A picture containing text

Description automatically generated

**Ain Shams University**

**Faculty of Computer and Information Science**

**Scientific Computing department**

**Ain shams university**

**Faculty of computer and information science**

**Bioinformatics department**

**Project Title**

**Image Quantization**

**By**

|  |  |  |
| --- | --- | --- |
| **Name** | **ID** | **Section** |
| **Nour Mohamed Hussein Kamaly** | **20191700701** | **5** |
| **Nourhan Abdel-Karim Khalaf Abdel-Hafez** | **20191700716** | **5** |
| **Mohammed Nour-Elden Abbas Ismael** | **20191700583** | **4** |
| **Abdul-Rahman Sayed Ali Mohammed** | **20191700339** | **3** |

**Under the supervision of**

**Dr. Ahmed Salah**

**Scientific Computing Department,**

**Faculty of computer and Information Science**

**Ain Shams University**

**Functions Description:**

* **Get Distinct Colors.**
* **Minimum Spanning Tree.**
* **Construction Clusters.**
* **Get Cluster’s Representative Color.**
* **Quantization.**
* **Automatically Detect Clusters.**

**Get Distinct Colors:**

* **Name: getDistincitColors.**
* **input: ImageMatrix.**
* **output: List of distinct RGB pixels.**
* **Description: Extract distinct color from image matrix.**
* **Overall Complexity: O(N^2)**Table

  Description automatically generated with medium confidence

**Minimum Spanning Tree:**

* **Name: mininmumSpanningTree.**
* **input: DistinctColors.**
* **output: Array of struct of MST vertices.**
* **Description: Construction Minimum Spanning Tree.**
* **A picture containing table

  Description automatically generatedOverall Complexity: O(V^2)**