Software User Guide

By Robosoft Systems

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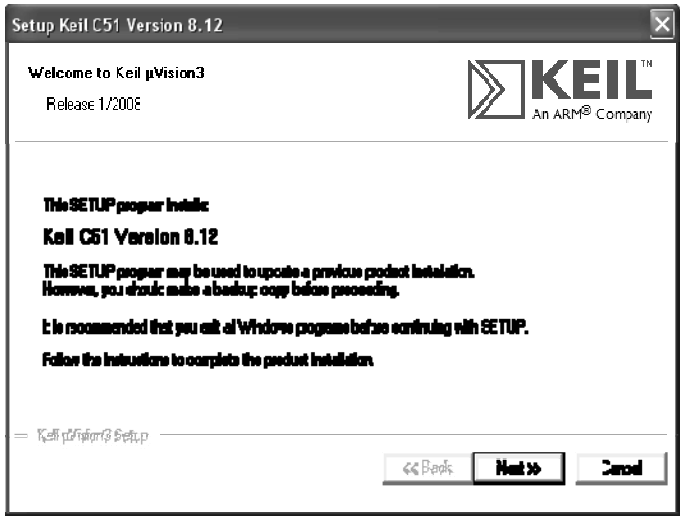
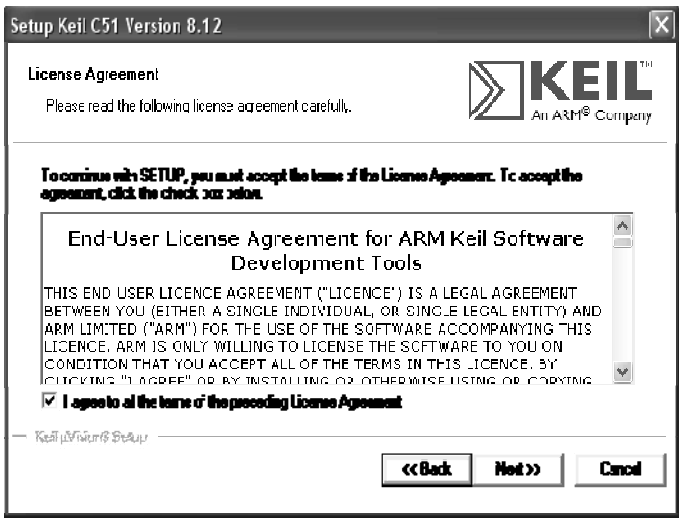
Installing the softwares

Installing KEIL™

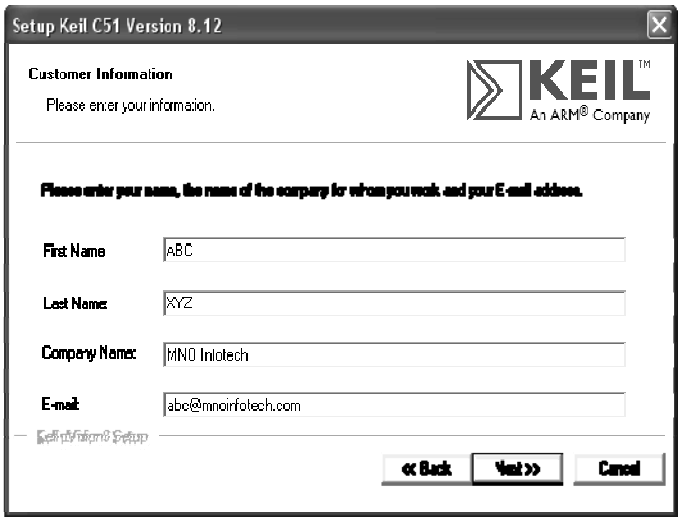
Below we have graphically listed the steps required to install KEIL™ onto your computer. Change the parameters as necessary. You will have to run the file "c51v812.exe" in the folder "\Keil-uVision-v8.12-C51" which you will find in the "Software" folder in your disc.



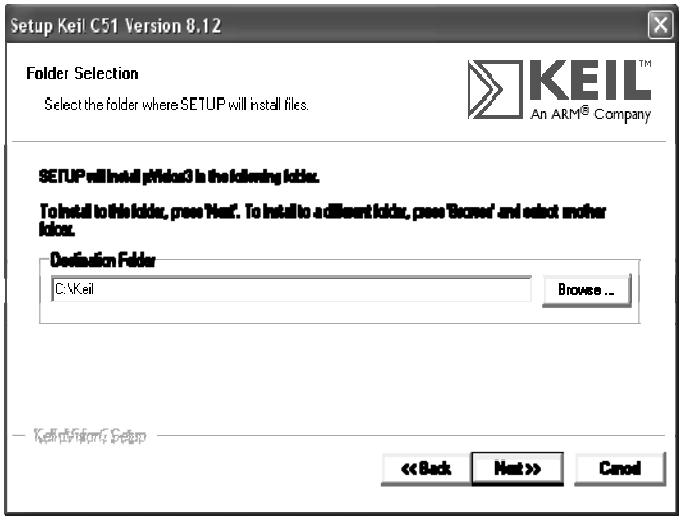
Step 1



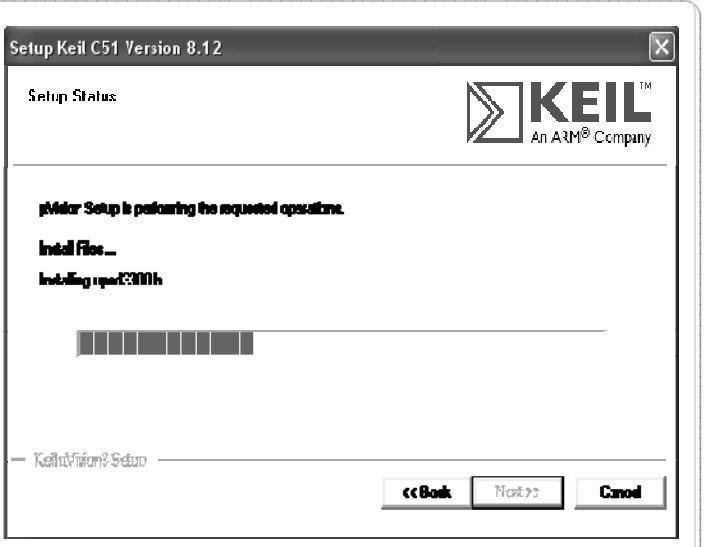
Step 2



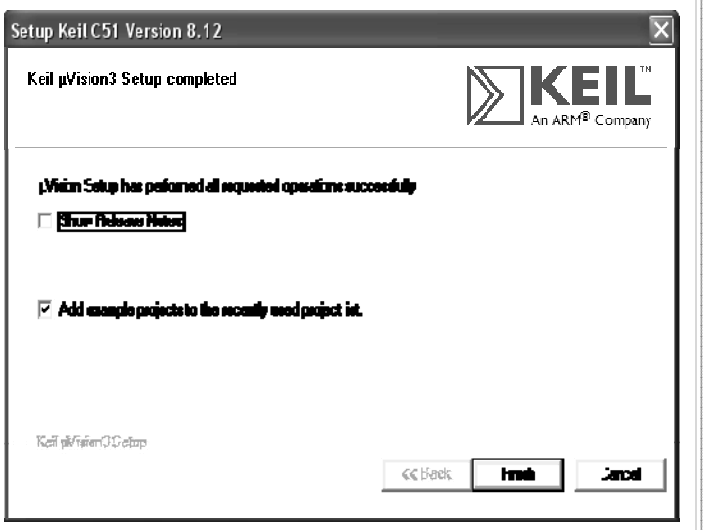
Step 3



Step 4



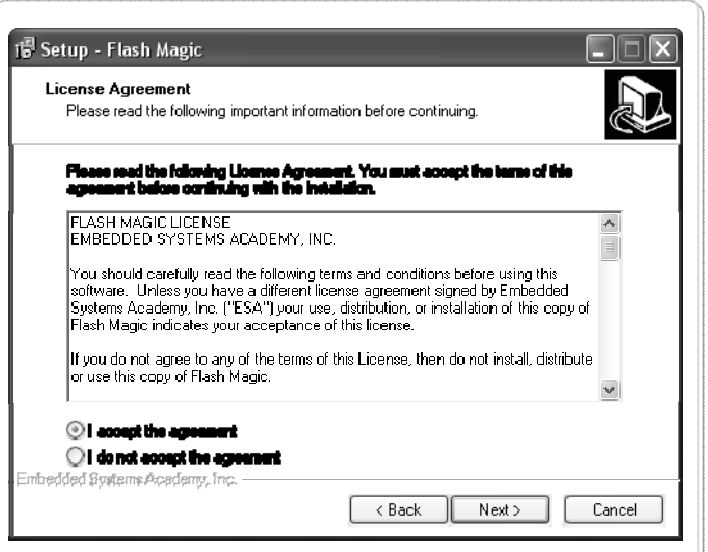
Step 5



Step 6

Installing Flash Magic

Step 1



Step 2

The figures that we have provided here are only for demonstrational purposes. You will have to fill in the exact parameters in the boxes as per your requirement. For details on how to use the softwares, please refer to the documentation provided in the accompanied disc.

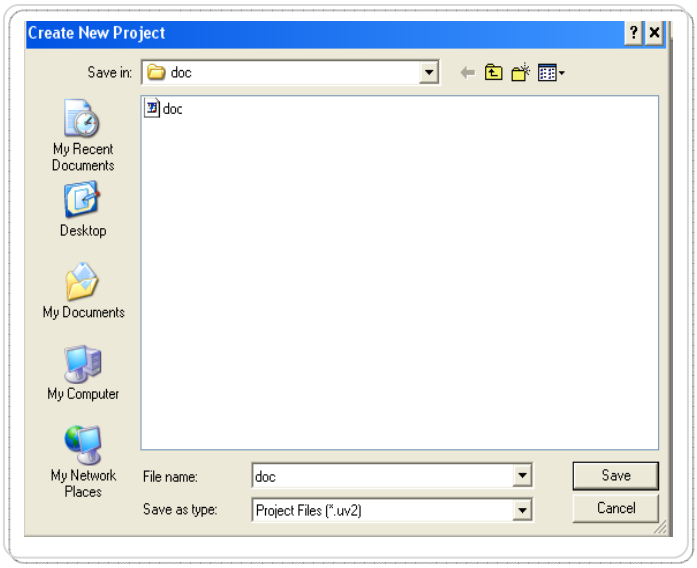
How to use the software

KEIL™

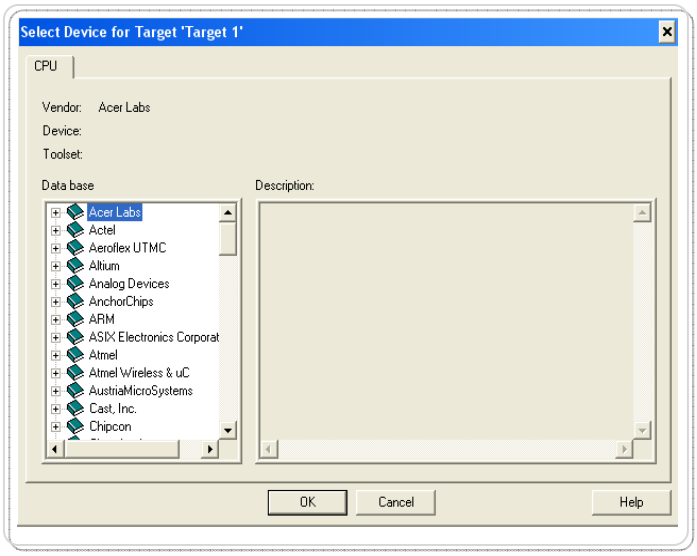
Keil is one of the most widely used compilers for Embedded C . We provide you with Keil µVision3. These are some basic steps to use the software:

Make a New Project

Making a project is the first step in developing code for any application. Go to the 'Project' menu and select 'New Project' tab. You will see the following on your screen :



Step 1

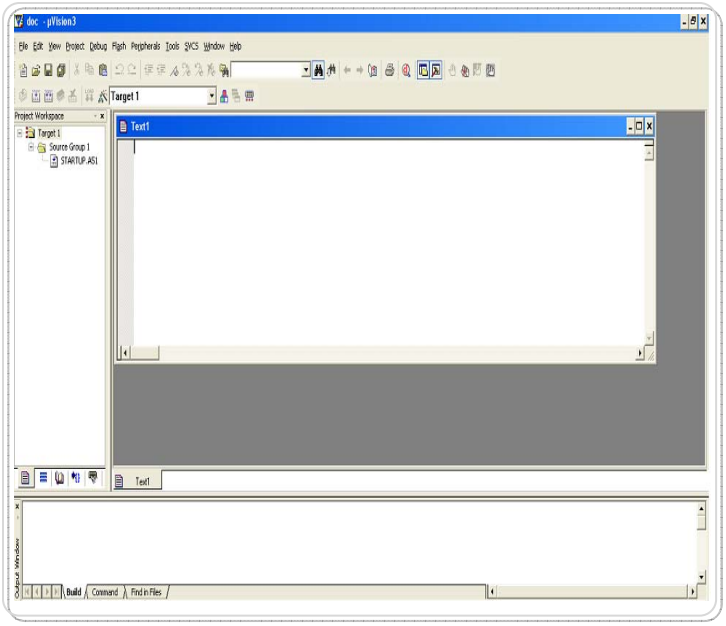


Step 2

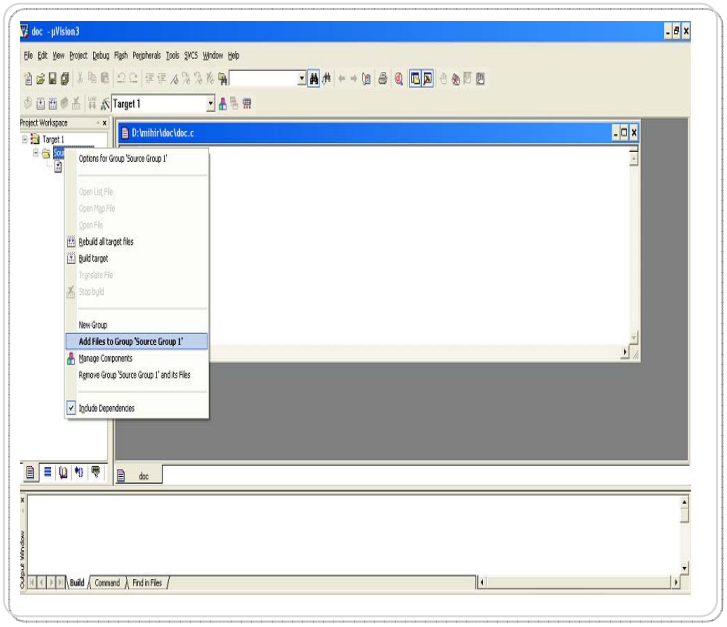
- Step1 : Create a new folder for each project. This is not mandatory but advised. Create a project file in the folder
- Step 2: You will be prompted to select the target device. Select the device you are using. We provide you with P89V51RD2. This device would be under NXP (Founded by Philips option)

After this you would be asked if you want to copy the start up code and add file to the project. Select 'YES'

Make a New File



Step 1



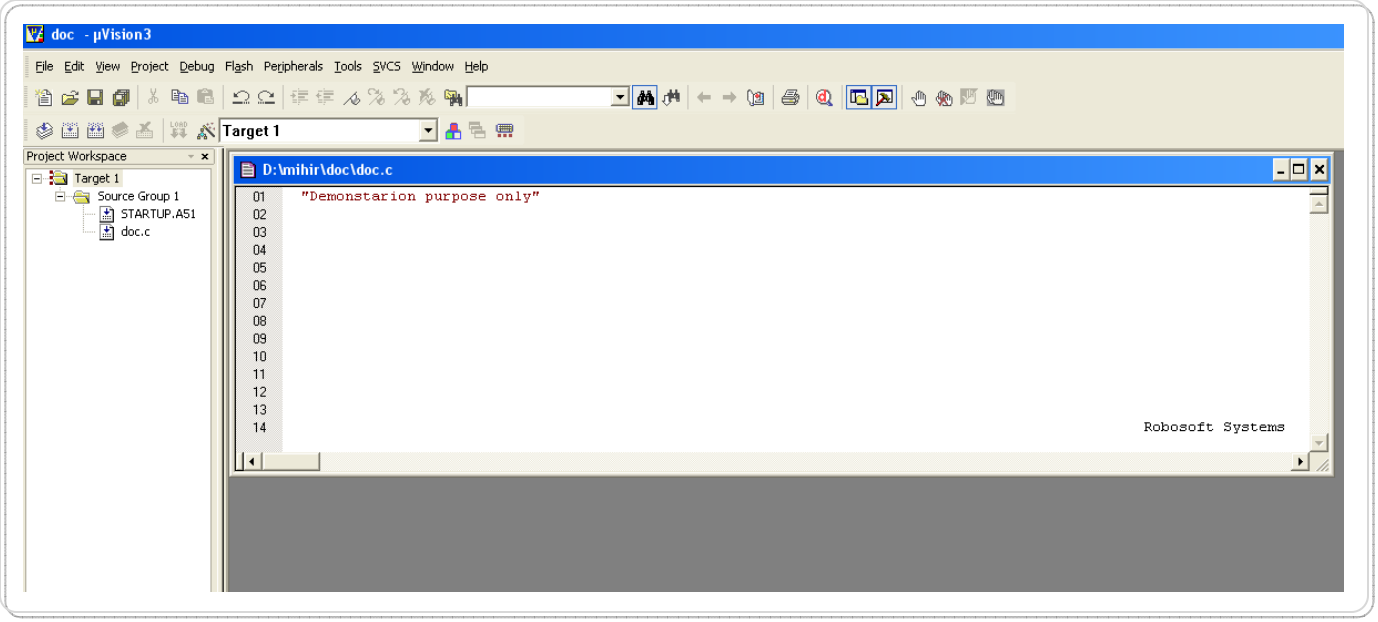
Step 2

Once you have made a project, you need to make a new file.

- Step 1 : Choose 'New File ' option in the 'File ' menu. A screen like above will be displayed. You have to write your code here. Once you finish writing your code, you have to save the file in the same folder where the project is saved. It is a good practice to save the file as soon as you have created it
- Step 2 :After you save your file, it needs to be added to your project. In the Project Workspace, right click on 'Source Group 1' and select the option as shown above.

Note: 1.If the project window does not appear on your screen, enable to view it from the 'View' menu tab
2. In the pictures above we have saved a sample file called 'doc.c' and added it to the project

Once you have added the file , the Project Workspace will look as follows:



In this way you can add as many files as required. The entire code for an application can be written in one or many C files and then included together in the project. This depends on your programming style.

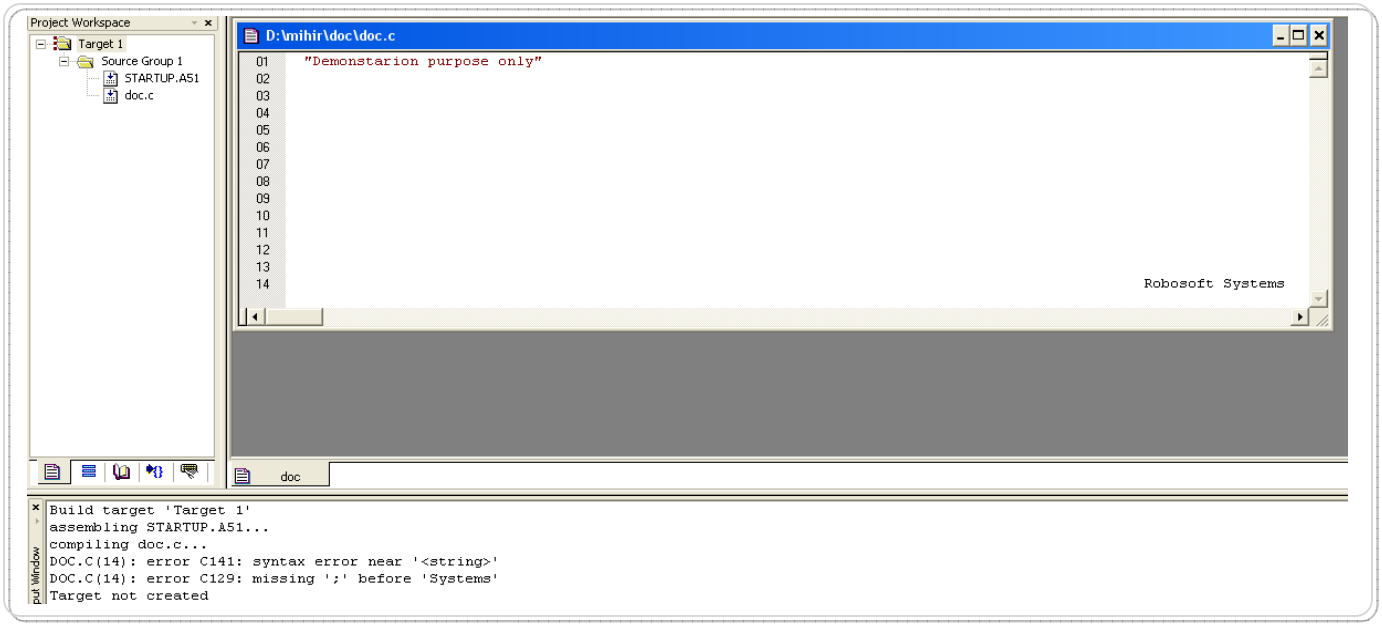
Compiling your project

Once you add all the required files to your project, you need to compile your project . Kiel checks for syntax errors in this step .

- Step 1: Choose the 'Build Target ' option from Debug menu .
- Step 2: As you can see, you would be notified of all the syntax errors in the code. You would also be given a list of warnings .

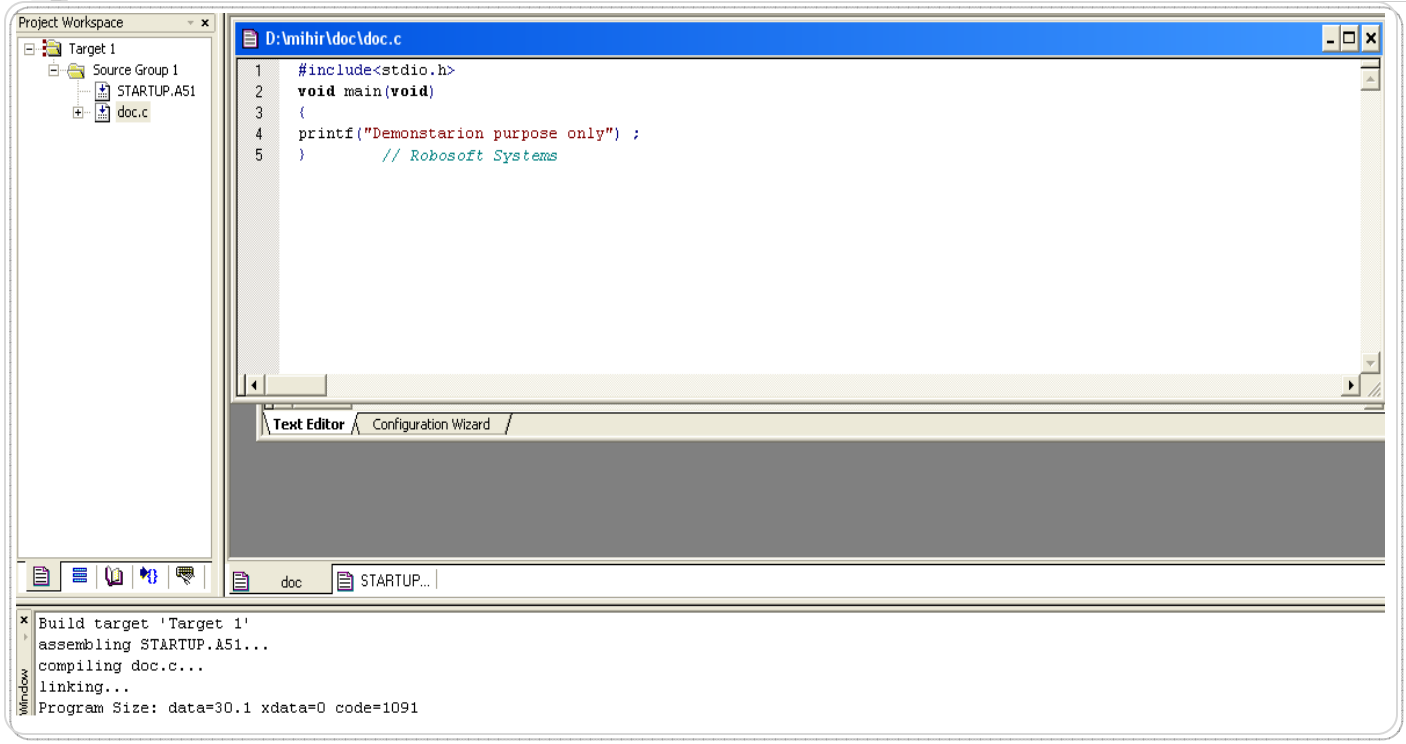
It is mandatory to remove all the errors for your project to compile.

Note: Pictures on next page



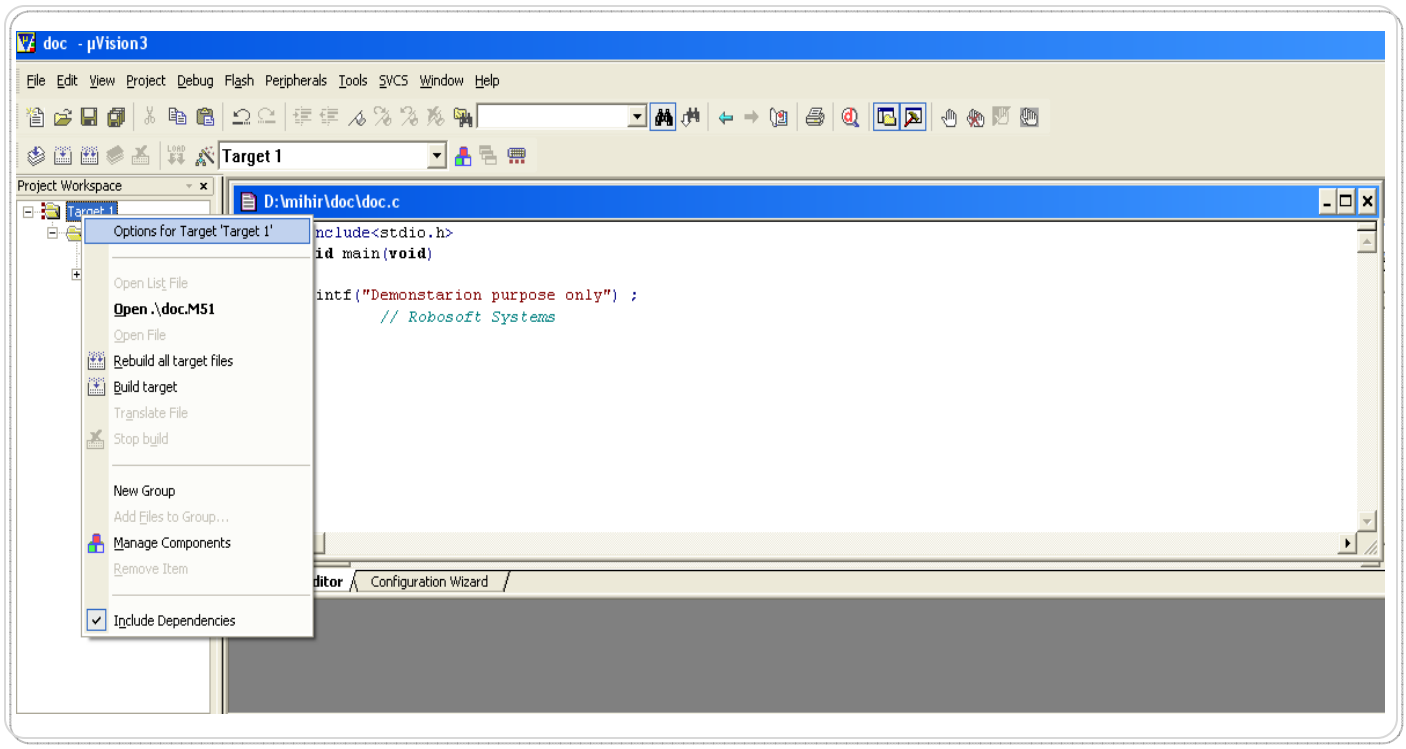
You need to remove all the errors for your project to compile correctly.

Following is a way to display "documentation purposes only". Anything other than code should be commented



Making a HEX File

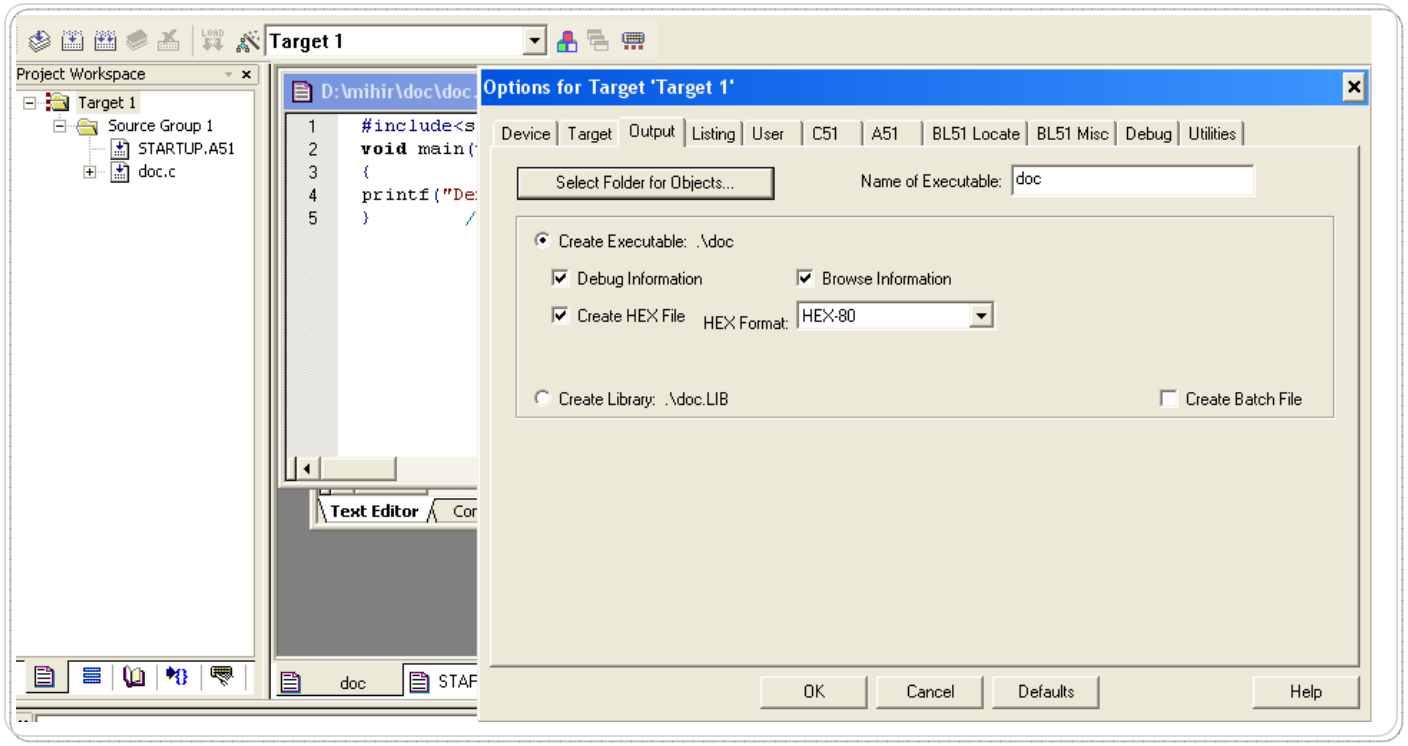
When you compile your file, a HEX file gets created in your project folder. If it does not , follow these steps:



Step 1

- Step1: Right click on Target 1 in the Project Workspace and select 'Options for Target '
- Step2: Select the 'Output' tab
- Step3: The 'Create Hex File' box should be checked

Save your settings and compile the project again.



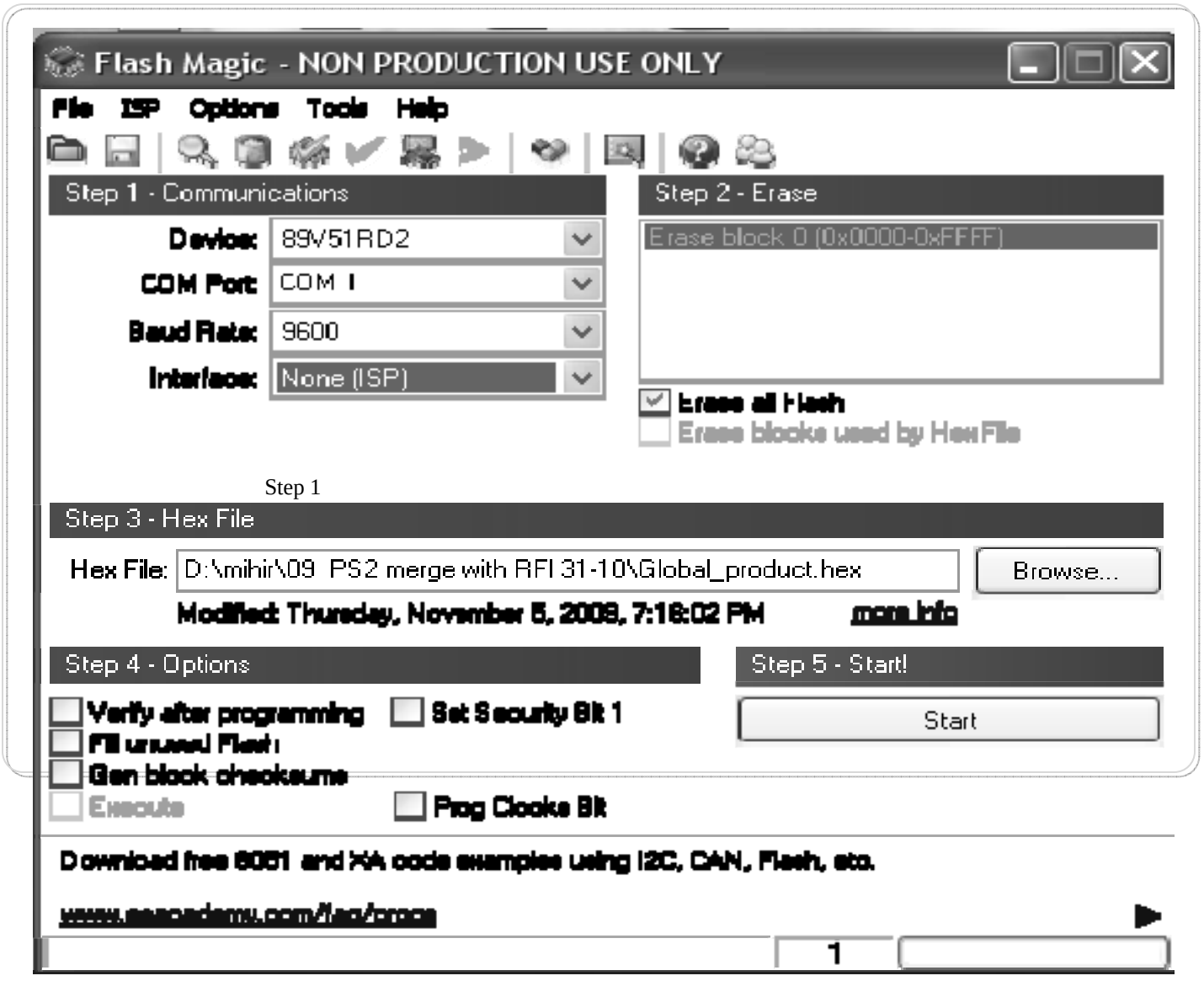
Steps 2 & 3

Your Hex file would be made in the project folder.

Download the file on your target microcontroller !!

Flash Magic

Flash Magic is used to download the program in your microcontroller , provided it is In System Programmable. P89V51RD2 supports the ISP feature



Step 1

Flash Magic is used to download the program in your microcontroller , provided it is In System Programmable. P89V51RD2 supports the ISP feature .

Follow these steps:

You can see four steps in the diagram on the previous page. Details of the sections are explained here:

Step 1. Communications

1. Device: Select your target device. We have provided you with P89V51RD2
2. Com port: Select the COM port you are using to connect to your computer
3. Baud rate: Select 9600 as baud rate
4. Interface: Choose the ISP option

Step 2. Erase
You can choose to erase your device if required . It is not mandatory but it is advisable. If you do not erase your flash, your code will overwrite the previous code.

Step 3. Hex File
Browse your computer and select the Hex file stired in your project folder

Step 4. Options
Here you can choose the options required by you. If you program the clock bit, the speed of execution will double. However, after doing this it can be reprogrammed only through parallel programmer.

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