

**Cairo University,**

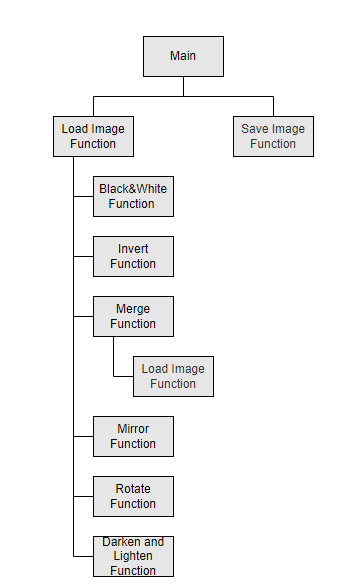
**Faculty of Computers and Artificial Intelligence**

**CS112 – Structured Programming**  
**Second Semester 2021-2022  
s**

**Assignment #3 Report**

**Marwan Ahmed – 20210377**

**Function Decomposition Diagram**



**Invert Filter Algorithm:**

For each row:

For each column:

Pixel [row][column] = 255 – Pixel[row][column]

**Rotate Filter Algorithm:**

Transpose the matrix:

For i = 0 (in range size of pixels):

For j = i (in range size of pixels):

swap (Pixel [i][j] with Pixel [j][i])

Then we flip the matrix horizontally:

For i = 0 (in range size of pixels):

For j = 0 (in range size of pixels):

swap (Pixel[i][j] with Pixel[i][SIZE – j -1]