

STM32F103 Assembly programming in Keil 5.28 Step-by-step tutorial

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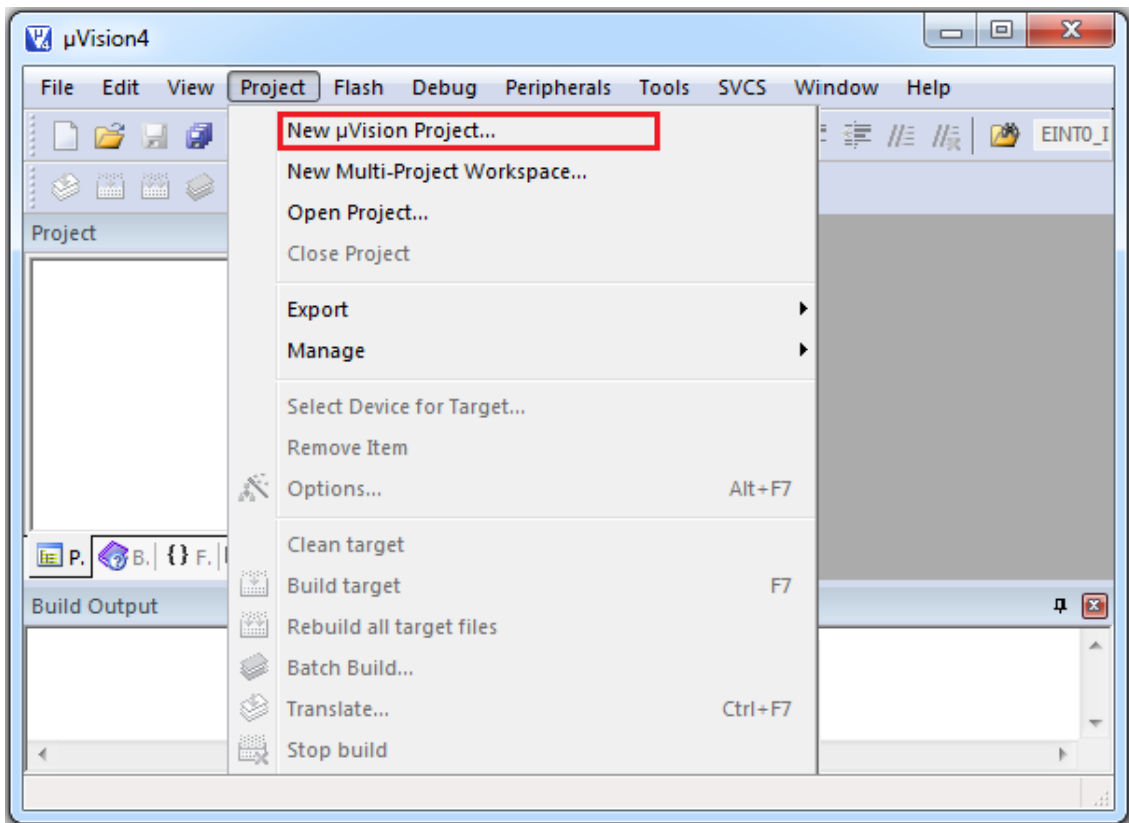
10/04/2018

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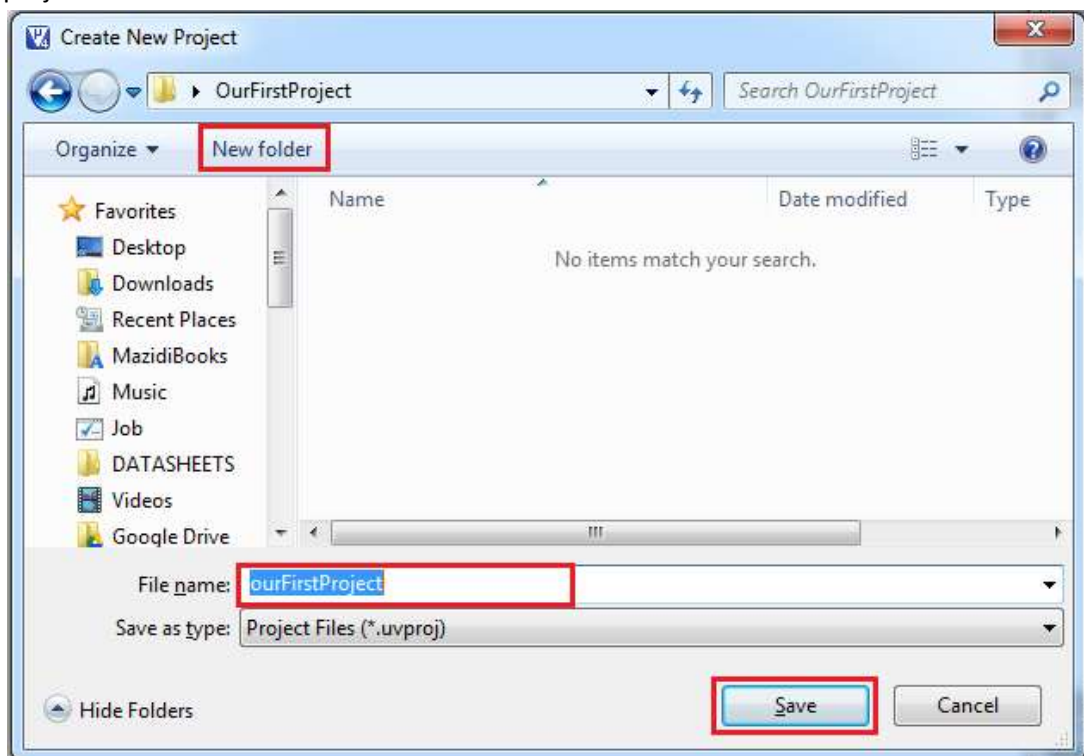
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Creating an Assembly project in Keil

1. Open the Keil IDE by clicking on its icon on the desktop.
2. Choose **New uVision Project** from the **Project** menu.



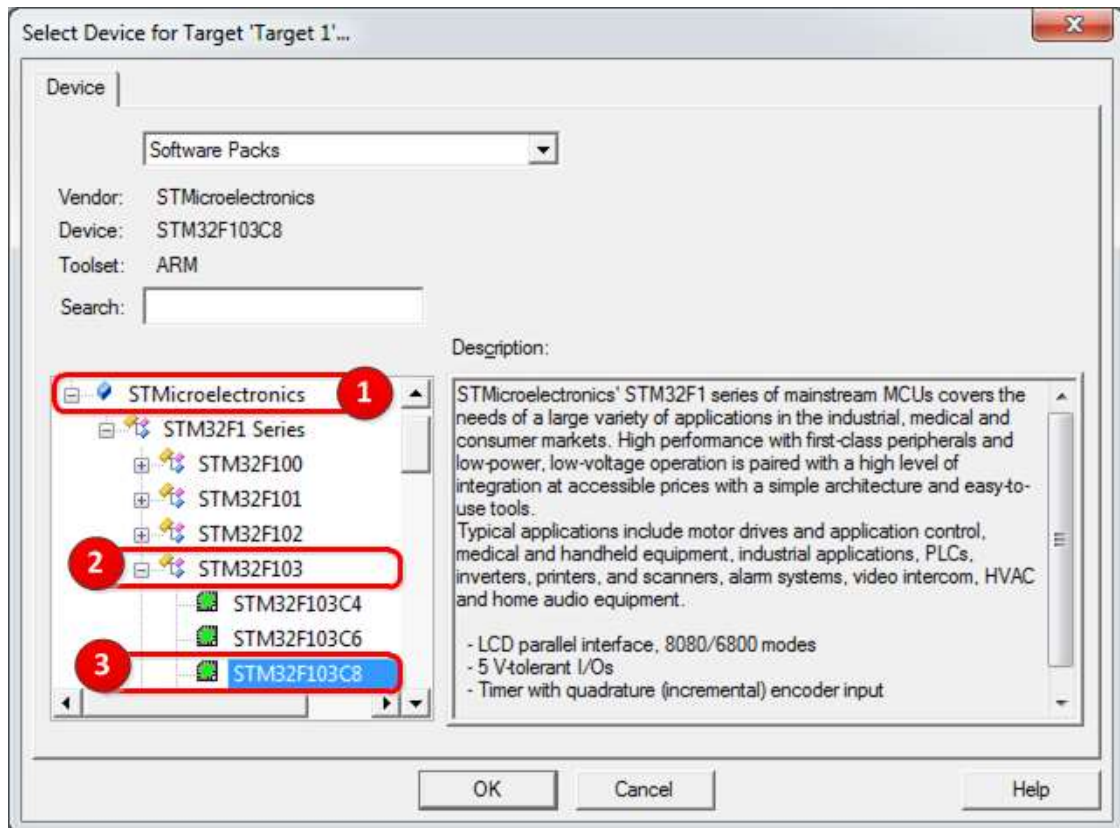
3. Create a new folder and Name it **OurFirstProject**. Type the name **ourFirstProject** for the project name and click **Save**.



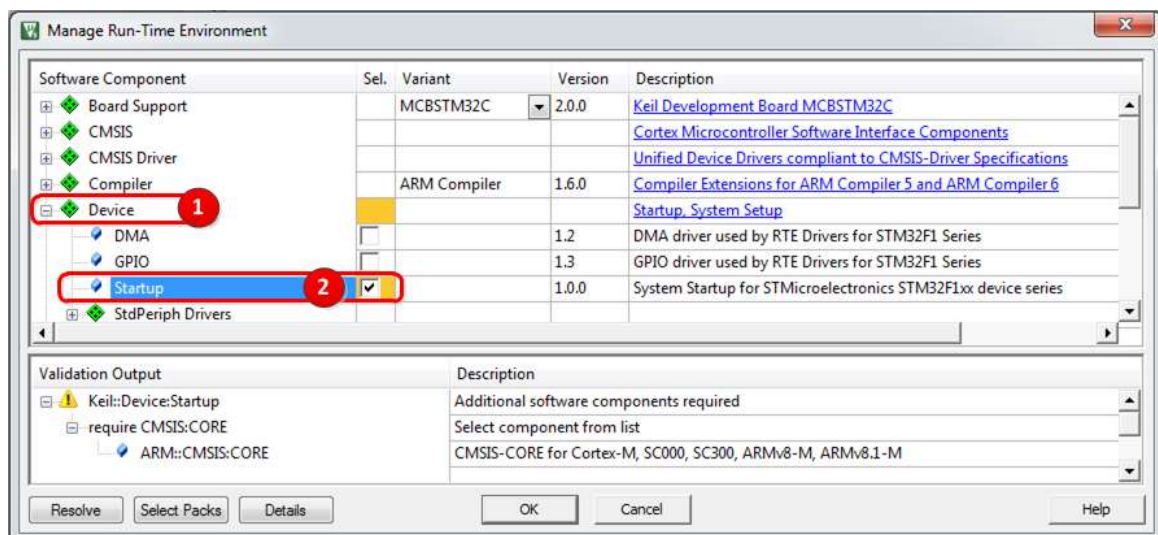
- In the tree expand **STMicroelectronics**. (If STMicroelectronics is not in the tree, read “installing Keil and STM32F103” step-by-step tutorial from our website.) Click on **STM32F103** and choose **STM32F103C8**. Then press **OK**.

Note

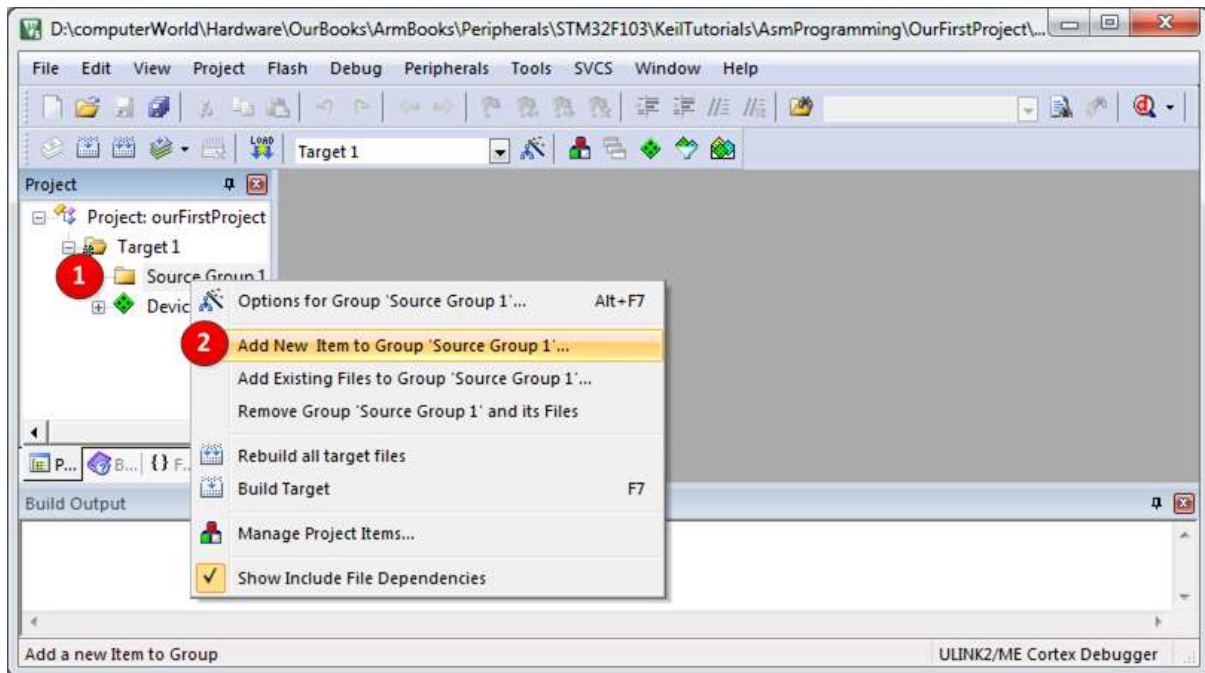
When you choose a chip some general information of the chip is shown in the **Description** box.



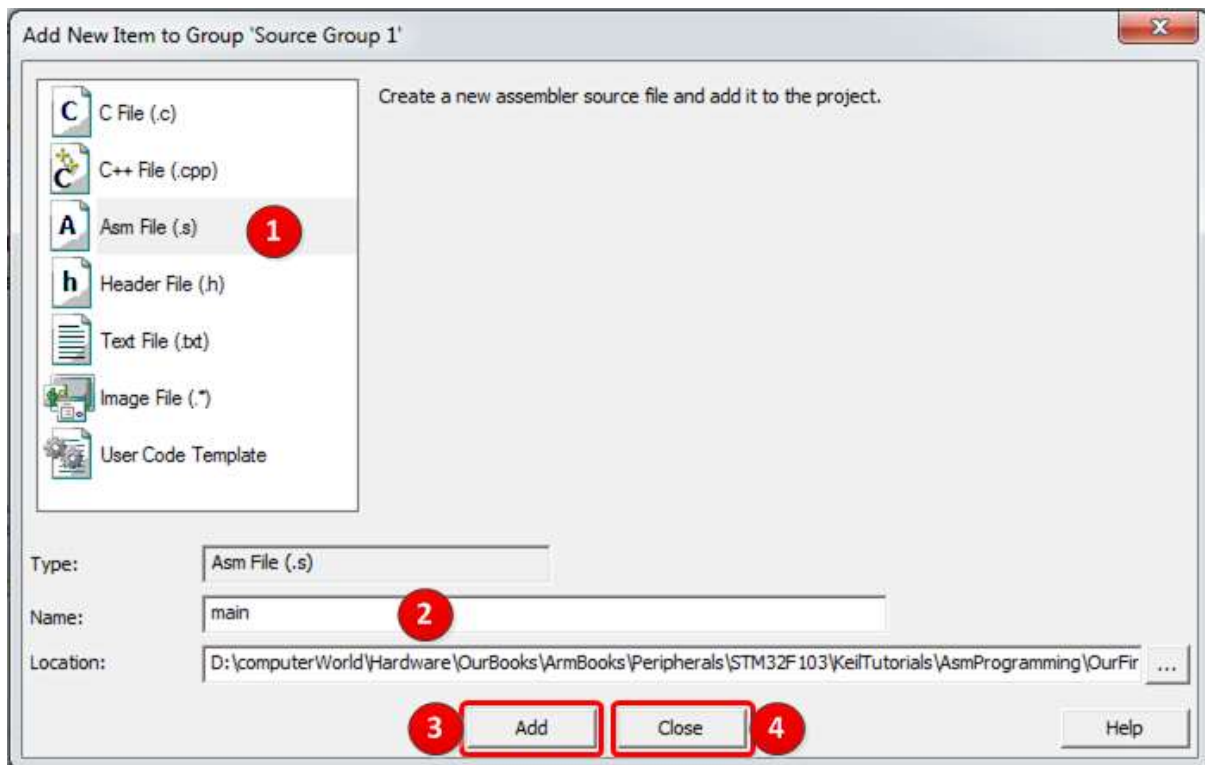
- From the software component tree click on **Device** and add the **Startup** file by clicking the checkbox next to **Startup**. Then, click on the **OK** button.



- Right click on **Source Group 1** and choose Add New Item to Group. This makes a new file and adds it to the project.



- Choose the type of file as **Asm File(.s)** and name it as **main**. Click on the **Add** button and then click on **Close**.



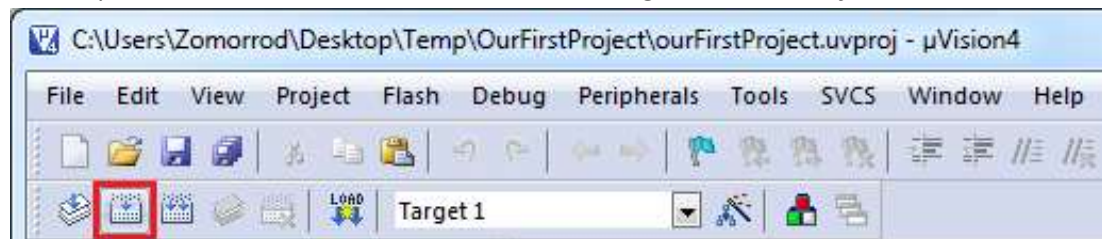
8. Type the following sample program in the *main.s* file.

```
EXPORT __main
AREA  PROG_2_4, CODE, READONLY
__main
MOV   R1, #0x25    ; R1 = 0x25
MOV   R2, #0x34    ; R2 = 0x34
ADD   R3, R2, R1   ; R3 = R2 + R1
HERE  B   HERE     ; stay here forever
END
```

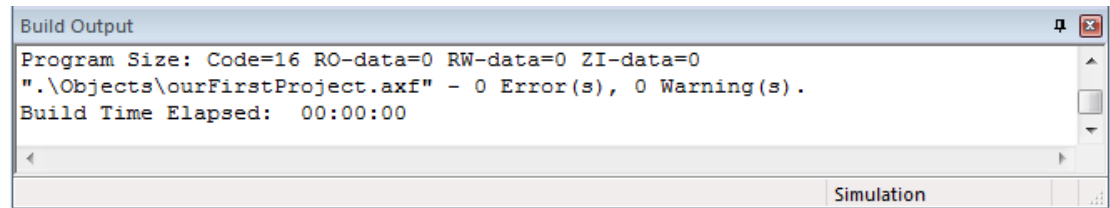
9. Press **Ctrl+S** to save the file.

Building

10. To compile click on the **Build** icon or choose **build target** from the **Project** menu.



11. If the program is built successfully the following message appears:



12. Using My Computer, open the **Listings** directory of your project. The directory contains some *lst* files and a map file. Open the *main.lst* file and take a look at it. See the map file, as well.