Parallel and Cluster Computing Project

Team Member

Hamza Abdellah Ahmed 18P7231

Osama Alaa Shoukry 18P5205

Khalid Mohamed Mahmoud Salman 19P5482

Esraa Ramadan Aly 1808069

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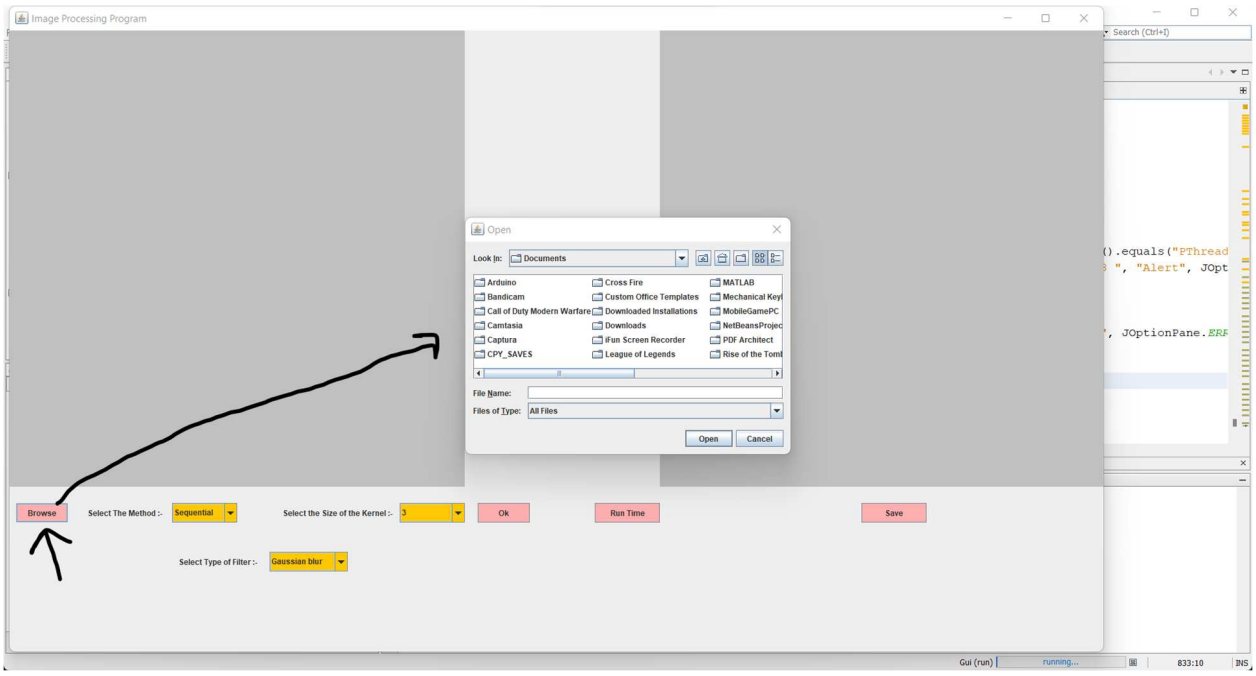
1. Introduction:

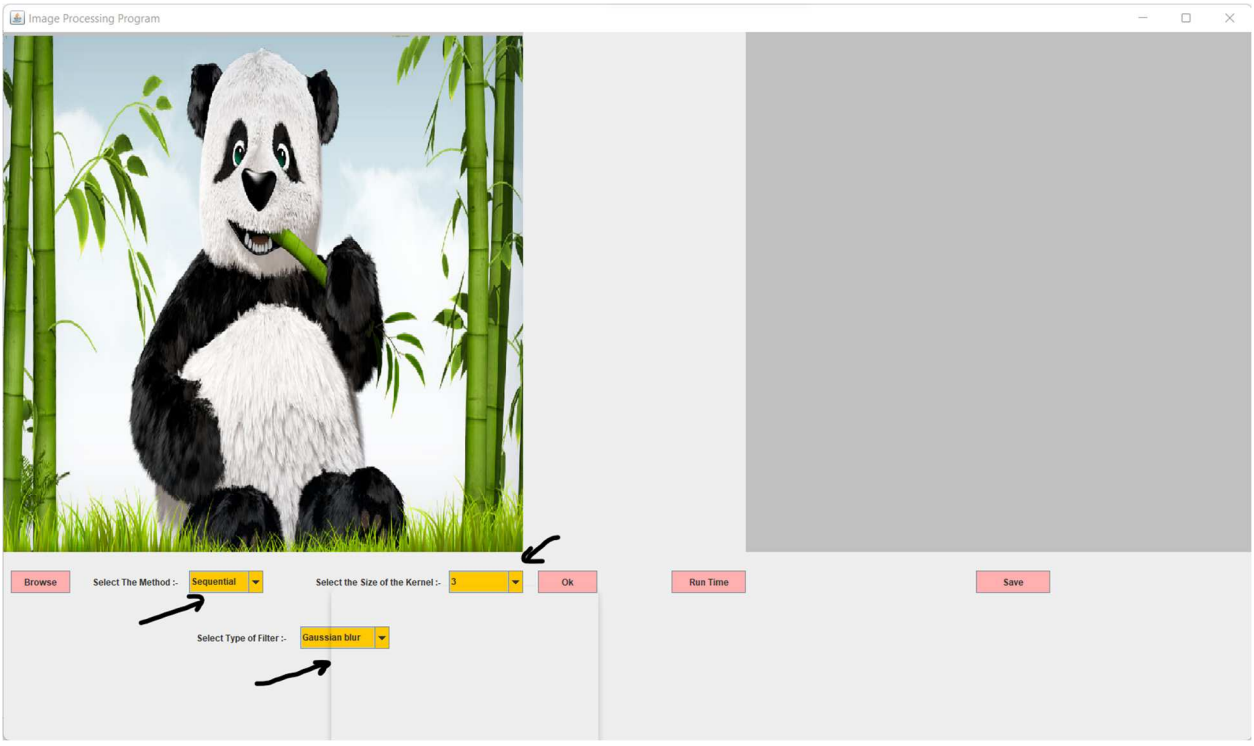
The project is an image processing program that operates using different ways of processing to see which way is better from a performance perspective. The methods are **sequential** coding, **pthreads** and **open-mp**. What the program does is it takes an image from your computer that you can access by the browse function in the system, it then displays the image for you to see. There are 6 filters that are used in the program and they are the **blur**, **sharpen**, **edge detection**, **outline**, **eboss** and **bottom sobel** and they are run on kernel **3** and **5** the choice of which is of course left to the user(the last 3 filters run only on kernel 3). There is also an option to save your image after the application of the filter and a way for the user to see the execution time and thus compare between the three computing methods.

2. Main Page :

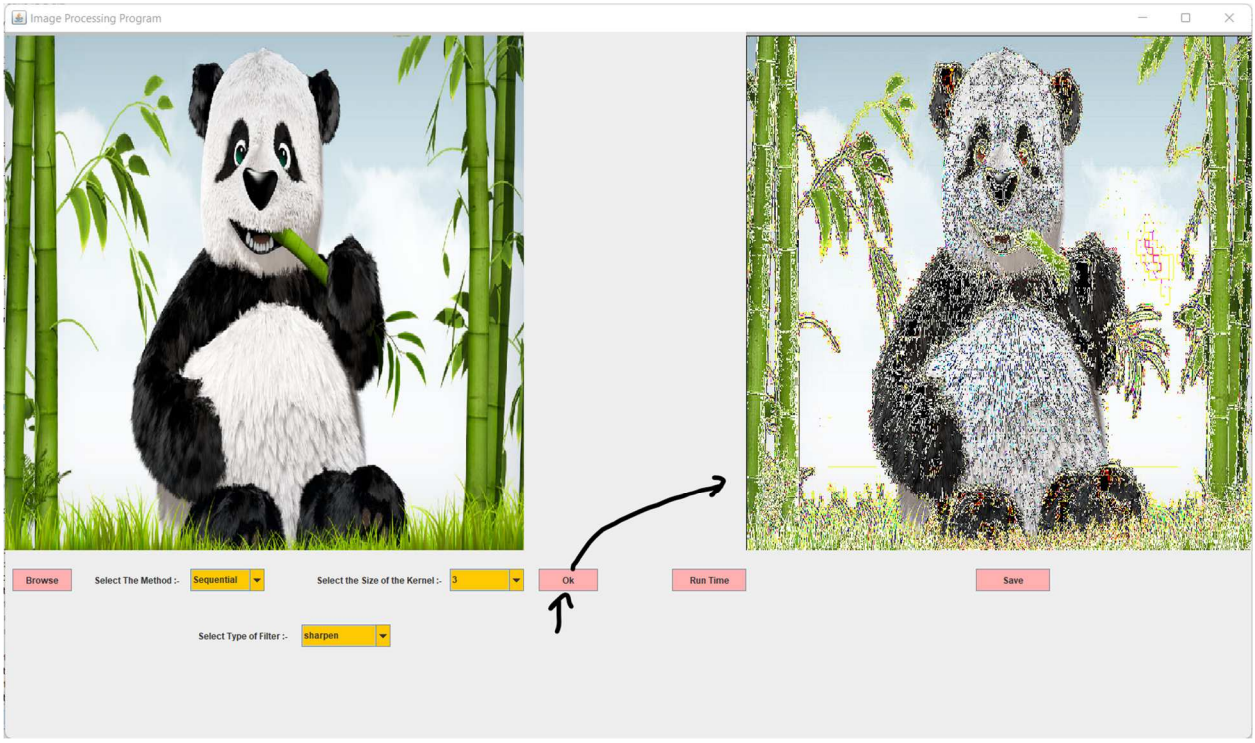
3. Browse Button :



4.Select The Method & Filter and Kernel Size :

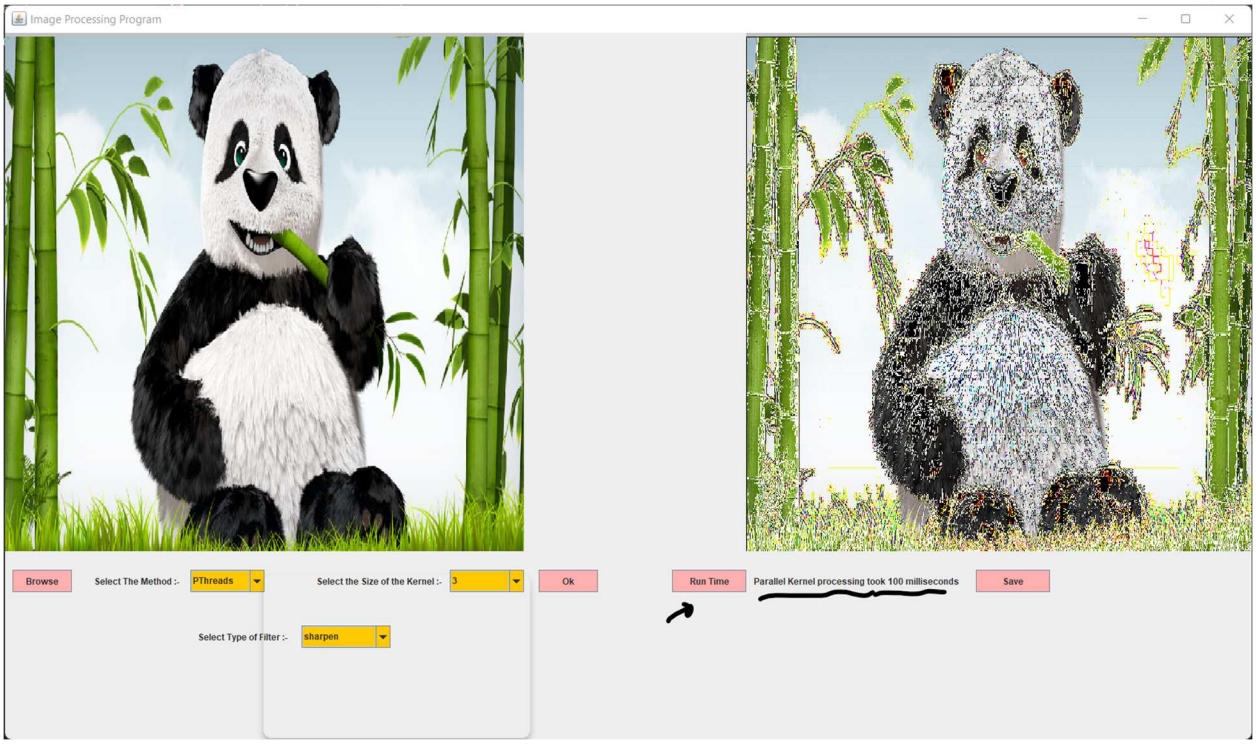


5. OK Button :



6. Run Button (Sequential):

7. Run Button (PThreads):



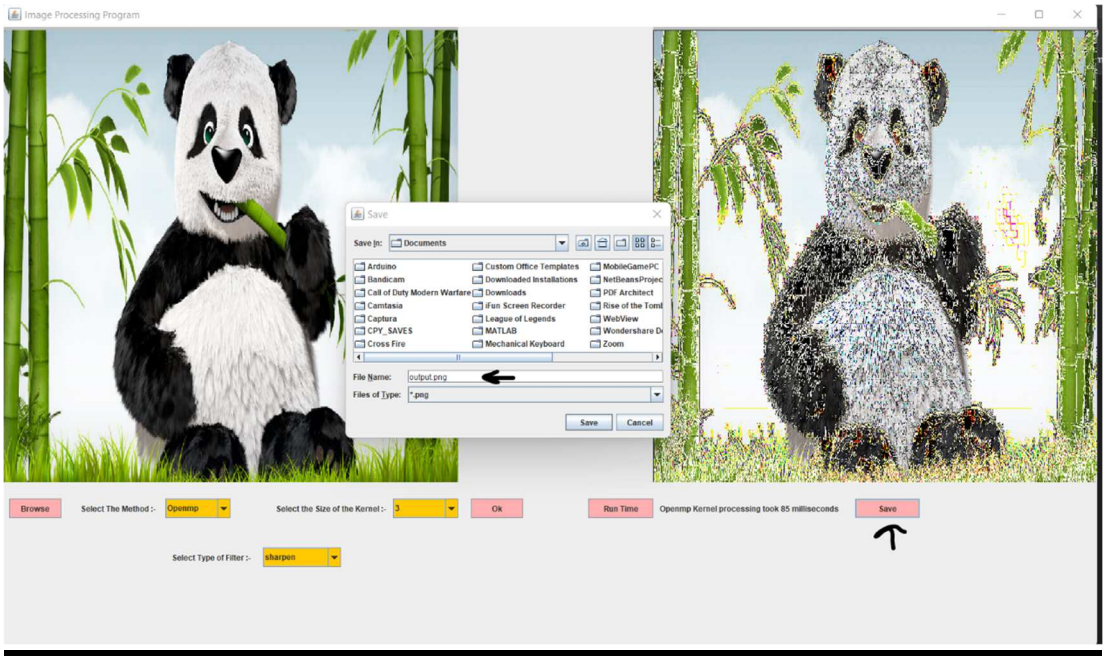
8. Run Button (Openmp):

9.Comparison between Sequential & PThreads and Openmp :

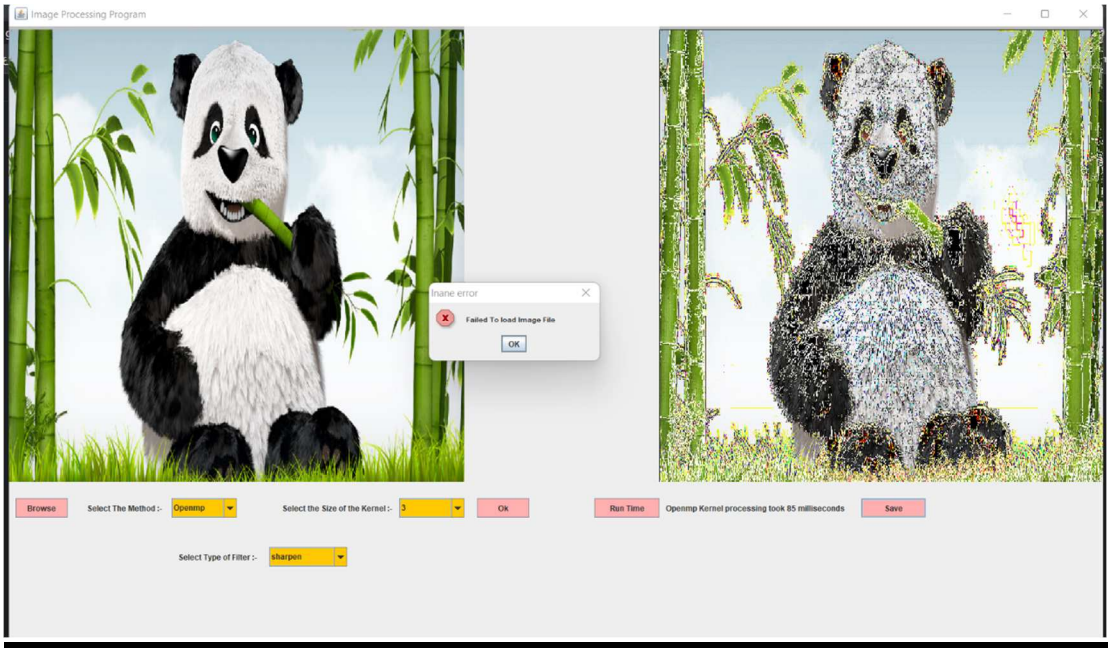
We notic that **PThreads** and **Openmp** method faster than **Sequential** method

And Openmp method slightly faster or close to PThreads method.

10. Save Button :



11. if we cancel save image :



12.if we selected last 3 filters with size 5 :