



## Getting Started with Atmel Studio 7

This document contains instructions to help you get started with **Atmel Studio 7** software.

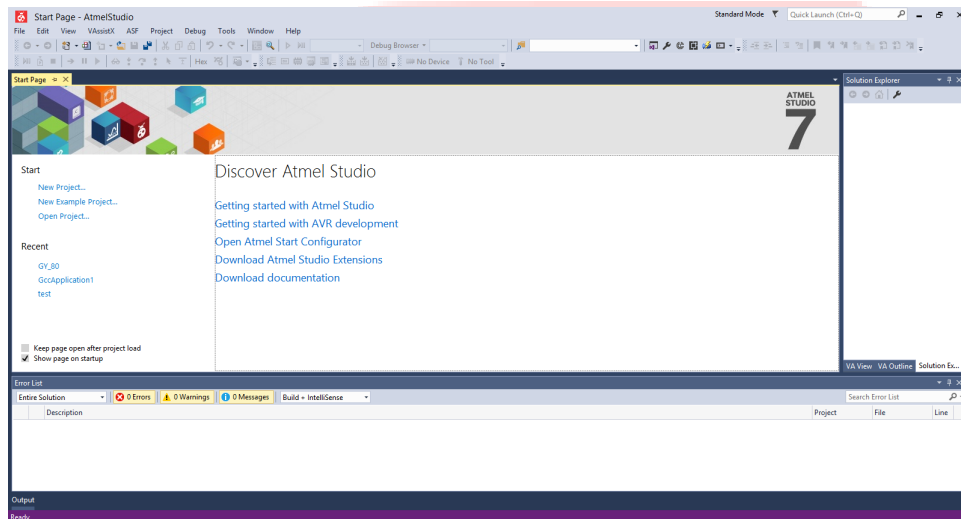
**Atmel Studio** provides a project management tool, source file editor, simulator, assembler, and front-end for C/C++, programming, and on-chip debugging. It carries and integrates the GCC toolchain for both AVR and ARM, Atmel Software Framework, AVR Assembler and Simulator.

This document is divided into **three** sections:

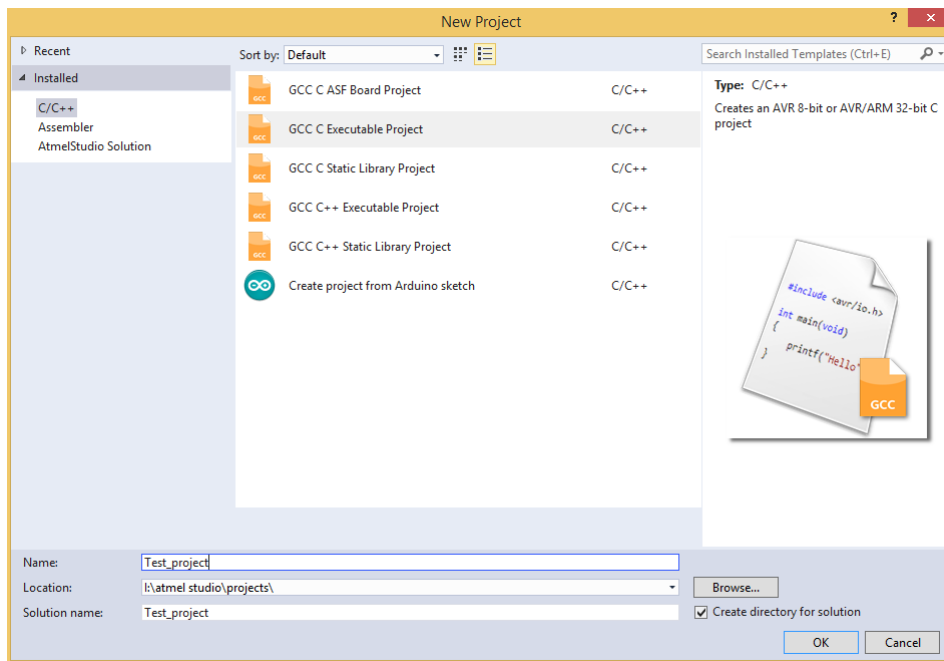
### 1. Create New Project in Atmel Studio 7

Follow the steps given below:

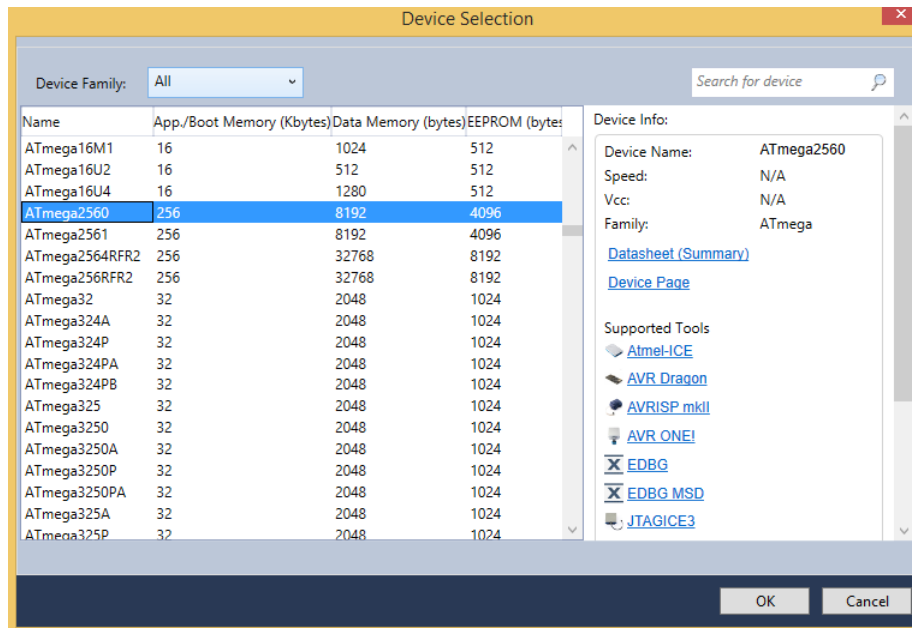
- Launch Atmel Studio 7. You will get a window as shown below.



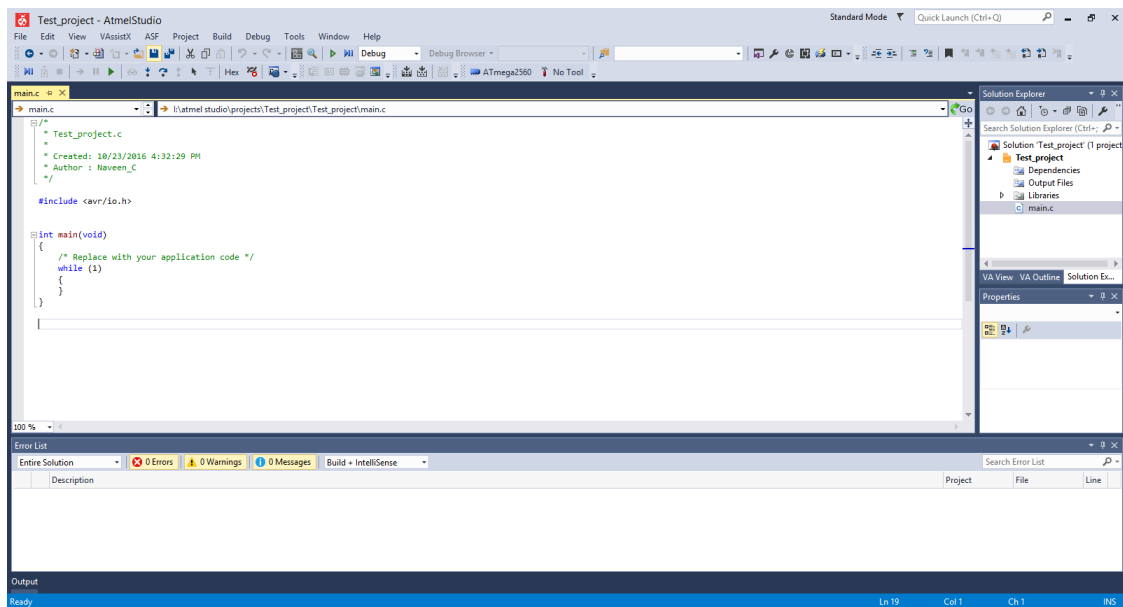
- Click on the **New Project** hyperlink to the left to create a new project. You will see a window as shown below.
- Select **GCC C Executable Project** and provide the **Name** and **Location** of the new project to be created. Click **OK**. Let's say the name of the project is: **Test\_project**.



- Select micro-controller from the **Device Selection** list as shown below depending on the micro-controller for which the project is being created. Let's say we choose **ATmega2560**. Click **OK**.



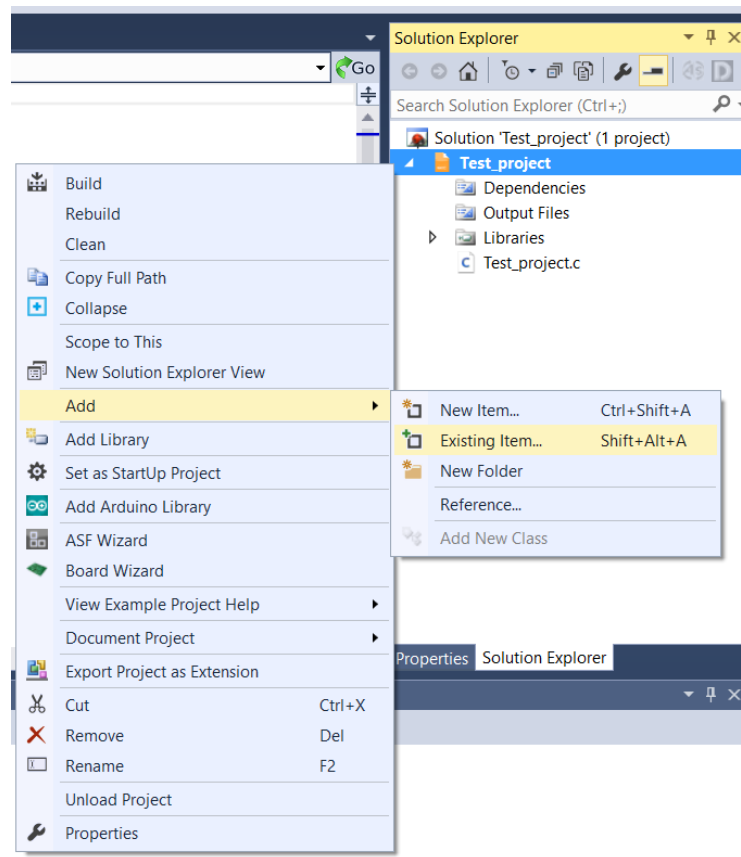
- Your project is created and you will see that a **main.c** is auto-generated as shown below.



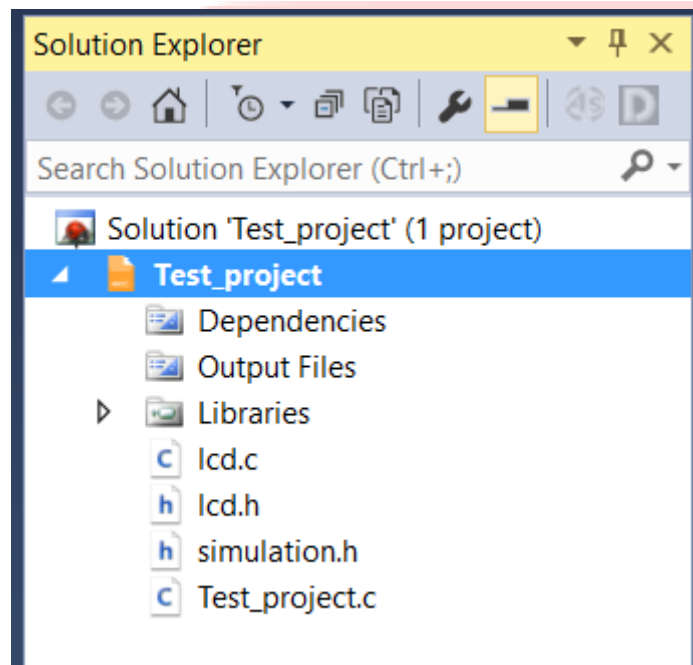
## 2. Add necessary files for the Project

Follow the steps given below:

- Once a project is created, rename the auto-generated **main.c** file to **Test\_project.c** from inside the **Solution Explorer**. To open or activate the **Solution Explorer**, press **Ctrl + Alt + L**.
  - Now, let's say this project requires some additional header files let's say **lcd.c**, **lcd.h** and **simulation.h**. We need to add these files inside the project.
  - Press **Ctrl + Alt + L** to open or activate the **Solution Explorer** window.
  - Select the project name: **Test\_project** ( with **green file icon** on its left ) in this window.
    - Press **Shift + Alt + A** to open the dialog box for adding any existing items into this project
- [ OR ]**
- Right-click on the project name > **Add** > **Existing Item..**



- Browse for the folder location where three library files are present, select these files and click **Add**.
- You can now see that three library files: **simulation.h**, **lcd.h** and **lcd.c** are added to the project inside the **Solution Explorer**.

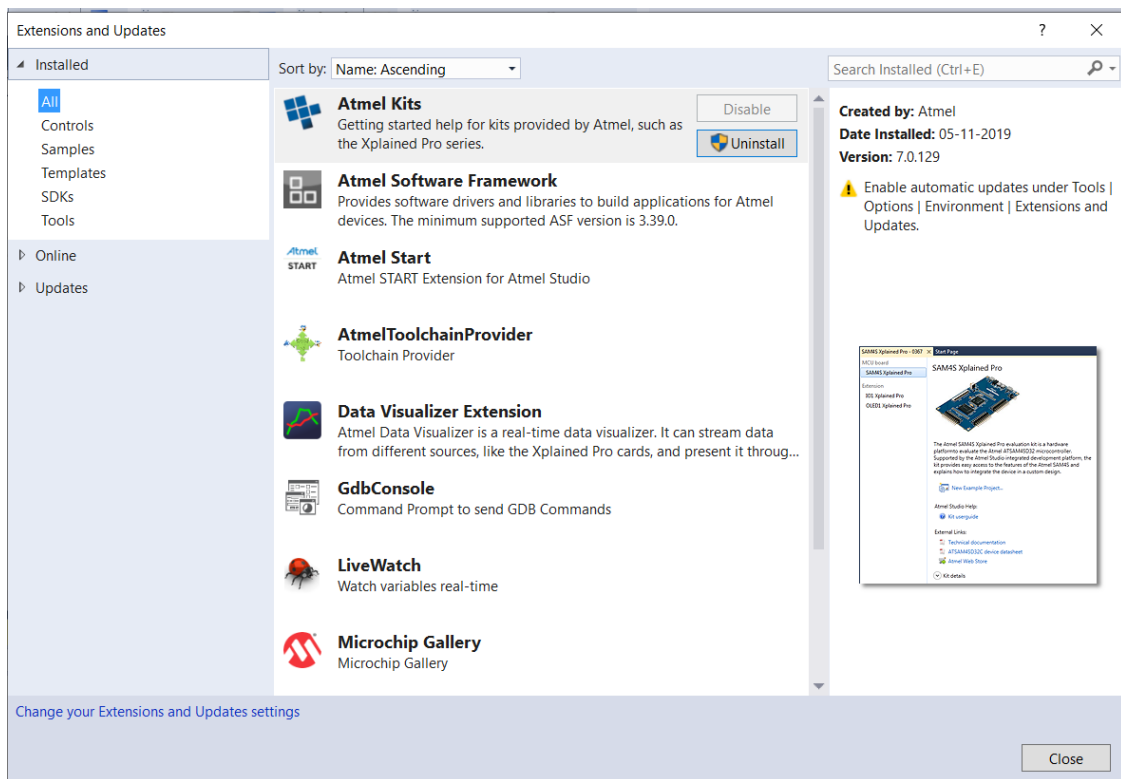


### 3. Generate Documentation of the Code in Project

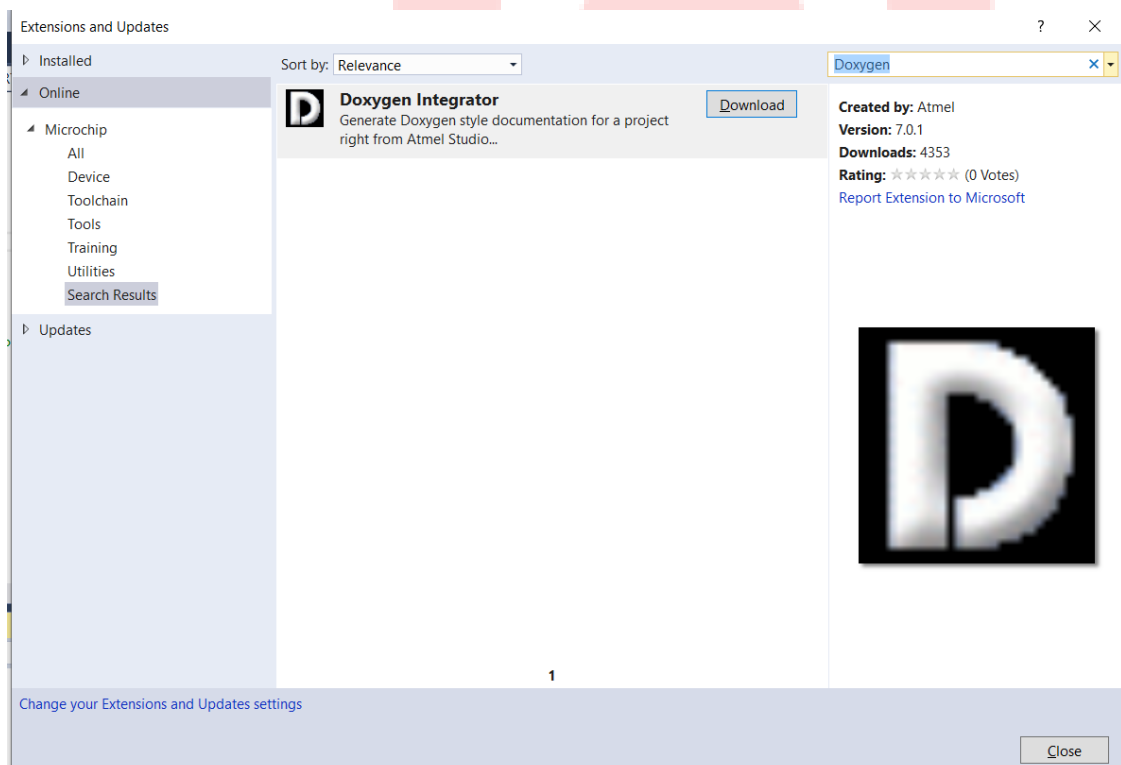
Follow the steps given below:

- Documentation of the Code is very important factor when you have to share your code with someone else. It improves the code readability, its presentation and easy to understand.

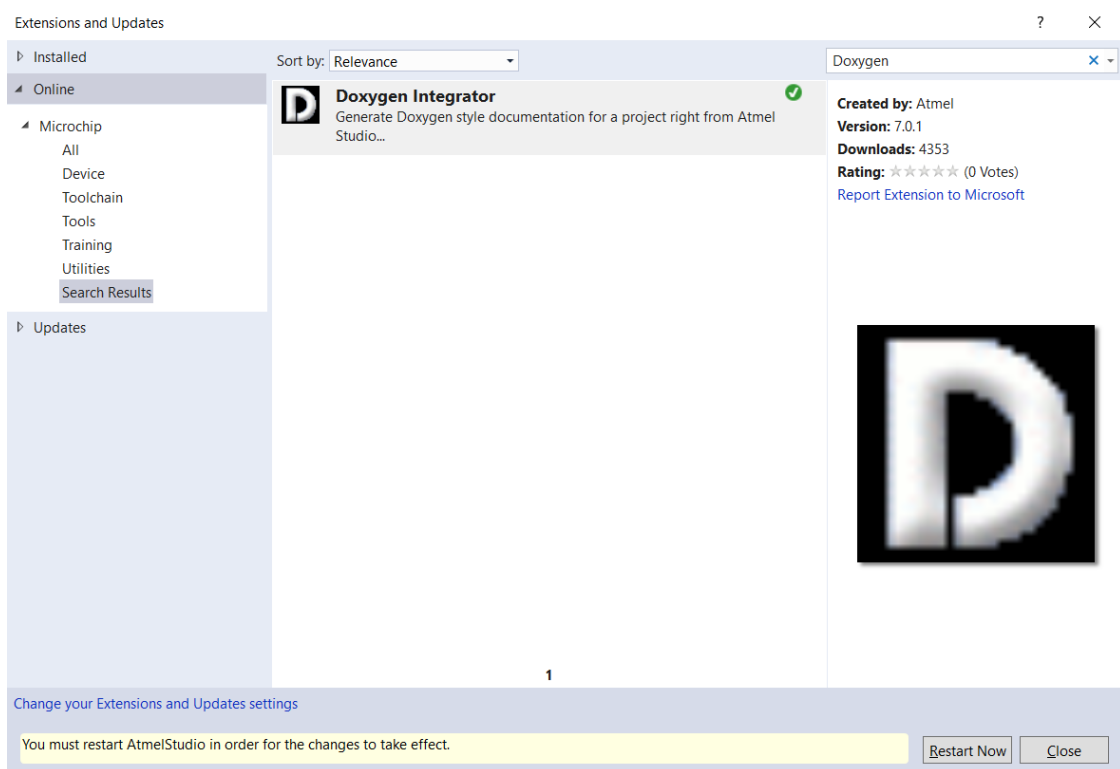
- Here, we will see how to generate the documentation for the program written in **HTML** format using **Doxygen**.
- Make sure you have gone through the document: **Doxygen\_Installation\_and\_Usage.pdf** and have installed the **Doxygen** software.
- Now, in Atmel Studio project, go to **Tools > Extensions and Updates..**, you will see this dialog box.



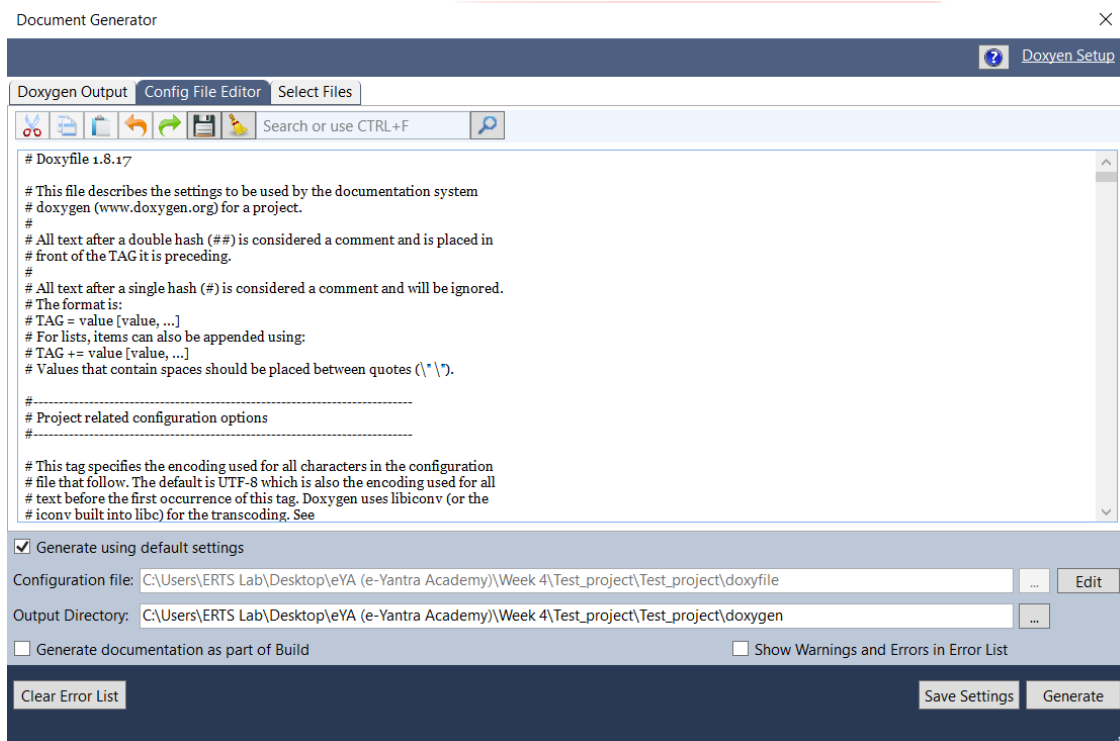
- By default, it will list the Extensions already installed with the software. Select **Online** from the left pane, then type: **Doxygen** in the **Search Box** at the top-right corner. You will see one extension named, **Doxygen Integrator**. Click **Download**. Select **Install** when a dialog box appears for the confirmation. This will download the extension.



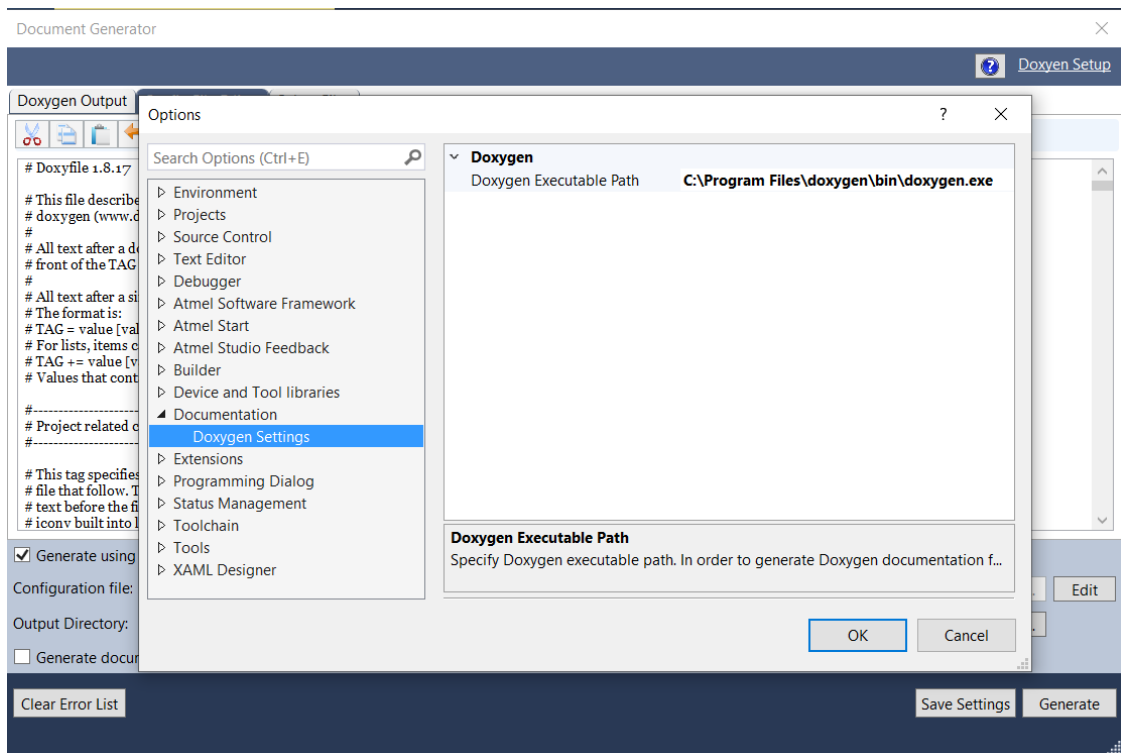
- Once the extension is downloaded, it will ask for restarting the Atmel Studio 7 software. Click **Restart Now** button to the bottom right corner.



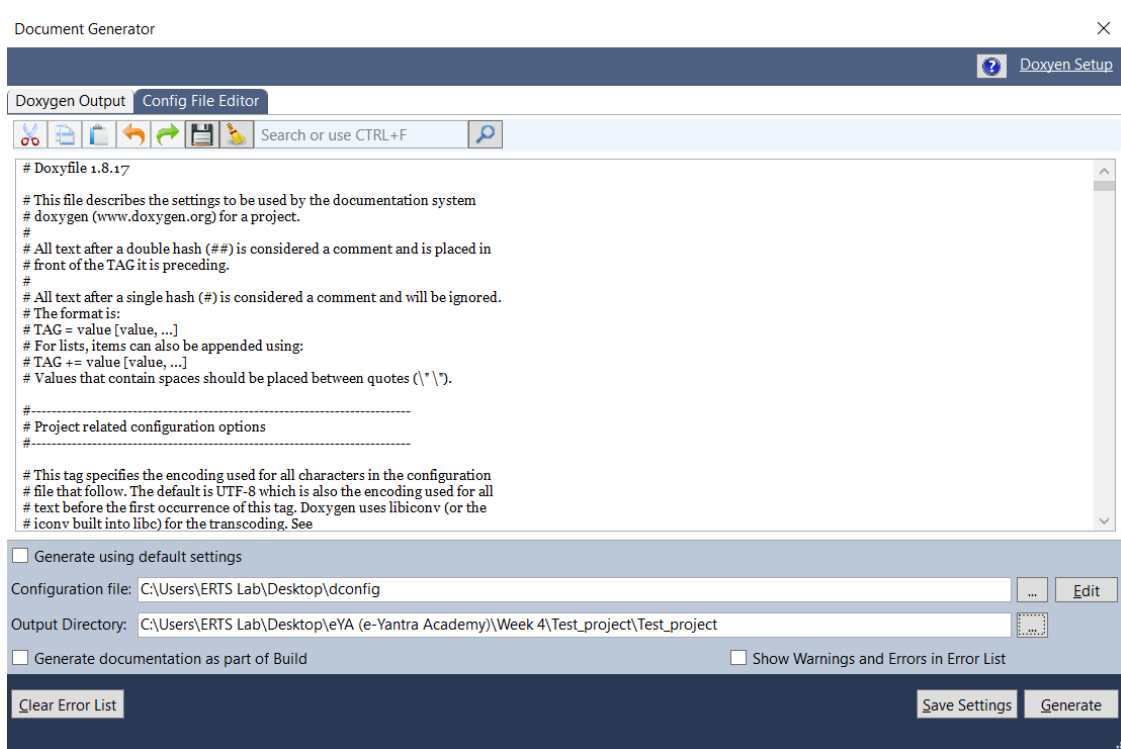
- Once the software is restarted, it will open with the previously opened project, **Test\_project** in this case. Once the program is completed with appropriate comments for all the **.c** and **.h** files present in the project, go to **Project > Doxygen...**, this will open a dialog box as shown below:



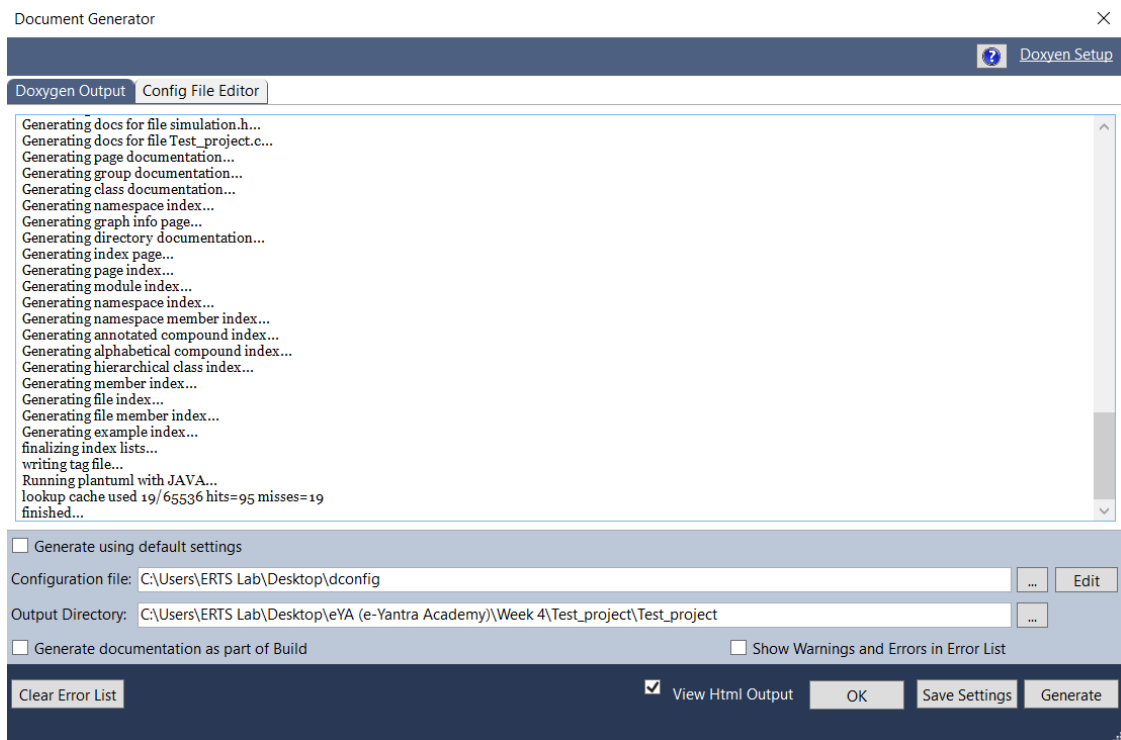
- In this dialog box, click on the **Doxygen Setup** hyperlink at the top-right corner. It will open a dialog box like the one below. Here we have to provide the path where the **Doxygen** is installed. Browse to the directory where it is installed. Through this setting, Atmel Studio 7 software will invoke the Doxygen executable program at the time of generating the documentation of source code. By default, the executable path of Doxygen will be as shown below. Click **OK** to close this dialog box. Henceforth, this path will be saved for each Atmel Studio project being created.



- Untick the checkbox: **Generate using default settings**.
- Under the **Configuration file** option, browse for the directory where **dconfig** file is present (provided in **Week4\_Resources** under the **MOOC\_resources** drive folder).
- Under the **Output Directory** option, select the same project folder directory. You will see the following settings as shown below:



- Click on **Save settings** and then click on **Generate** button. You will see the following logs once the document is generated under the **Doxygen Output** tab.



- Untick the checkbox: **View Html Output**. Click **OK** to close the dialog box.
- You will find a folder **html** generated inside the **Source Code** directory which consists of the documentation in **HTML** format. You can open the **index.html** file to view the documentation.

