Analysis of Image Processing Results

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Interim Report II

(10^{th} September 2016 – 10^{th} October 2016)

I am currently working on the same project of dashboard generation; certain additional tools have been embedded into it.

Dashboard Generation -

Introduction –

- The aim of this project is to design a dashboard for certain csv(comma separated value) and log files, which would display details of these in addition to certain graphs for indicating kernel execution times.
- The python program takes as input a csv file, its corresponding log file, median value files (if any) and path to the images which can be viewed in the dashboard.
- The skills used for the development of this dashboard are python, angularjs, javascript, bootstrap, css, html, matplotlib and jquery.

The procedure has been described earlier, a few additional scripts have been written to reduce the loading time and increase the usability of the site.

Procedure –

- The dashboard serves the purpose of displaying details such as kernel execution time, total time etc. on executing certain algorithms over several images and drawing a comparison between different test environment types.
- The set of csv files include details of algorithms such as sum of squared differences, mutual induction, gradient image filter etc.
- The aim was to display the logs of execution of these algorithms over certain images.
- Furthermore, graphs were also made using matplotlib, including comparison plots, box plots.
- Modules such as numpy were used.
- The initial task was to understand use of these tools and install libraries on my system.

- On executing the program, it generates a result.html file which displays the required details and graphs.
- Angularjs and jquery are used for sorting the contents within a table, according to column.
- Bootstrap, css are used for overall styling of the html file.
- Python is the language in which whole code is written.
- Matplotlib is used to generate comparison plots and box plots.

Beautiful Soup –

Beautiful Soup is a Python package for parsing HTML and XML documents (including having malformed markup, i.e. non-closed tags, so named after tag soup). It creates a parse tree for parsed pages that can be used to extract data from HTML, which is useful for web scraping.[2]

It is available for Python 2.6+ and Python 3.

jQuery toggle()

With jQuery, you can toggle between the hide() and show() methods with the toggle() method.

jQuery load() Method

The jQuery load() method is a simple, but powerful AJAX method.

The load() method loads data from a server and puts the returned data into the selected element.

Syntax:

$(*selector*).load(*URL,data,callback*);

The required URL parameter specifies the URL you wish to load.

The optional data parameter specifies a set of querystring key/value pairs to send along with the request.

The optional callback parameter is the name of a function to be executed after the load() method is completed.

The Modal Plugin

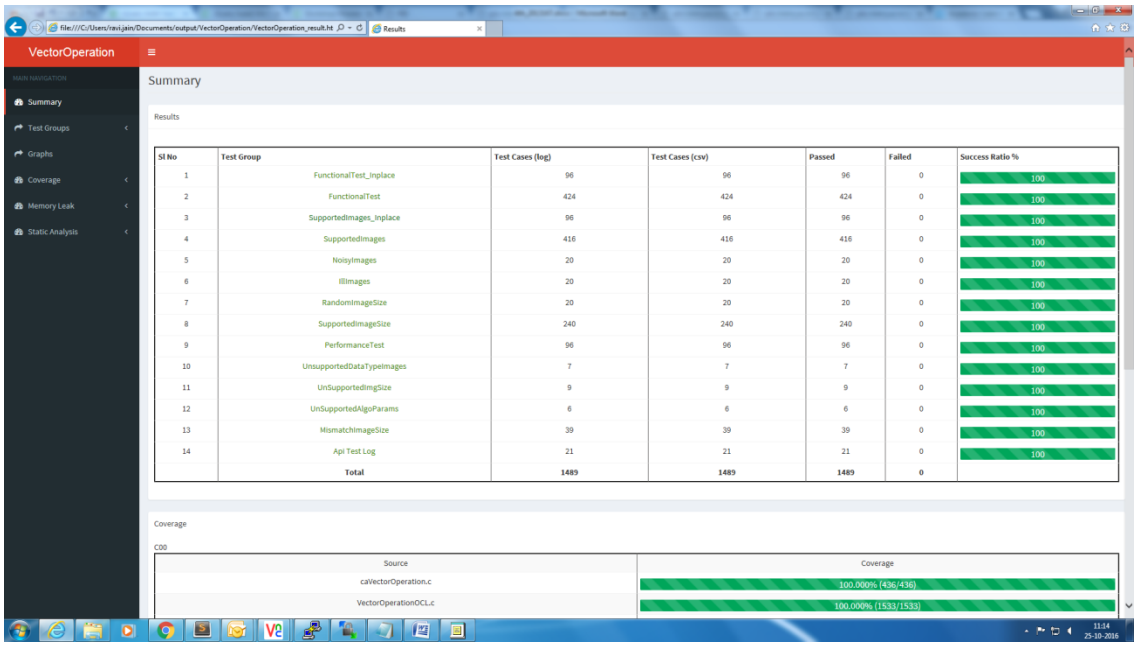
The Modal plugin is a dialog box/popup window that is displayed on top of the current page

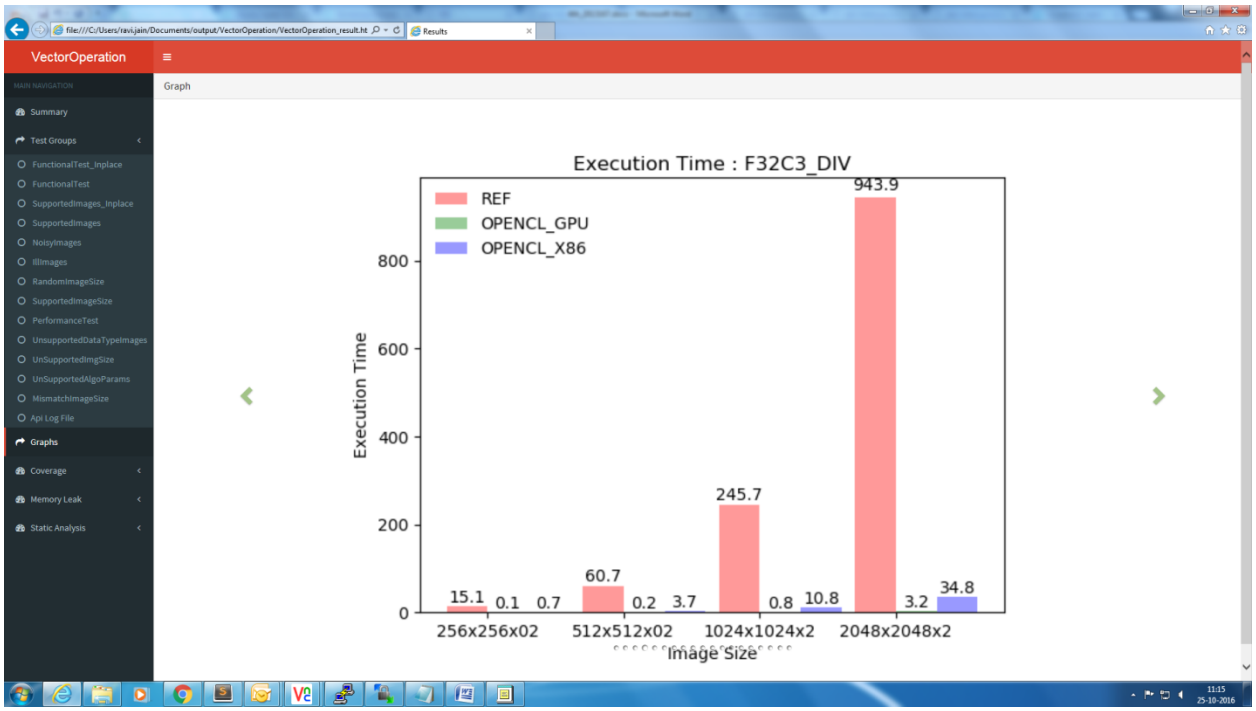
Use of JSON scripts –

JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language,Standard ECMA-262 3rd Edition - December 1999. JSON is a text format that is completely language independent but uses conventions that are familiar to programmers of the C-family of languages, including C, C++, C#, Java, JavaScript, Perl, Python, and many others. These properties make JSON an ideal data-interchange language.JSON is built on two structures:

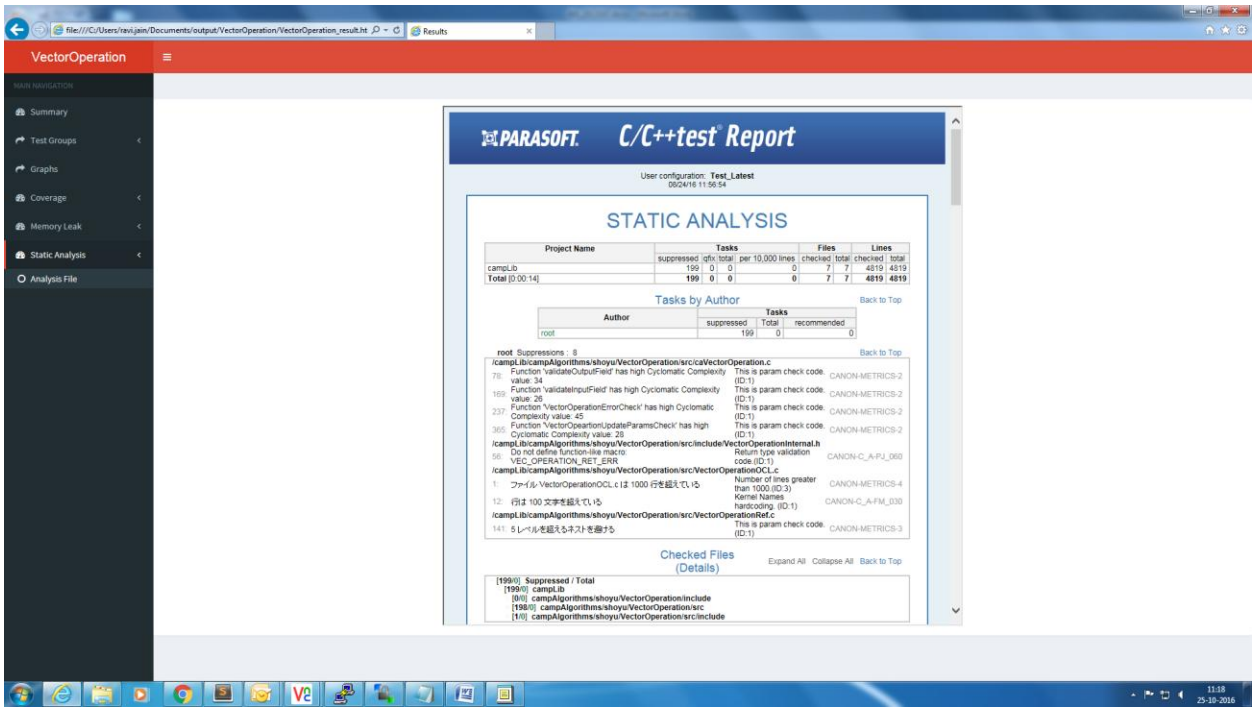
- A collection of name/value pairs. In various languages, this is realized as an *object*, record, struct, dictionary, hash table, keyed list, or associative array.
- An ordered list of values. In most languages, this is realized as an *array*, vector, list, or sequence.

Screenshots of Output generated –




VectorOperation
Graph
Summary
Test Groups
FunctionalTest_Inplace
FunctionalTest
SupportedImages_Inplace
SupportedImages
NoisyImages
IllImages
RandomImageSize
SupportedImageSize
PerformanceTest
UnsupportedDataTypeImages
UnSupportedImgSize
UnSupportedAlgoParams
MismatchImageSize
Api Log File
Graphs
Coverage
Memory Leak
Static Analysis
Execution Time : F32C3_DIV
REF
OPENCL_GPU
OPENCL_X86
Execution Time
800
600
400
200
0
15.1
0.1
0.7
60.7
0.2
3.7
245.7
0.8
10.8
943.9
3.2
34.8
256x256x02
512x512x02
1024x1024x2
2048x2048x2
Image Size


VectorOperation
Uncovered Lines Summary
Summary
Test Groups
Graphs
Coverage
C00
C01
Uncovered Lines Summary
Memory Leak
Static Analysis
File Links
SNo
File Link
1 C00 VectorOperationRef.c line 74
2 C00 VectorOperationRef.c line 75
3 C00 VectorOperationRef.c line 154
4 C00 VectorOperationRef.c line 155
5 C00 VectorOperationRef.c line 188
6 C00 VectorOperationRef.c line 189
7 C00 VectorOperationRef.c line 297
8 C00 VectorOperationRef.c line 298
9 C01 caVectorOperation.c line 152
10 C01 caVectorOperation.c line 153
11 C01 caVectorOperation.c line 154
12 C01 VectorOperationOCL.c line 257
13 C01 VectorOperationOCL.c line 278
14 C01 VectorOperationOCL.c line 322
15 C01 VectorOperationOCL.c line 343
16 C01 VectorOperationOCL.c line 386
17 C01 VectorOperationOCL.c line 407
18 C01 VectorOperationOCL.c line 447
19 C01 VectorOperationOCL.c line 468
20 C01 VectorOperationOCL.c line 509
21 C01 VectorOperationOCL.c line 530



Due to company's terms and conditions, can't share all images.

These are the images of all the details which have been embedded into the site for proper functioning of it.

Tools Used -

- Python 2.7
- Matplotlib
- Gedit, sublime
- Jquery, javascript
- Angularjs
- bootstrap, css, html
- beautiful soup

Conclusion –

- The readings and output were successfully obtained.
- Certain observations were made regarding these operators.
- The python programming code was able to generate the required files.