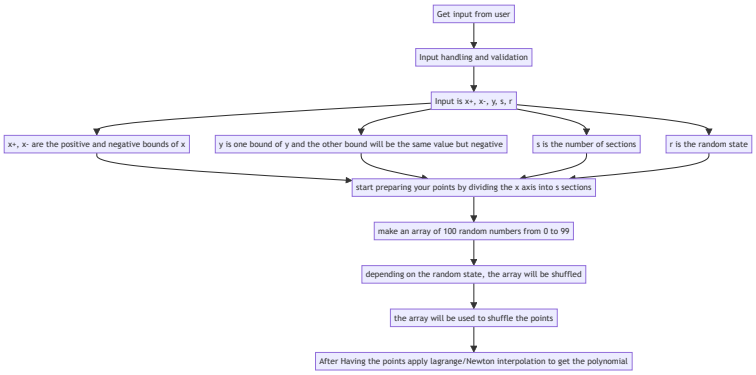

Figure 1: Algorithm Steps

Diagrams

Diagrams to be used in our project.

1. Use Case Diagram (Sara)
2. Activity Diagram (Abdelfattah)
3. DFD & Context Diagram (Dalia)
4. Class Diagram & State Diagram (Shrouk)
5. ERD (Mohamed Emary)
6. Sequence Diagram (Mohamed Abdelfattah)

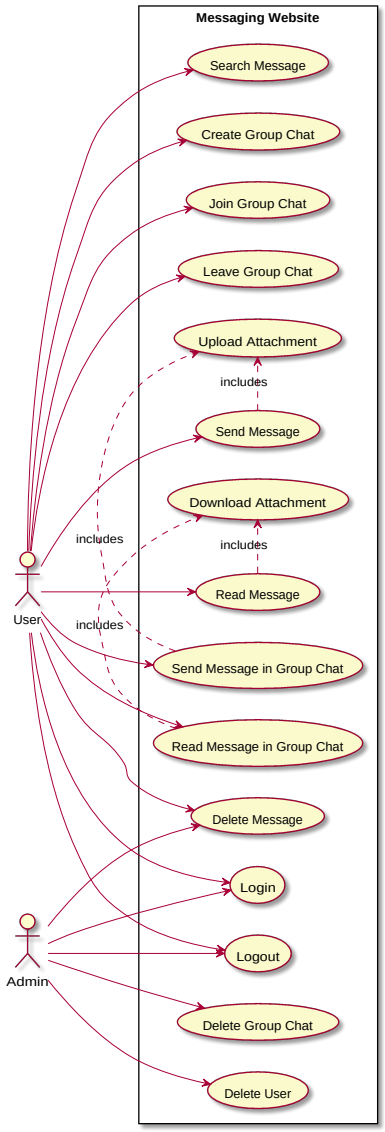

Figure 2: Sample Use Case

Use Case Diagram

What normal user can do:

1. Sign Up
2. Login
3. Send Text Message
4. Send Images

5. Search For Messages
6. Delete Messages
7. Read Message in Group Chat
8. Change Profile Picture
9. Update Profile Information (Name, Email, Password)
10. Edit Messages
11. Logout

What admin can do:

1. Sign Up
2. Login
3. Ban/Unban Users
4. Delete Users
5. Delete Messages
6. Update Application Content
7. View System Statistics in a Dashboard
8. Logout

Initial Use Case Diagram

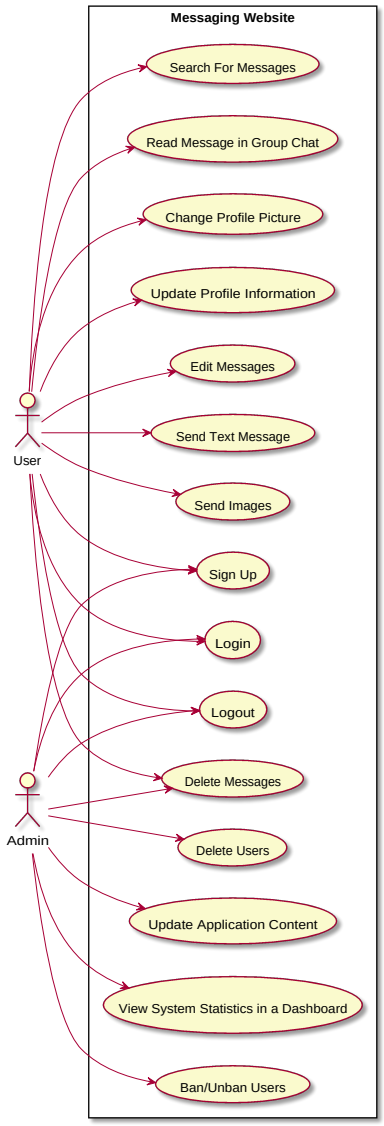

Figure 3: Initial Use Case Diagram