**DOCUMENTATION FOR STATIC CODE ANALYSIS**

There are two types of web services used in this project:-

* StaticCodeAnalysisToolsService
* StaticCodeAnalysisGatingService
* StaticCodeAnalysisToolsService- There are two services used.
  1. RunPMDTool- It is a service which is used to run the static analysis tool “PMD” over the sample code(here, “feereport”). The result of running this service would be a a set of errors stored in “FinalReport.csv”.

The input parameters to this service are sample code directory’s path(sampleCodeDirectory) and the path of “FinalReport.csv”(finalReportPath).

* 1. RunAllTools- It is a service which is used to run all static analysis tools present in the system over the sample code. The errors and warnings given by all these tools would be merged and stored in “FinalReport.csv”.

The input parameters to this service are sampleCodeDirectory (sample code directory’s path) and finalReportPath (the path of “FinalReport.csv”).

* StaticCodeAnalysisGatingService- There are four services used.
  1. GateErrorsUsingPMDTool- This service is used to run PMD tool over the sample code and if static analysis is successful over that code, then it will compare the number of errors with the threshold. If the number of errors is greater than the threshold number provided in the parameter, then Static Analysis Gating would fail, otherwise it would pass. The parameters to this service are threshold, sampleCodeDirectory and finalReportPath.
  2. GateErrorsUsingPMDToolRelatively- This service is used to run PMD tool over the sample code and if static analysis is successful over that code, then it will compare the number of errors with the number of errors in the last run. (The number of errors of all runs will be stored in a file named “Errors.txt”). If the number of errors is greater than the number of errors in the last run, then Static Analysis Gating would fail, otherwise it would pass. The parameters to this service are sampleCodeDirectory and finalReportPath.
  3. GateErrors- This service is used to run all tools over the sample code and if static analysis is successful over that code, then it will compare the number of errors with the threshold. If the number of errors is greater than the threshold number provided in the parameter, then Static Analysis Gating would fail, otherwise it would pass. The parameters to this service are threshold, sampleCodeDirectory and finalReportPath.
  4. GateErrorsRelatively- This service is used to run all tools over the sample code and if static analysis is successful over that code, then it will compare the number of errors with the number of errors in the last run. (The number of errors of all runs will be stored in a file named “Errors.txt”). If the number of errors is greater than the number of errors in the last run, then Static Analysis Gating would fail, otherwise it would pass. The parameters to this service are sampleCodeDirectory and finalReportPath.