GEBZE TECHNICAL UNIVERSITY

CSE443 OBJECT ORIENTED PROGRAMMING

HOMEWORK – 1 REPORT

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Answer 1 :

Design pattern is a general repeatable solution to common problems. When your solution becomes to descripon or template for how to solve a problem ; your solution will be getting design pattern.The main idea does not concreate to implemantation patterns interest in how can we solve the problem.

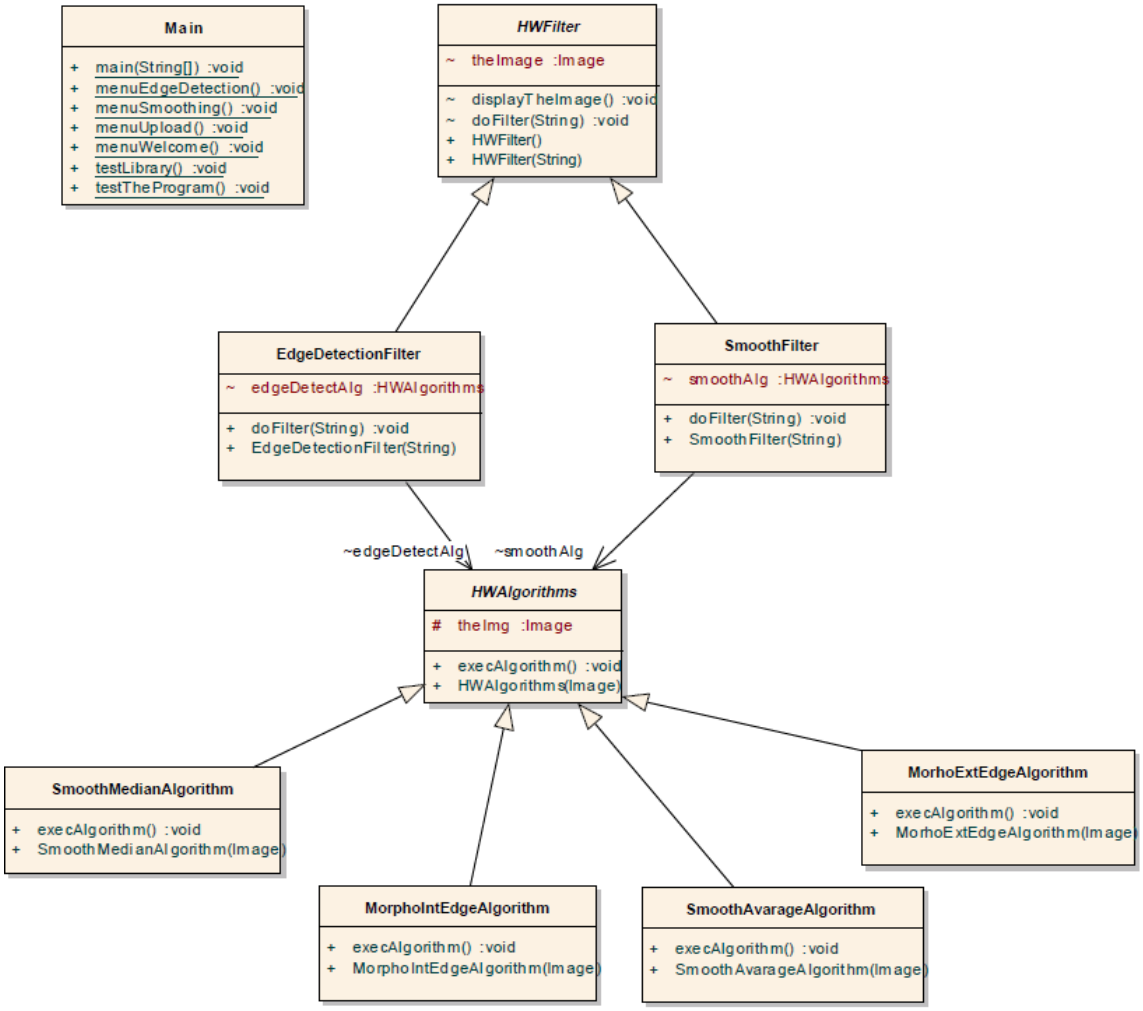
For Filter Programming rquirments Strategy Pattern will be used for solving problem.Because strategy pattern divorce the main classes with algorithms. In this pattern a class behaviour and its algorithm can be change on running time.

In the fitler problem ; filters can uses the algorithms such that median , avarage, morphoInt and morphoExt. The algorithms can change on running time and the custemer can be add more algorithms on the next updates.

In my solution i create a filter abstract class and a algorithm abstract class to divorce algorithms and caller classes. I inherited the Smooth and Edge detection filters from abstract filter , the median , avarage, morphoInt and morphoExt abstract algorithm. Filters uses the algorithms with aggeration.

Solving problem with Strategy Pattern is effectively.

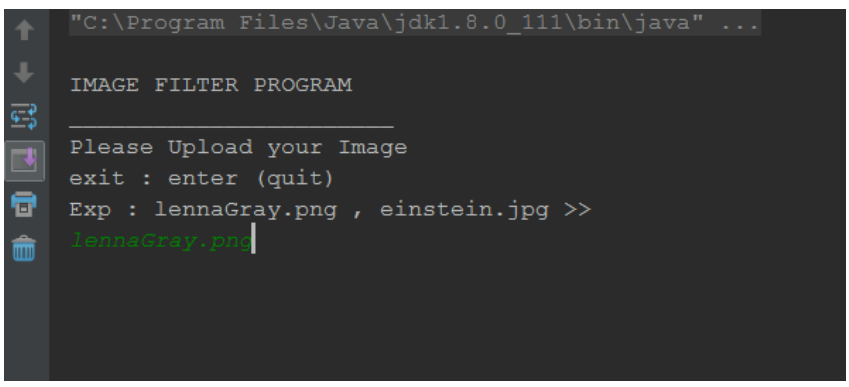
Answer 2 :



Answer 3 :

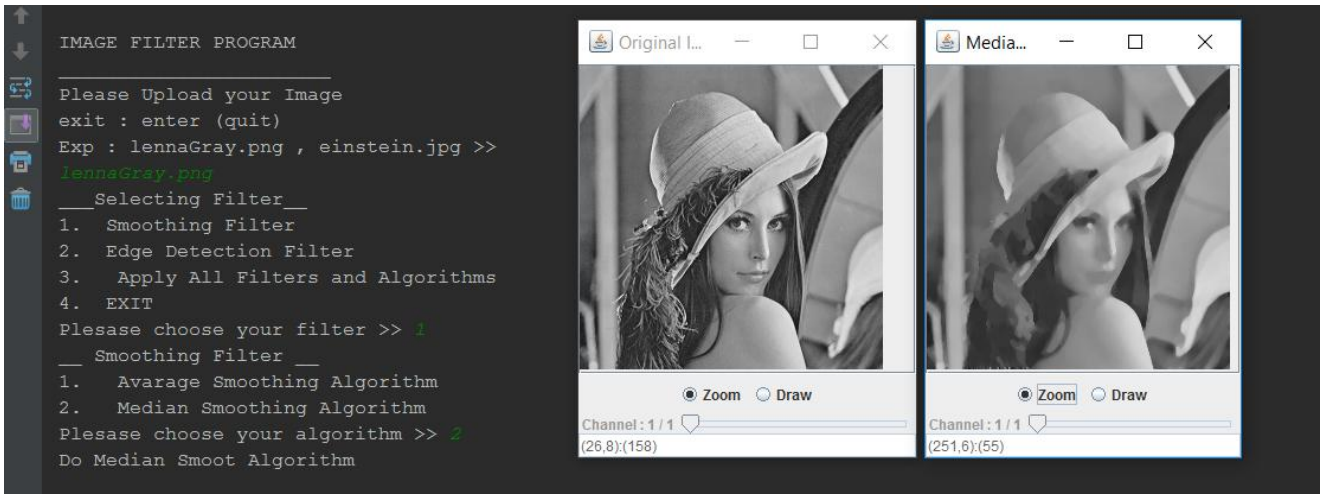
Custemer should upload the image to program. And selects the filter then selects the algorithm for filtering. Likewise can see the all filters.

When program start the user should upload image. On the below describing uploading.



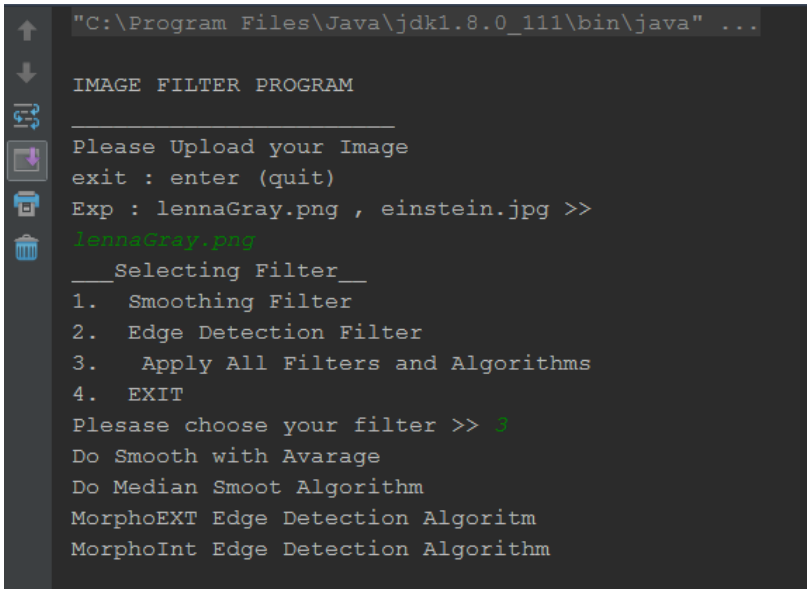
Şekil 1: Starting of program , user should upload the image

Simple using of program. User can change algorithms dynamically.

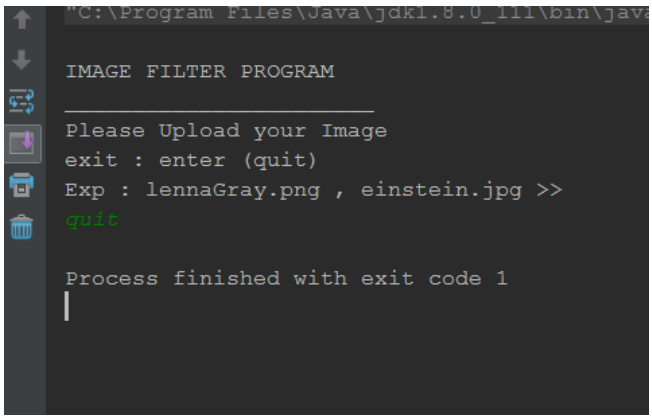


Şekil 2: Simple Using

User can run all algorithms on the image.



Program will be terminated on “quit” command.



My design can be expanded by filter and algorithm side . Algorithms sharply divorced from filters. The algorithms and filters can be used other projects easily. The Filters load base image and creates the algorithms. Algorithms while creating uses the copy of image , it makes filter more flexible. Base image cannot changed by algorihm, the algorithm only uses the copy image.