

WinRunner Framework Evolution from a pilot project to a multi-project test team (on the example of a web application)

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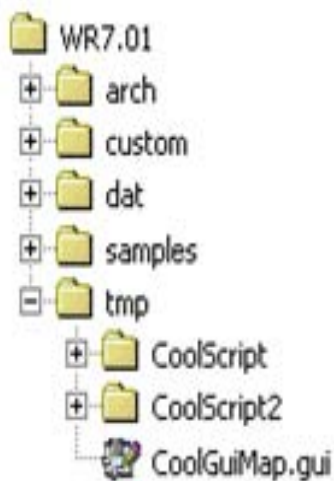
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Beginning

- **First version of the application.**
- **First WinRunner scripts developer**

```
# XYZ Inc.  
# Test Automation Team  
# Cool WinRunner script by Yury M.  
# Description: Tests the application  
  
GUI_load("C:\\Program  
Files\\Mercury\\WinRunner\\tmp\\CoolGuiMap.gui");  
web_browser_invoke(IE, "http://confut.bell.ont.ca");  
  
Blah();  
Blah();
```

All WinRunner scripts are stored on C:



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Step 2

• Libraries of functions introduced

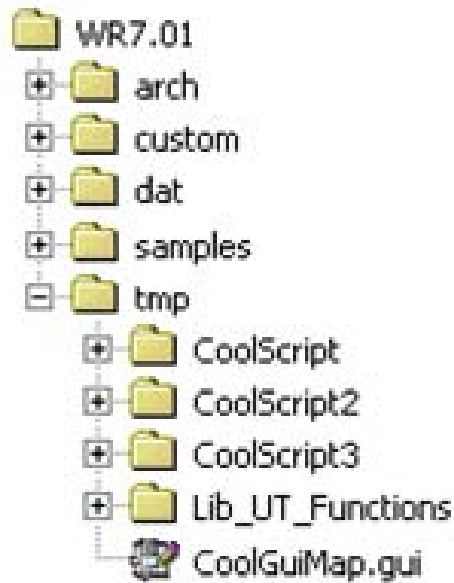
```
# XYZ Inc.  
# Test Automation Team  
# One more cool WinRunner script by Yury M.  
# Description: Thoroughly tests the application  
  
load("C:\\Program  
Files\\Mercury\\WinRunner\\tmp\\Lib_UT_Functions");  
  
GUI_load("C:\\Program  
Files\\Mercury\\WinRunner\\tmp\\CoolGuiMap.gui");  
web_browser_invoke(IE,"http://confut.bell.ont.ca");  
  
UT_Select_Language("English");  
UT_Login("a327012", "12345");  
UT_Select_Portfolio("KEY");
```

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Compiled Module "Lib_UT_Functions":



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Step 3

- **Several environments: QA + Production**
- **Hardcoded UT_Site_Open() function**

Main Test:

```

Load("C:\\Program Files\\Mercury\\WinRunner\\tmp\\Lib_
GUI_load("C:\\Program Files\\Mercury\\WinRunner\\tmp\\Co
UT_Site_Open( );
  
```

Compiled Module:

```

function UT_Site_Open( )
  #Opens a new UT site in a new browser window:
  {
    auto autoUTSiteURL = "http://confut.bell.ont.ca";
    web_browser_invoke ( IE, autoUTSiteURL );
    return 0;
  }
  
```

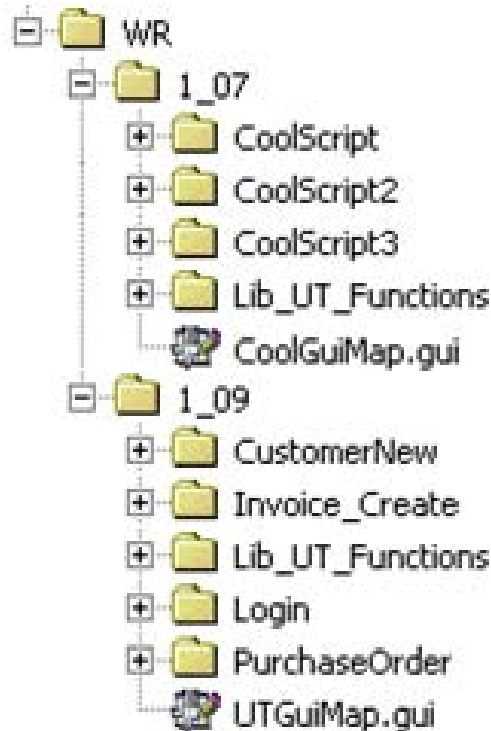
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Step 4

- New version of the application delivered
- Cloning of scripts



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- No full path for a GUI map or a script!

```

load("Lib_UT_Functions");
GUI_load("CoolGuiMap.gui");
UT_Open_Site( );

UT_Select_Language("English");
UT_Login("a327012", "12345");
UT_Select_Portfolio("KEY");

call "Invoice_Create"( );
  
```

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Step 5

- New member of a test automation team
- Only scripts execution
- Master – Apprentice relationship
- Everything is stored on C: drives
- Apprentice only copies scripts developed by a senior tester and executes them

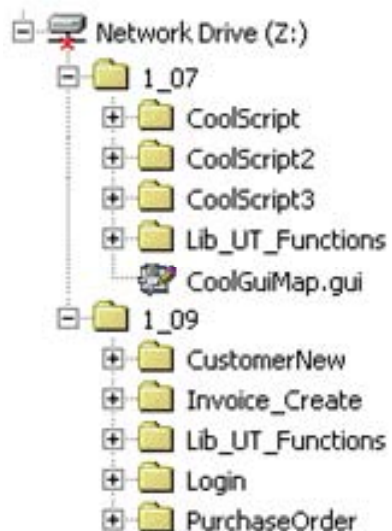
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Step 6

- Several testers working with WinRunner.
- Scripts moved onto shared Z: drive.



```

load("Lib_UT_Functions");
GUI_load("CoolGuiMap.gui");
UT_Open_Site( );
UT_Select_Language("English");
UT_Login("a327012", "12345");
UT_Select_Portfolio("KEY");
call "Invoice_Create"( );
  
```

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Step 7

- **Simultaneous execution/modification of the same script/library on different workstations.**
- **All modifications are performed on a local copy of a script.**
- **After debugging script will be copied onto a shared drive.**
- **Each script has an “owner”. Owner stores “master” copy of the script on his local workstation.**

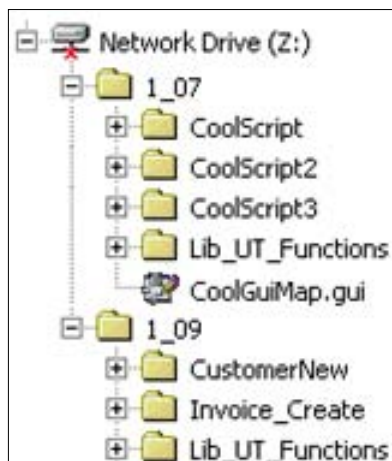
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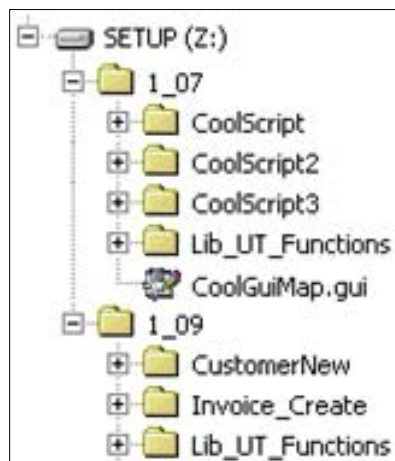
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Re-mapping of folders as an option

subst Z: Y:\Wrscripts:



subst Z: C:\Wrscripts:



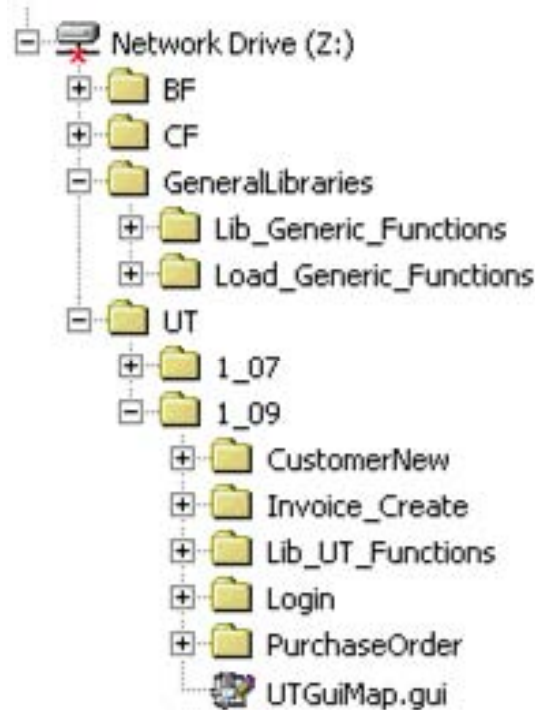
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Step 8

- **Test automation for several applications**
- **Application (version) specific libraries**
- **General libraries (used by all projects)**



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How to load an object from “General Libraries” folder
(GUI map, compiled module, data file)
from a main test script?

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Solution A

To find an object stored in another folder use:

- `PathOneLevelUp()` function and
- “*testname*” variable.

Path relative to a launched script.

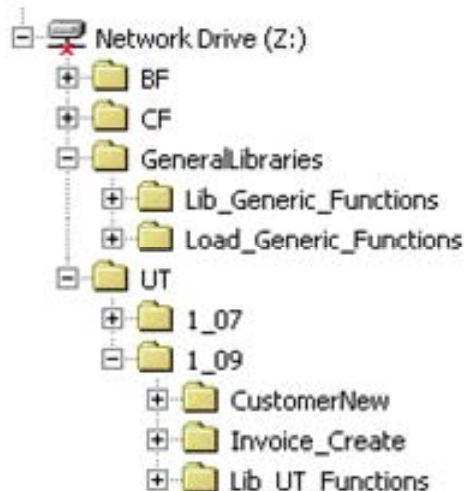
We can use this function recursively.

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```
load(PathOneLevelUp(PathOneLevelUp(PathOneLevelUp  
(getvar("testname")))) & "General libraries"  
& "\\\" & "Lib_Generic_Functions");
```



Z:\UT\1_09\CustomerNew

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Solution B

Use “Startup Test” to load generic libraries:



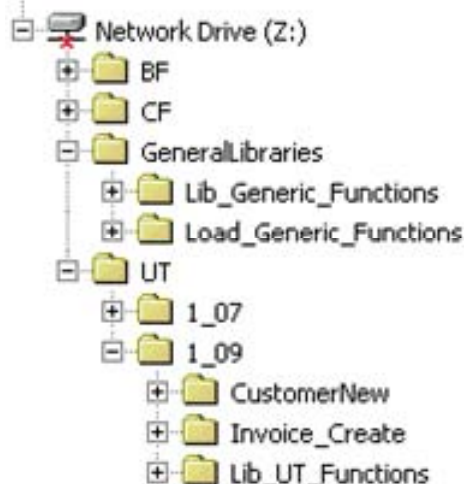
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```
function Load_Generic_Functions()
{
    load("Lib_Generic_Functions",0,0);
}

```



Main goal of `Load_Generic_Functions()` is to load a common library

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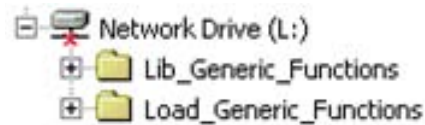
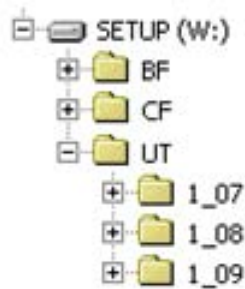
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We can store general libraries and main scripts on a different drive letters to decrease risk and streamline the logic .

subst W: C:\WRscripts

subst L: Y:\Wrlibraries



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Step 10

We need to execute the same script concurrently:

- against different environments,
- using different browsers,
- using different user roles/login IDs.

Store setup parameters in a local file.

- **C:\TestData\UTEnvironment.xls file:**

URL	Browser	UserID	Password
http://prodaceman1.configurator.com/ut	IE	a327842	123

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Code to retrieve parameters stored on a local workstation:

```
vLocalTestEnvironmentXls =  
    "C:\\\\TestData\\\\UTTestEnvironment.xls";  
  
# Retrieve environment variables from a file:  
ddt_open(vLocalTestEnvironmentXls);  
vURL = ddt_val (vLocalTestEnvironmentXls, "URL");  
vBrowser = ddt_val (vLocalTestEnvironmentXls, "Browser");  
vUserID = ddt_val (vLocalTestEnvironmentXls, "UserID");  
vPassword = ddt_val (vLocalTestEnvironmentXls, "Password");  
ddt_close(vLocalTestEnvironmentXls);
```

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Recommendations for project of any complexity

Implement the complete hierarchy of folders for WinRunner scripts from day one:

- Folder for general libraries
- Folder for All Application Scripts
 - Subfolders for different Applications
 - Subfolders for different Versions of the application
 - All scripts for a specific version of an application are stored on the same level of hierarchy

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Relative path and “testname” variable

- Use “testname” variable and relative path to all objects (scripts, GUI maps, data files)
- No specification of a full path starting with a drive letter

Implement a standard script header containing description of a script + all initialization steps

- GUI Load,
- Libraries load,
- Reading data file, etc.

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Load general libraries using Startup Test

Startup Test can also be used to:

- Load GUI maps common for all projects,
- Read common data files, etc.

Implement “Script Ownership” concept:

- Master copy of any script belongs to a specific person.

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Make it a standard!

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To make a decision

- To rely or not to rely on *wrun.ini* file?
wrun.ini files should be synchronized on all machines.
- To use or not to use CSO library?
Not a lot of functions. Conflict between CSO functions and in house developed functions.
- Exception handling.
Conflict of generic and project specific exceptions.

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Absolute portability

How to develop test scripts that could be launched from file system and TestDirector?

```
rc = getvar ("td_connection");
report_msg ("td_connection = " & rc );

if (rc == "on") {
    #Loading GUI map, libraries from TestDirector database
    rc = GUI_load( "TD_UT_GUI.gui" );
    load( "[TD]\\Subject\\ZTest\\Lib_UT_Functions",0,0);
}
else {
    #Loading GUI map and libraries from a file system:
    rc = GUI_load( "UT_01.gui" );
    load( "Lib_UT_Functions",0,0);
};
```

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