QTP Open Source Test Automation Framework Coding Standards for Developers

Version 1.0

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TABLE OF CONTENTS

1. PURPOSE OF THE DOCUMENT ........................................ 3
   1.1. Scope ..................................................................... 3
   1.2. Overview ............................................................ 3

2. NAMING STANDARDS .................................................. 4
   2.1. Naming Standards for Variables ................................. 4
   2.2. Naming Standards for Constants ............................... 4

3. FUNCTION/PROCEDURE ............................................... 5
   3.1. Function Name .................................................... 5
   3.2. Function Header .................................................. 5
   3.3. Function Complexity .............................................. 5
   3.4. Function Structure ............................................... 6

4. COMMENT STANDARDS ................................................ 7
   4.1. Framework Code Header Comments ........................... 7
   4.2. Line Comments .................................................... 7

5. GENERAL GUIDELINES ............................................... 9
1. **Purpose of the Document**

The purpose of this document is to describe standards to be followed when designing and developing framework code. This document will help ensure consistency across the code, resulting in increased usability and maintainability of the developed code.

1.1. **Scope**

The scope of this document is to provide standards for designing and developing Open Source Test Automation Framework code for various tools and technologies.

1.2. **Overview**

This document provides guidelines for:

- Naming standards
- Functions and procedures
- Comment standards
- General guidelines
2. Naming Standards

2.1. Naming Standards for Variables

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Prefix</th>
<th>Length</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boolean</td>
<td>bln</td>
<td>Up to 20 characters</td>
<td>blnFlag</td>
</tr>
<tr>
<td>Integer</td>
<td>int</td>
<td>Up to 20 characters</td>
<td>intCount</td>
</tr>
<tr>
<td>Long</td>
<td>lng</td>
<td>Up to 20 characters</td>
<td>lngRowNumber</td>
</tr>
<tr>
<td>Double</td>
<td>dbl</td>
<td>Up to 20 characters</td>
<td>dblWeight</td>
</tr>
<tr>
<td>Object</td>
<td>obj</td>
<td>Up to 20 characters</td>
<td>objCurrent</td>
</tr>
<tr>
<td>Single</td>
<td>sng</td>
<td>Up to 20 characters</td>
<td>sngPosition</td>
</tr>
<tr>
<td>String</td>
<td>str</td>
<td>Up to 20 characters</td>
<td>strCurPage</td>
</tr>
<tr>
<td>Array</td>
<td>arr</td>
<td>Up to 20 characters</td>
<td>arrCellData</td>
</tr>
<tr>
<td>Variant</td>
<td>vnt</td>
<td>Up to 20 characters</td>
<td>vntPropValue</td>
</tr>
<tr>
<td>User-defined Type</td>
<td>udt</td>
<td>Up to 20 characters</td>
<td>udtTransaction</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scope</th>
<th>Prefix</th>
<th>Length</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>g</td>
<td>Up to 20 characters</td>
<td>gStrAppPath</td>
</tr>
<tr>
<td>Module-Level</td>
<td>m</td>
<td>Up to 20 characters</td>
<td>mintRowCount</td>
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<tr>
<td>Static</td>
<td>s</td>
<td>Up to 20 characters</td>
<td>svntFlag</td>
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<td>Variable Passed by Reference</td>
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<td>Up to 20 characters</td>
<td>rintValue</td>
</tr>
<tr>
<td>Variables Passed by Values</td>
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<td>Up to 20 characters</td>
<td>vintValue</td>
</tr>
<tr>
<td>Local to the Function</td>
<td>None</td>
<td>Up to 20 characters</td>
<td>strCurPage</td>
</tr>
</tbody>
</table>

2.2. Naming Standards for Constants

- The constant names should be initial capped with underscores between words as shown in the following example.

  **Example:** gstrApplication_Path
3. Function/Procedure

3.1. Function Name

The function name should start with ‘Func_’ followed by the name of the function.

When arguments are passed to the function, the variable naming standards should indicate whether it is passed by value or passed by reference.

Example: Func_GetValue (strCurObject, intValue)

3.2. Function Header

The function or procedure header should contain the following:

- Name of the function
- Description of the function/procedure
- List of input parameters with their description
- Return value of the function with its description (Not applicable for procedures)
- Name of the person modifying it
- Date of modification

Example:

```
**************************************************
'Function Name     : Func_StrSearch
'Description        : This function is used to search for a sub string in the main string.
'Input parameters  :  strMainString - Main string that should be searched
   strSubString - Sub string that should be searched for
'Return Value:
   True - sub string present in the main string
   False - sub string not present in the main string
'Date of Creation: 19th Dec 2008
'Modified By       : Tester
'Date of Creation  : 19th Jan 2009
**************************************************
```

3.3. Function Complexity

Framework code should be designed and developed with minimal possible loops and conditions for reduced complexity and enhanced maintainability.
3.4. **Function Structure**

The following tips provide guidance for creating easy-to-read and easy-to-maintain code.

- Modularize the code for increased reusability and reduced redundancy.
- Code should be well indented with tabs. (Tab width should be 4).
- Values passed and returned to the functions should use simple variables.
- Reduce the use of global variables within the function. The scope of the variable should be decided based on the standards.
4. **Comment Standards**

4.1. **Framework Code Header Comments**

The framework code header should contain the following:

- The copyright and proprietary information
- Name of the framework code
- Author of the code
- Name of the reviewer
- Date of creation
- Version number

Every change to the framework code should be documented in the modification history. A modification history should contain the following:

- Name of the person who changed the code
- Date of change
- Version
- Changed function/event
- Change description

**Example:**

'The framework code header should contain the following:

- The copyright and proprietary information
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- Name of the person who changed the code
- Date of change
- Version
- Changed function/event
- Change description

**Example:**

'Project Name :Web Framework

'Author :Joe Coder

'Version :V1.0

'Date of Creation :19th Dec 2008

'#############################################################

'Modified By

'Reviewed By

'#############################################################

4.2. **Line Comments**

Significant lines in the code should be provided with inline comments to better explain the line of code's purpose and make it easier for subsequent developers to understand the code faster and more thoroughly.
Example:

'If the node is not specified - exit the function
If objNode is nothing then
  Exit Function
End If
5. General Guidelines

- Use Option Explicit.
- Use an ampersand (&) for concatenating strings instead of `+'.
- Set the objects to nothing for cleaning the memory.
- Use dynamic arrays (Redim Preserve).
- Declare only one variable in a line.
- There should not be more than 80 characters per line.
- The code should be properly indented.
- Declare variables using appropriate data types.
- Avoid using the variant data type
- Use procedures instead of functions if there is no return value.