



Altair

HyperWorks

Altair MotionView 2019 Tutorials

MV-1050: Automation Using TCL

altairhyperworks.com

MV-1050: Automation Using TCL

In this tutorial, you will:

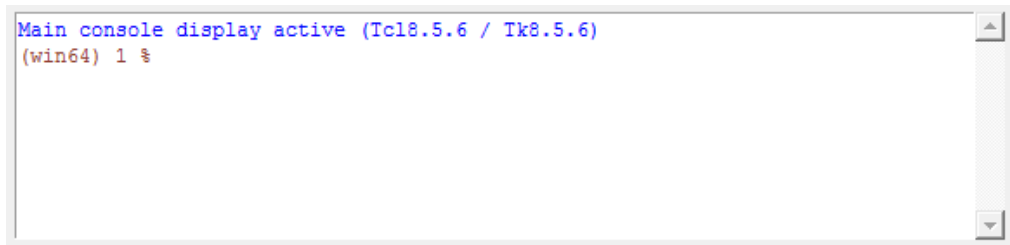
- Invoke a TCL script from **MotionView**. The TCL script automates the model building, solver runs and post processing in **MotionView**.
- Link the script to a Menu Item on the menu bar in **MotionView**.

Exercise: Automation using TCL

Step 1: Running the Script manually.

1. Start a new session.
2. From the **View** menu, click on **Command Window**.

A **TkCon** window opens up at the bottom of the screen.



The Command Window

3. Right-click in the **Command Window** and select **File > Load File**.
The **Source File** dialog is displayed.
4. Select the file `simple_auto.tcl` located in the `automation` folder.
5. Click **Open**.

Note The script does the following:

- Builds a Simple Pendulum model.
- Runs the model through the MotionSolve Solver (the pendulum is modeled to just swing under gravity).
- Creates new windows for Animation and Plotting and loads the animation results and the plotting results in these windows.

Note You can also invoke the script by using the following steps:

- In the Tk Console type `cd`
<installation_directory>/tutorials/mv_hv_hg/mbd_modeling/automation.

The Command Window acts like a UNIX shell.

- Type in `Source simple_auto.tcl` and press Enter.

Step 2: Creating a Menu Item that invokes the script automatically.

The TCL-script `simple_auto.tcl` that was discussed in **Step 1** can be linked to a **Menu Item** on the MotionView **Menu** bar.

1. Open a new text file in a text editor.
2. Type in the following lines in the text file:

```
*Id("MotionView v12.0")

*BeginModelDefaults()

    *BeginMenu(fut_mv_1050, "MotionView Tutorial Script")

        *MenuItem(automation_tutorial, "Tutorial Script", TCL, {
            getenv("ALTAIR_HOME") +
            "/tutorials/mv_hv_hg/mbd_modeling/automation/simple_auto.tcl"
        } )

    *EndMenu()

*EndModelDefaults()
```

3. Save the file as `script_invoke_menu.mvw` and place at any convenient location on your machine.

Note The `script_invoke_menu.mvw` file is a preference file.

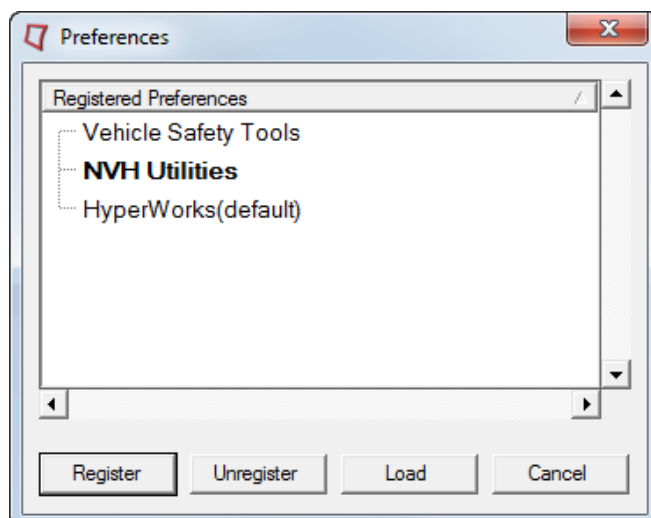
A preference file is a special script file that is read each time the program is started. It specifies default user settings such as the order in which colors are assigned, the default printer, default page layout, the autosave interval, and so on. Custom menu options in MotionView can be added using a preference file.

To learn more about the preference file, type 'preference file' under the **Index** tab under the **Help** menu.

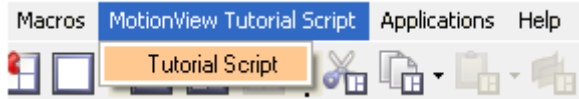
To learn more about the preference file statements, type 'preference statements' under the **Index** tab under the **Help** menu.

4. In **MotionView**, go to the **File** menu and select **Load > Preference File**.

The **Preferences** dialog is displayed.



5. Click **Register**.
6. Open the `script_invoke_menu.mvw` that you created.
A new registered preference is added to the list.
7. Select the new preference and click **Load**.
8. A menu called **MotionView Tutorial Script** is added to the **Menu** bar, under which you will find the Menu item **Tutorial Script**.



New menu item in HyperWorks Desktop - MotionView

9. Once this preference file is set, the new menu will appear every time **HyperWorks Desktop** is invoked.
10. Start a new session of **HyperWorks Desktop** by pressing the SHIFT + F9 on your keyboard.
11. Check to make sure that the application is set to **MotionView**.
12. Click the **Tutorial Script** under **MotionView Tutorial Script** menu to invoke the script `simple_auto.tcl` which in turn will make **MotionView** to perform the scripted operations.

Note If you no longer want your new menu item to appear on the menu bar, you can un-set the preference file by going to the **File** menu and selecting **Load > Preference File**. From the **Preferences** dialog, select `script_invoke_menu.mvw` and click on the **Unregister** button. This will make **MotionView** unload the preference file.