QTP

License :

It is commercial tool and hence it requires a license is expensive. It supports different environments like SAP, Oracle, .NET  but user need to purchase add-on license for them. Automation testing is expensive due to licensing cost.

License is costly which depends on the type of package selected.

It is used for testing client-server applications. It can test web- based as well as desktop applications

UFT only supports VB scripT , **VB script** is used in UFT which is easy when compared with Java

UFT integrates with [test management](http://www.guru99.com/test-management.html) tool like HP [Quality Center](http://www.guru99.com/live-interactive-exercise-hp-alm.html)

HP QTP offers very good technical support

QTP is more user friendly and scripts are developed quickly.

Backward compatibility is powerful. Latest version of HP ALM supports code that was developed 5 years back.

**Object Repository and Identification :**   
UFT comes with built in object repository.  Object repository development and maintenance is quite easy in HP ALM.   
The object repository is a database that contains your UI elements. It determines how to identify your UI elements. If I have a web element, like an ID, in the object repository you will have an id equal to the id in the web element of the application.

Now you can use the objects in your object repository in different places in your code. If the object changes, you don’t have to look at the front end of the app. You simply go to the object repository and change it according to the ID. When identification of an object changes, it’s a lot easier to apply those changes without disrupting too much code, The update is done in a single place

This is the main advantage of the object repository because the identification definition is done once.

It supports internal tools like “Object Spy” - An object spy that includes native and web identification methods

InBuilt App

Power packed with various features and Add ons.  UFT is a complete end-to-end software test automation solution that includes a built-in **Object Repository** (to capture and organize test objects), and a built-in data table interface (for test data management).

 Standalone tool which can be integrated with **HP QC/ALM**.

Selenium

Its an open source tool hence it does not require license and is free. It supports addition of plug-ins to include features that are not provided by core Selenium. Web automation testing with Selenium incurs less cost

Using Selenium only web applications can be tested, doesn't support for Windows component (supports dialog box)

Selenium supports JAVA, .NET, Ruby, [Perl](http://www.guru99.com/perl-tutorials.html), [PHP](http://www.guru99.com/php-tutorials.html), and many other programming languages

You can support all mobile OS and versions.   
You can support all mobile devices.   
You can support all app types.   
Remote capabilities in the cloud.  
End to end solutions – can integrate NV, Load – performance along with your functionality.

Selenium does not  have such built in object repository, but object can be managed by using UI element user extension Static class file (opps). If your object changes, then you have to run through your entire code and redefine how you identify the object. Bt this can be made much easier using Selenium descriptive programming where the identification and modification of the object can be done in same manner as OR in QTP.

 FirePath and Firebug Add on allow us to identify the Objects The ability to identify an object by multiple properties rather than just a single property. **This is something new that HP originally doesn’t offer.**

Locators : Xpath, classname, name, ID and linktext , partial linktext and CSS selector

There is no such tool that integrates with Selenium

You have full integration to all CI environments

It has no official support, since it is an open source

It&rsquos a low level tool with less functionality. Script requires more time to develop and maintain.  
. It relies on the programmer’s ability to design test scripts to work. Selenium is an API to manage a web browser page.

With new Selenium release the API changes. So Test Scripts need to be updated

Selenium :

Selenium needed several peripheral software's integration with Frame work.

Junit / Testng,  
Log4j,  
Ant / Maven,

OOPs makes development and maintenance easier where as in Procedure-oriented programming language it is not easy to manage if code grows as project size grows.

OOPs provides data hiding whereas in Procedure-oriented prgramming language a global data can be accessed from anywhere.

**object-oriented programming language and object-based programming language**

Object based programming language follows all the features of OOPs except Inheritance. JavaScript and VBScript are examples of object based programming languages.

**Actual End-user Simulation**

Selenium performs actions in the background on the  
browser i.e. user can execute tests with the browser minimized.

QTP executes scripts equivalent to a person performing those steps manually on the application. So, browsers can’t be minimized (user cannot perform any other action on the machine while test is running).

Selenium Works on HTML Tags

High licensing and add-inns costs.

QTP

Many inbuilt functionalities by default and easy configuration.

Excellent Object Identification process/mechanism.

Easily integrated with test management tools like QC.

Does not support file uploads from local machine

Supports all kinds of File upload

**Conclusion:-**

 Using Selenium as the Functional Test Automation Tool, you can reduce the cost incurred for licensing using QTP.

 The efforts involved in scripting for Selenium increased by about 40 % than QTP in the initial stages. Once all the solutions are in place the efforts of automation using Selenium and QTP were almost the same.

With UFT provides easy scripts for windows components when it has deal with non-browser components.