
MCode Block

MCodeBlock is a custom Simulink block, which helps to add/write MATLAB script inside a Simulink Model.

This block can be used in the following ways as:

1. **Parameter File** - The parameters required for the Simulink model can be saved, initialised and retrieved using this block.
2. **Comments/Document File** - The comments for the Simulink model can also be added using this block. This block can be used in any levels of the model and comments for the level can be added.
3. **Callbacks** - Provides extended callback for the Simulink model.

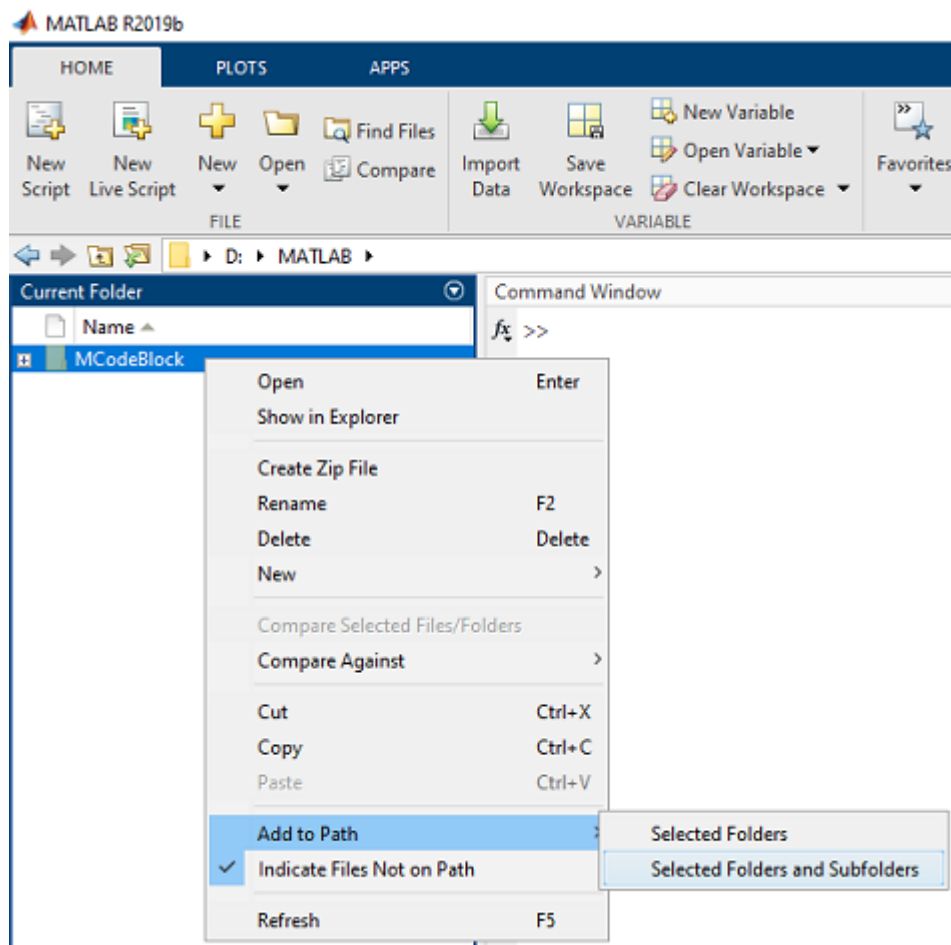
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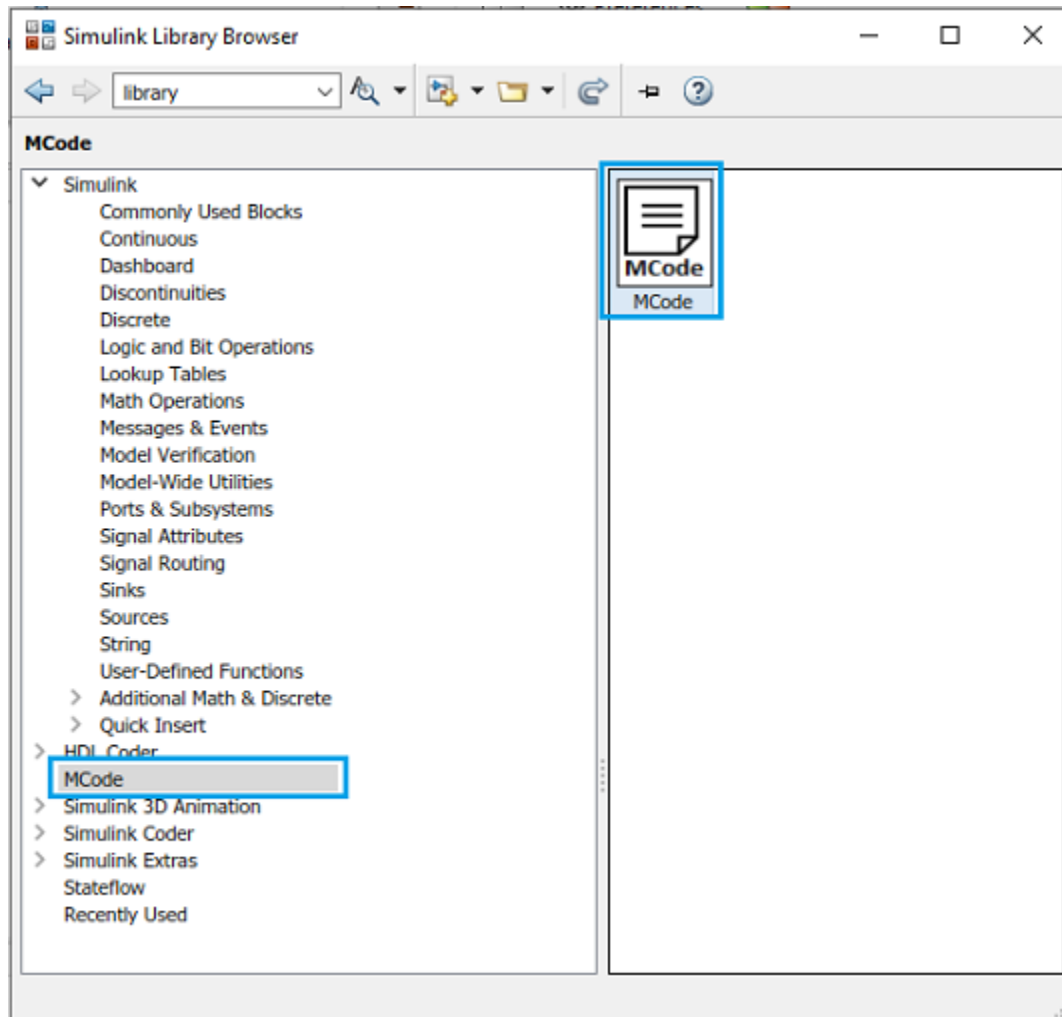
Version: 1.0 - Initial Version.

MCode Block Library

- Add the MCodeBlock folder to the MATLAB path, then the MCode block library will be available to use from Simulink Library Browser.



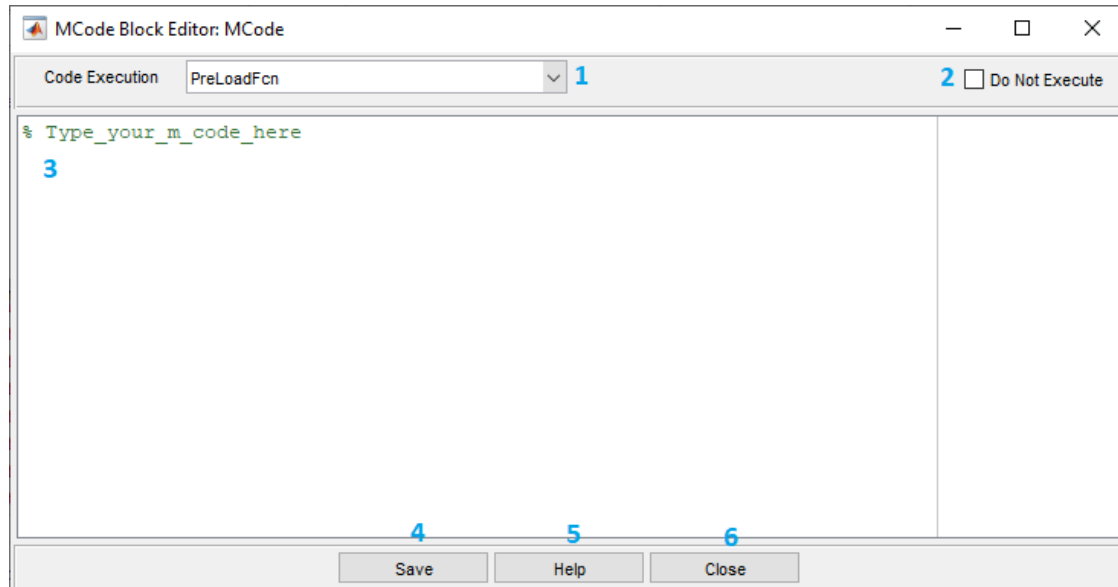
- If this library is not visible in Simulink Library Browser, then close the Simulink and type following command in MATLAB command window. >> sl_refresh_customizations
- Now, it will become available within the Simulink Library Browser.



- Alternatively, MCode block can be copied from the lib\mCodeBlockLibrary.slx file.

MCode Block Editor

- On double clicking the MCode block, a MCode Block Editor GUI opens with default text in the text area.

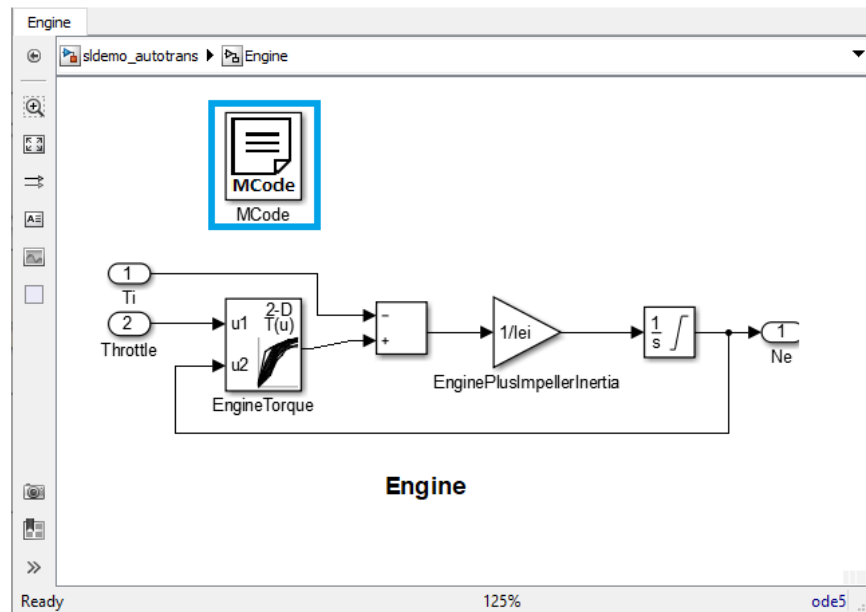
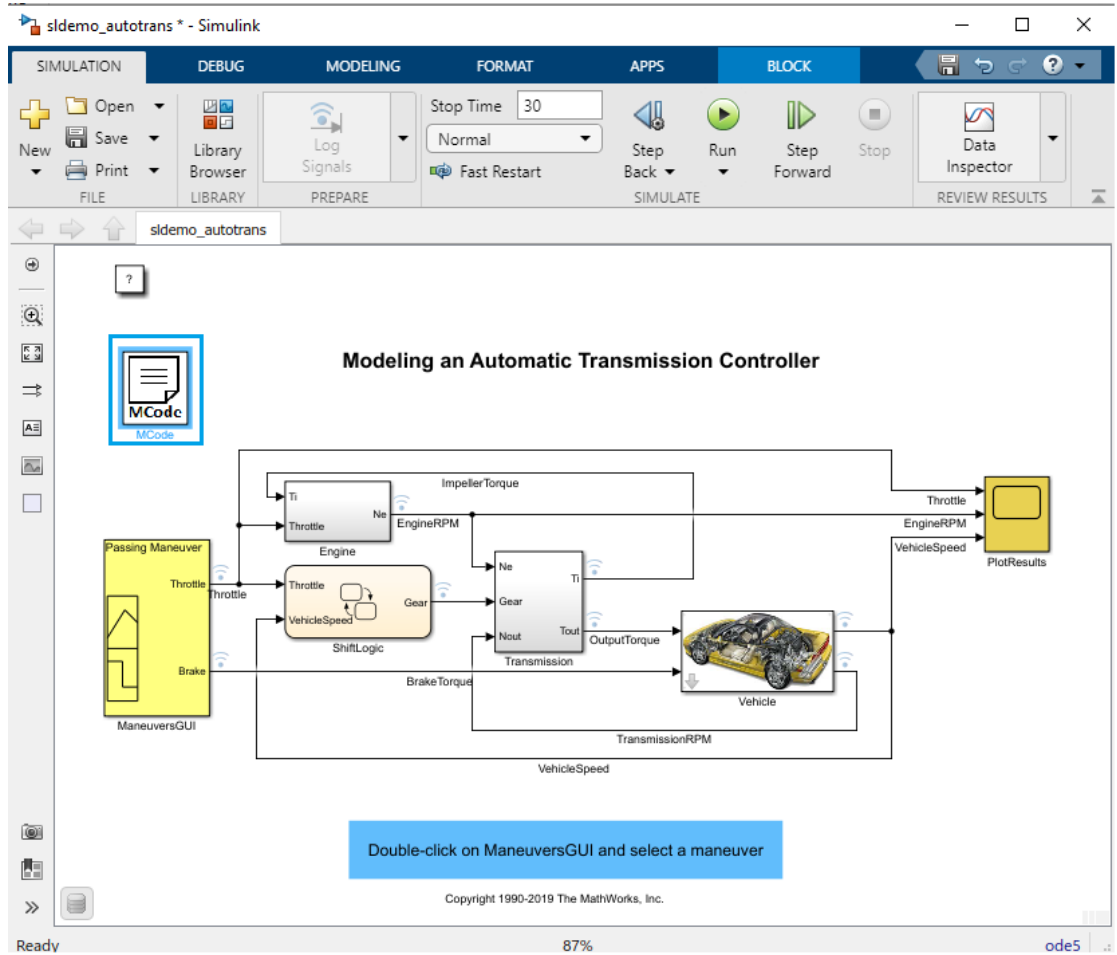


- MCode Block Editor GUI consists of the following features:

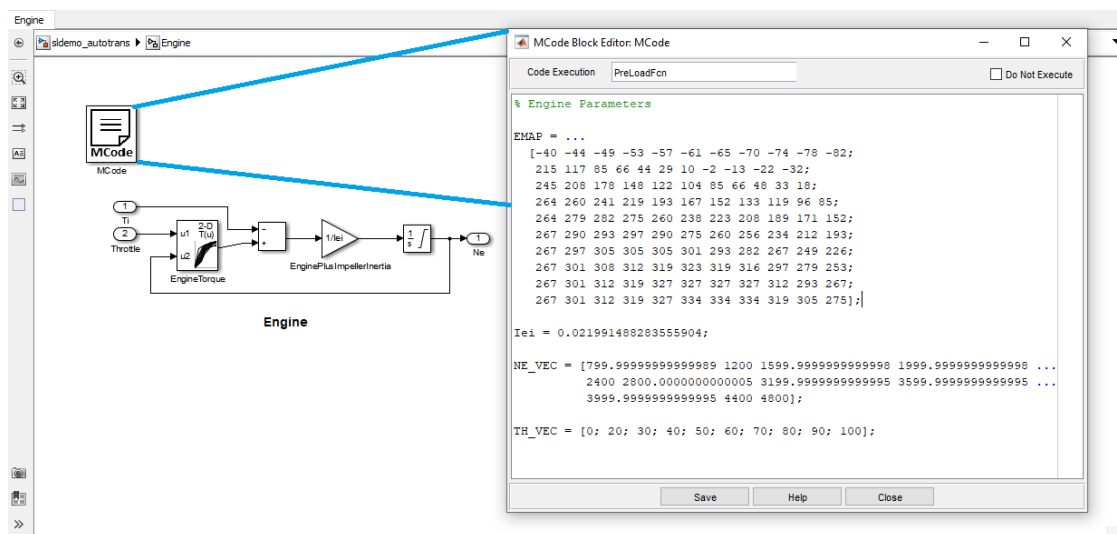
1. **Code Execution** - Provides the callback options of the Simulink model. The MATLAB code will be executed during the selected callback.
2. **DoNotExecute** - On Selecting the "Do Not Execute" checkbox, prevents the MATLAB code from executing.
3. **Editor** - Provides a MATLAB editor window to write the MATLAB scripts.
4. **Save** - On clicking the Save button, the MATLAB scripts will be saved.
5. **Help** - On clicking the Help button, the user manual document of MCode Block will be opened.
6. **Close** - On clicking the Close button, a dialog box opens with options for saving the MATLAB scripts and Closes the MCode Block Editor.

MCode Block Usage

- MCode block can be used at any levels of the Simulink model.



- Sample usage:



API Support

- API Support for MCode Block and MCode Block Editor is also provided.
 - Get the userdata of the MCode Block using the following commands:
 - `>>userData = get_param(Block Name/handle,'userData');`
 - The returned userData is a structure variable with the following fields. The user data will be a struct, having the following fields.
1. **content** - MCode block code contents.
 2. **format** - 'M_CODE'. Not used as of now. It can be used in future version.
 3. **codeExecution** - Any one model callback function.
 4. **doNotExecute** - 0 or 1. 0 - Execute as per codeExecution callback. 1 - Do not execute the codeExecution callback.
 5. **imageData** - Icon data for the MCode block.
- Now the values of each field can be viewed and edited.
 - To reflect the edited values of userData to MCode Block and MCode Block Editor, use the following command to update the editor.
 - `>>updateMCodeBlock(userData,<MCode Block Name/handle>);`

```
Command Window

>> userData = get_param('sldemo_autotrans/MCode','userData');
>> userData

userData =

    struct with fields:

        content: '% Type_your_m_code_here'
        format: 'M_CODE'
        imageData: [1x1 struct]
        codeExecution: 'PreLoadFcn'
        doNotExecute: 0

>> userData.content = '% The content has been edited';
>> updateMCodeBlock(userData,'sldemo_autotrans/MCode');
>> userData = get_param('sldemo_autotrans/MCode','userData');
>> userData

userData =

    struct with fields:

        content: '% The content has been edited'
        format: 'M_CODE'
        imageData: [1x1 struct]
        codeExecution: 'PreLoadFcn'
        doNotExecute: 0

fx >> |
```

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