**USPTO Code Review Report**

**PEDS – 06/08/2017**

A formal code review was completed on 6/8/2017 against the PEDS AIS code base. The following data summarizes the results of the review and highlights any areas in which code must be further modified due to current inefficiencies or weaknesses. For further details, please see the associated Excel file.

**Final Score:** 90.8% (Pass)

Legend: 90% -100% (Pass)

80% - 90% (Work Needed – Rework timelines to be determined)

< 80% (Fail – Restructure may be necessary)

1. Reporting Categories:
2. Program Profile
3. Automation Design
4. Code Details
5. USPTO Coding Standards
6. Program Profile
   1. Language: Java/Java Script
   2. Total # of Lines Reviewed: 15850
   3. Total Defects Reported: 10 (41 Code Inconsistencies found but do not rise to the level of defect)
7. Automation Design
8. Design Document 17.5% (out of 20%)
9. Automation Nomenclature and Organization 10% (out of 10%)
10. Automation Design Reflected in Code 27.75 % (out of 30%)
11. Automation Code Coverage 29% (out of 30%)
12. Automation Test Script Map 10% (out of 10%)

Total: Automation Design 94.25% (out of 100%)

1. Code Details
2. # Critical Scripts/Programs 27
3. # of Requirement Points Identified 229
4. # of Requirement Points Validated 208 (91% out of 100%)
5. Modularity Percentage 99%
6. Scalability Percentage 96%
7. Repeatability Percentage 94%
8. Results Logs Efficiency 90%
9. Configured in Jenkins 98%
10. Code Flexibility 95%
11. Optimum Use of Data 85%
12. Comprehensive Error Handling 89%
13. Performance (Minimal Delays) 98%
14. Optimum Execution Flow 98%
15. Successful Execution 88%

Total: Automation Design 94.25% (out of 100%)

1. Coding Standards (13 Criteria specific to USPTO) 100% Average
2. Variables: Variable names which do not hold Constant values must be in lower Camel Case while those which hold Constant values use Capital Letters separated by underscore (\_). Variable names must intuitively describe the value they hold.
3. Functions: Function names must be in lower Camel Case. Boolean Functions must be prefixed with “is”. Getter Functions must be prefixed with “get”. Setter Functions must be prefixed with “set”.
4. Arrays: Array names must be in lower Camel Case and the names should preferably be plural to denote multiple elements.
5. Do Not use Case-Sensitivity to distinguish between Names. Do not create two different variables/functions/objects with the name differing only in case.
6. Semicolons always used?
7. Try/Catch used correctly?
8. Starting Curly Brackets of a loop construct, which follow a function name, should be on the next Line.
9. Ending Curly Brackets of a loop construct, which follow a function name, must be on the Next Line.
10. Always declare variables using the var keyword. This ensures proper Scope resolution.
11. Minimize the use of Global Variables. Instead, define variables at a module, function, or loop level.
12. Minimize Nesting of Loops. An optimum nesting level is up to three inner loops.
13. Always use the Post Increment Operator ++ Instead of +=.
14. Always Use the Array Literal [] Instead of constructor new Array( ).
15. General Observations / Recommendations

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| --- | --- | --- | --- |
| **General Observations** | **Action Plan** | **Priority** | **Defect** |
| Some inconsistencies in the logged methods used for verification and validation. | Review the current logs for inconsistencies and re-code as necessary | Very High | None - Inconsistent Only |
| Common function verifications could be made stronger. (see examples in the Code Details worksheet) | Review the functions to ensure proper validation for the input data and features. | Very High | None - Inconsistent Only |
| Execution errors within the scripts | Clean up the execution errors identified in the table in Code Details. | Very High | ***See Error Listing Below*** |
| Keyboard Input picture doesn't show the input data or in some cases the errors that were generated. | Rework the configuration for pictures to catch relevant data. | High | None - Inconsistent Only |
| Some of the Try/Catch combinations are detailed messages while others are the default Try/Catch without elaboration. | Rework the code for Try/Catches to make them more effective. | Medium | None - Inconsistent Only |
| Valid data usage could be improved | Improve data input (where possible) so that it more relevant and consistent across the environments. | Medium | None - Inconsistent Only |
| A number of data worksheets don't have a name other than Sheet N. Are all of these in use? | Suggestion: Delete those that aren't and provide real names to those sheets that are in use. | Medium | None - Inconsistent Only |

1. Additional Observations (Corrected during Review)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Script** | **Function** | **General Notes and Standards** | **Code Examples** | **6/8/2017** |
| AllFilters\_Search\_Functions | checkTopFilters\_textbx() | Do Not use Case-Sensitivity to distinguish between Names. Do not create two different variables/functions/objects with the name differing only in case. | var searchType = exlSheet.Value("Search\_Type");  var searchtype =exlSheet.Value("SearchTypes"); | Corrected for the specific example |
| ApplicationType\_Functions | verifyappTypeNo() | Try/Catch used correctly? | No Try/Catch used. | Corrected |
| verify\_Validate\_Class\_subClass\_functions | click\_Class\_subClass\_Link() | Detailed error messages should be consistent with the logic and correctly worded for clarity | Log.Checkpoint("The class and Sublcass link DOEs NOT exist and is Clicked as expected"); (Can't be clicked if it doesn't exist) | Corrected but should review spelling |
| FilingDate\_Function | verify\_Date\_picker() | Common functions should not contain hardcoded data. | selecting\_Dates("2015", "Apr", "4") endDat\_TBx.Click(); selecting\_Dates("2017", "Mar", "4") | Corrected. Hard coded data removed. |
| functionsPBD | collapseAl() | Validation of the actual collapse of records is needed. Follow through of the action… | if (collapseAll.Exists)   {  collapseAll.Click();  Log.Checkpoint("All Results collapsed !");  }   else   {  Log.Error("Collapse All link does not exist");  } | Corrected |
| AppNo\_UI\_DB\_Validation\_PatentTermExtHistoryTab | verify\_Validate\_AppNum\_\_UIData() | Always Use the Array Literal [ ] Instead of constructor new Array( ). | var array\_1 = new Array(), array\_2 = new Array();array\_3 = new Array(); | Corrected |

1. Action Plan / High-Level Summary

| **Action Plan** | | | |
| --- | --- | --- | --- |
| **High-Level Summary** | | | |
| Code Review Passes | | | |
| **Automated Code Review Action Plan Notes** | | **Suggested Remediation Timeline** | **Assigned Action Steps \*\*** |
| **Automation Design** | | | |
| Automation Design | Automation Design Passed | TBD by SME and TM | None |
| **Code Details** | | | |
| % Validated | Automation Validation Passes | TBD by SME and TM | 5/31/2017 |
| Modular | Automation Modularity Passes | TBD by SME and TM | None |
| Scalable | Automation Scalability Passes | TBD by SME and TM | None |
| Repeatable | Automation Repeatability Passes | TBD by SME and TM | None |
| Results Logs | Results Logs Need Work - Please review code with SME and TAB Architect Prior to Update | 28 Man hours | Modifications requested |
| Jenkins Configuration | Jenkins Configuration Passes | No Time Needed | Ensure successful execution in Jenkins |
| Optimum Use of Data | Data Usage Needs Work - Please review data elements with SME and TAB Architect | 15 Man hours | Data modifications requested |
| Error Handling | Error Handling development Needs Work - Please review Error Handling techniques with SME and TAB Architect | 60 Man hours | Error Handling modifications requested |
| Jenkins Execution | Jenkins execution of scripts Needs Work - Please review Jenkins configuration and script execution with SME and TAB Architect | 5 Man hours | Ensure inclusion of all necessary scripts |
| **Coding Standards** | | | |
| Coding Standards | Coding Standards Pass | TBD by SME and TM | Some coding standard modifications requested |

1. Error Listing / Defects

| Program | Error Identified | Defect | Severity | Est. Hours to Fix |
| --- | --- | --- | --- | --- |
| AppNo\_UIrDB\_Validation\_TransactionHistoryTab | Had no issues running in PVT. Transaction Tab was found and selected. Invalid # of total rows counted for Transaction History tab. Seems out of sync with the other row #'s and totals. Separate email sent and item was resolved. Encountered an error message regarding attempt to perform an action against a zero sized window. Ran to completion the next run. | ID2344 | Low | N/A |
| PatentNo\_Scripts | The Jenkins job didn't execute successfully in the last cycle. When the value is not found, consistently receives an error message regarding: "The Result table is not present and the following error message is being generated: Sorry, the entered International Design Registration Number "" cannot be retrieved as entered. Please re-enter the International Registration Number in an alternate format: "DM/######" or try a new search. | ID2397 | Medium | N/A |
| USPCTNo\_UI\_DB\_Comparision | The logs showing the data comparison could be further detailed with the name of the field being validated. | ID2542 | Medium | N/A |
| Earliest\_Pub\_No\_Scripts | The only issue with the Jenkins execution was a wrong error message displayed. Another user had the data file open and it generated an error message. Rerun without issue in FQT. | ID2611 | Low | N/A |
| FilingDate\_Scripts | Property Date value doesn't match expected value. FQT execution ran into zero sized windows, and Unable to obtain the item's rectangle error messages. These errors have been consistent. | ID3003 | Medium | N/A |
| FirstNamedApp\_Scripts | Errors generated regarding zero sized window and Show More link not being available. Reran without issue. There was no specific test regarding the Address being verified along with the name. | ID3111 | Low | N/A |
| FNamed\_ApplicantDB\_UIComp | Error generated when this script ran in FQT. See log information. All Applicant link is missing. | ID3497 | High | 3 Man hours |
| InternationalRegNo\_Scripts | Wrong error message displayed: No Results were found for the selected criteria. One section of the collapseAl() function shows a message of collapse validation, but does not really validate any action:  if (collapseAll.Exists)   {  collapseAll.Click();  Log.Checkpoint("All Results collapsed !");  }   else   {  Log.Error("Collapse All link does not exist");  } | ID3577 | High | 2.5 Man hours |
| IntrntlRegNo\_UI\_DB\_Validation\_AppDataTab | Error generated: Displaying of Application Data Tab for International Design did not execute successfully: External table is not in the expected format. Looking at the previous version, the Title of Invention does not appear to populate in the log messages. The All Applicants hyperlink has not been specifically validated or logged. One data source, so limited validation for optional data values. | ID4365 | High | 5 Man hours |
| Verify\_Validate\_WIPO\_Pub\_Number | The application is displaying the result table for the invalid data: ///WO 2015/089526 | ID4661 | High | 6 Man hours |