MECHENG 709: Industrial Automation

Tutorial 1: Introduction to Multimedia Imaging with Visual Studio 2010 and OpenCV 2.3.1

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Before we start…

Pre-requisites and Settings:
- "Visual Studio 2010"
- "OpenCV 2.3.1" (Please use version 2.3.1 to do your assignment)
- Default Installation:
  "C:\Program Files\Microsoft Visual Studio 10.0";
  "C:\OpenCV2.3.1\";

Step 1. Setting up System Path Environment Variables

Check to make sure if OpenCV binary folder is in your system path or not by:

1. Go to **Start**->**Computer**, then right click on My Computer and select **Properties**.
2. Find and click on **Advanced system settings** on the left hand side.
3. Click on **Environment Variables…**
4. In the Environment Variables Window, find the **Path** variable and double click on it. You can simply add or modify the **Path** variable with the relative path of OpenCV on your computer. If you need to use multiple directories, separate them by semicolons as shown below.

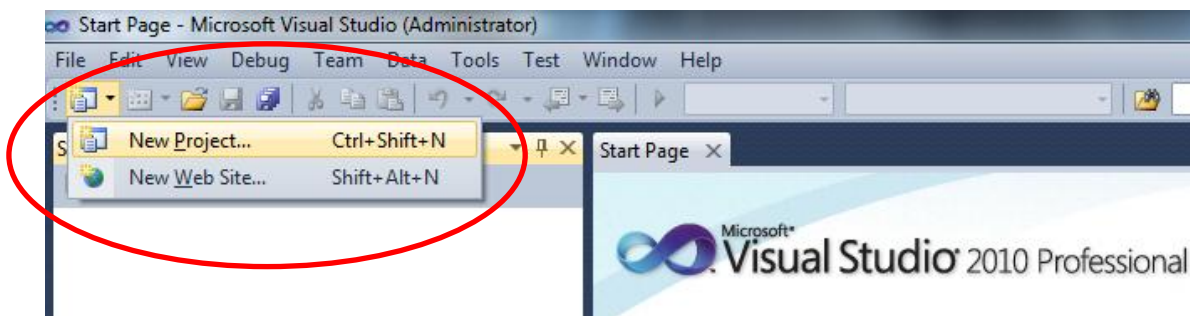C:\OpenCV2.3.1\build\x86\vc10\bin\ ; C:\Program File\Another example..\..;
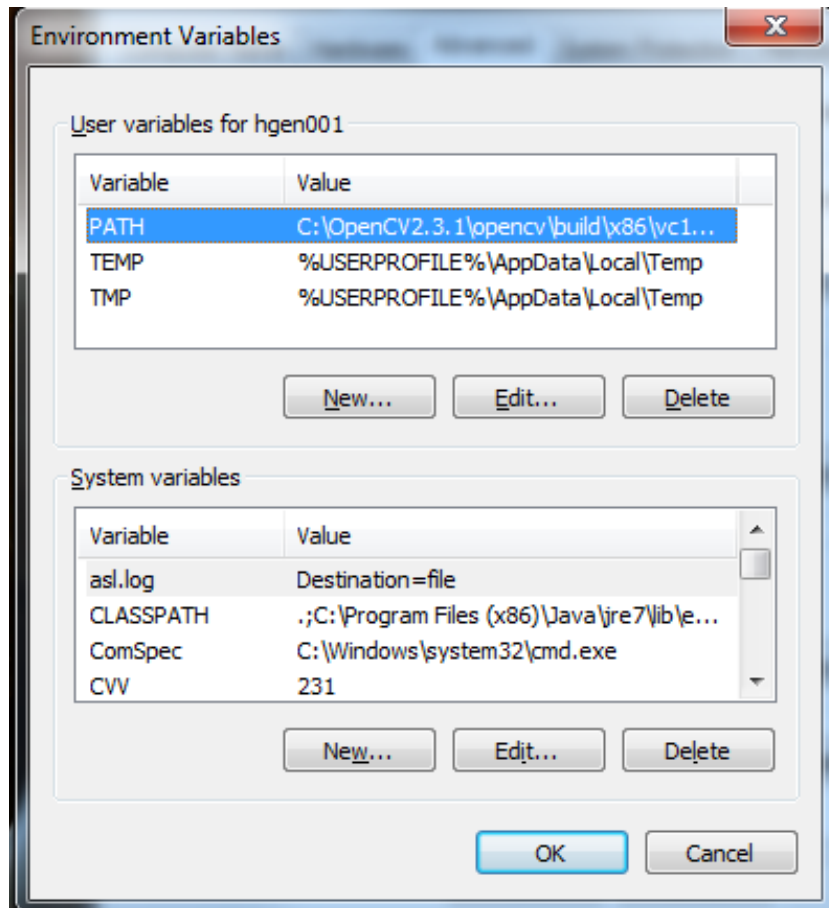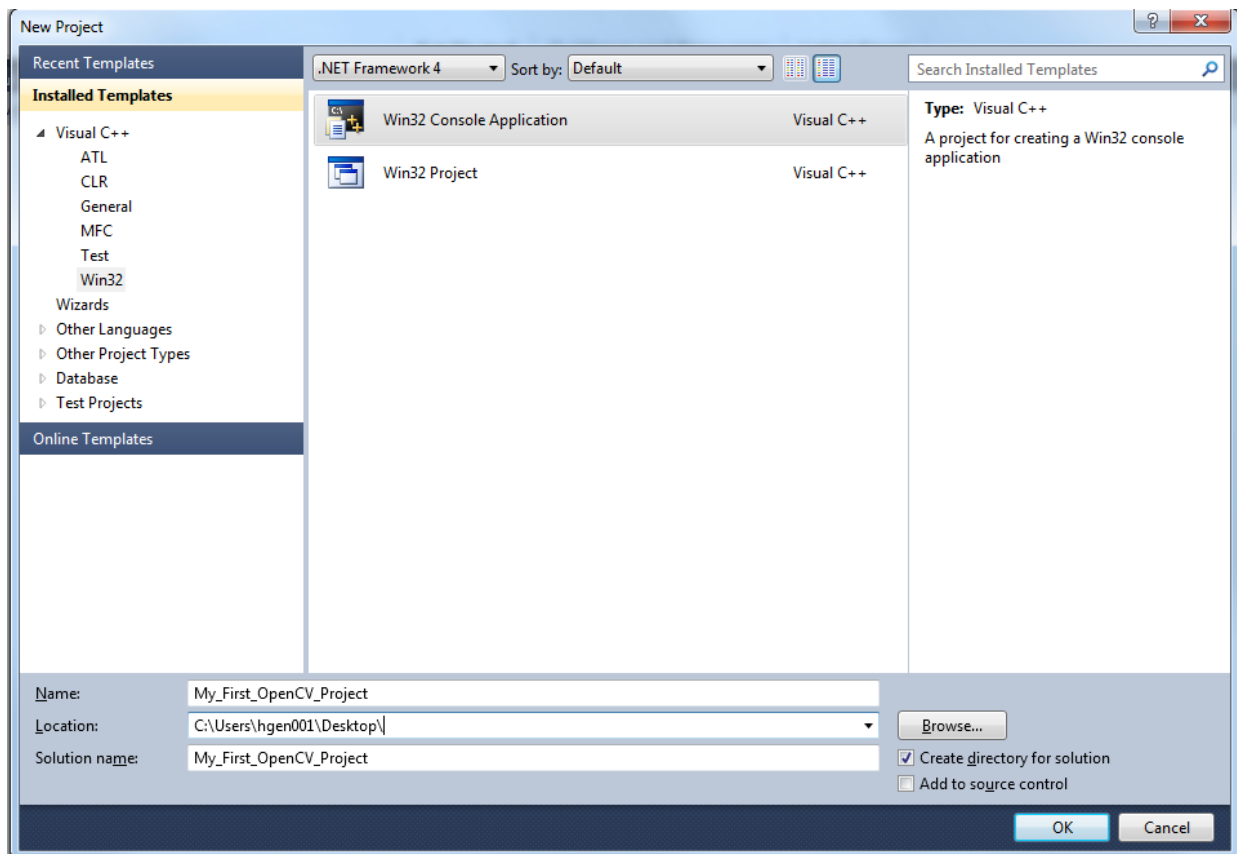
Step 2. Create Your First OpenCV Project

- In Visual Studio 2010, Click **File** -> **New...** -> **Project...**
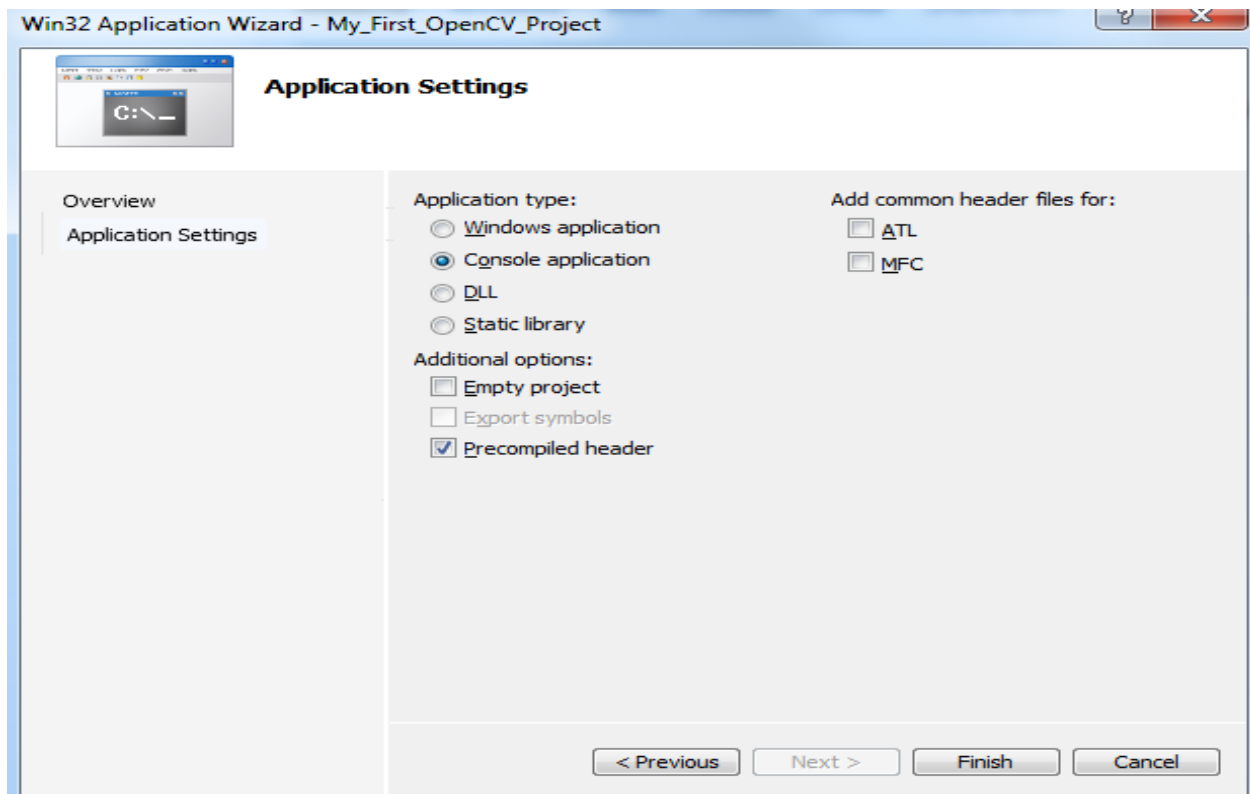
Or …

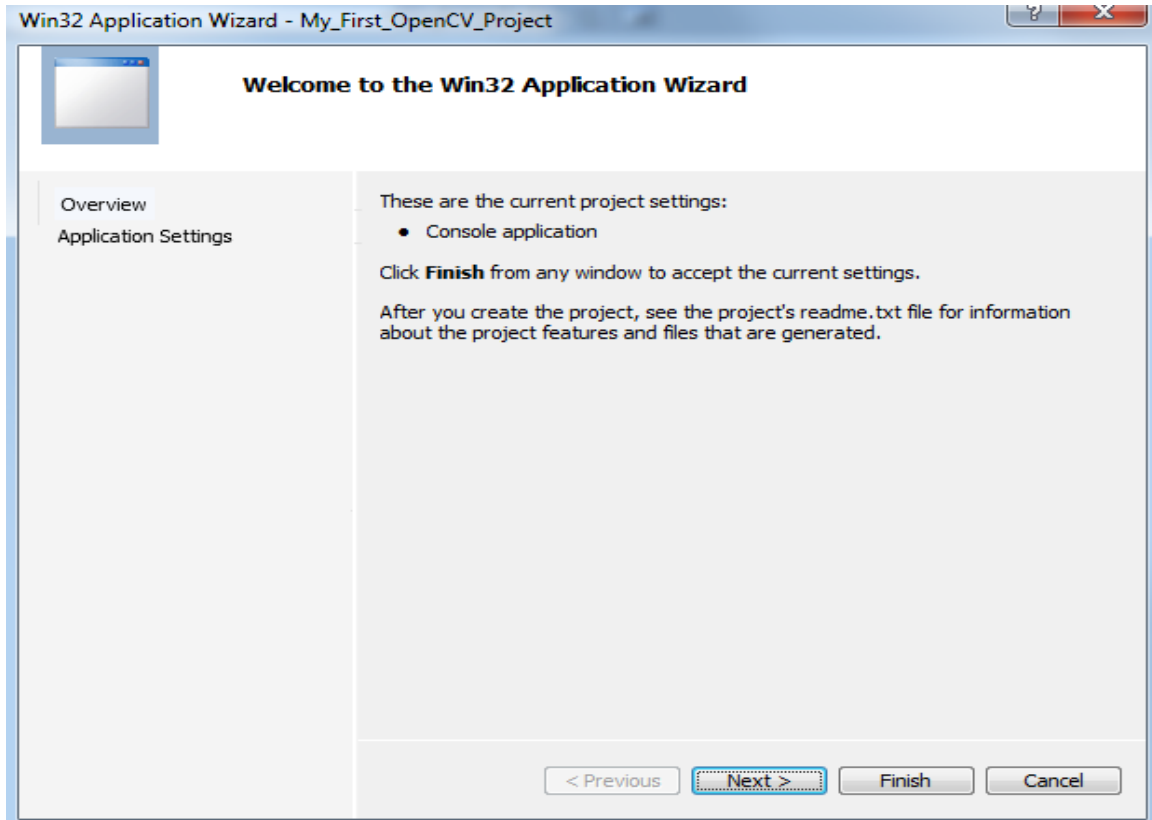- Click **New Project...** at the top left corner (as shown below).

- Select **Visual C++** -> **Win32** -> **Win32 Console Application**

- Type the project name and choose location to store your project.
- Click **OK**.
- In the Application Wizard, click **Next >** button.

- At this stage, I recommend check "Precompiled headers"
- Then click **Finish**

After the above steps done, Visual Studio will create the project folder with your pre-defined project name, and the folder will be stored at your pre-defined location.

Write some piece of OpenCV code and when finished, build your solution by pressing **F7**. Then there would be some errors. In order to resolve the problems, you need to do some additional OpenCV settings as follows:

- From **Solution Explorer**, right click on **<Your Project>**, then select **Properties**. (Alternatively, you can simply use shortcut **Alt** + **F7**).

- Select **Configuration Properties** -> **VC++ Directories** tab.

- Select **All Configurations** from the dropdown list of Configuration.
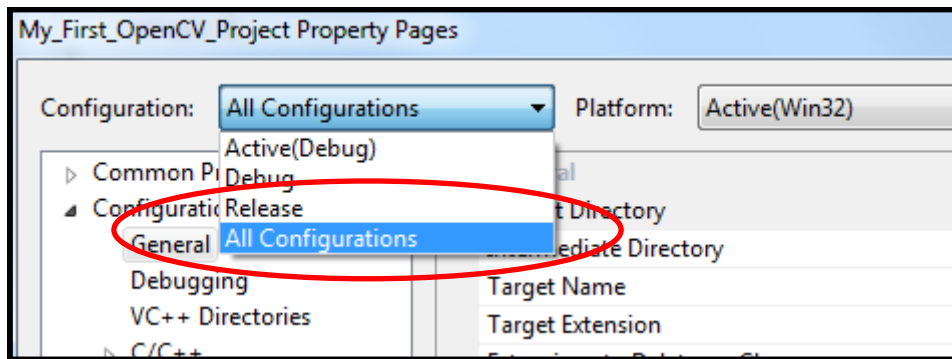
- Go to **Configuration Properties** -> **C/C++** -> **General**, and edit the field **Additional Include Directories** to add the following 3 paths:
    - C:\OpenCV2.3.1\build\include\opencv;
    - C:\OpenCV2.3.1\build\include\opencv2;
    - C:\OpenCV2.3.1\build\include;

- Go to **Configuration Properties** -> **Linker** -> **General**, and edit the field **Additional Library Directories**, add the following path:
    - C:\OpenCV2.3.1\build\x86\vc10\lib

- Select **Linker** tab -> **Input** -> **Additional Dependencies**, add paths for all potentially required OpenCV libraries, here is a full list:

    opencv_calib3d231d.lib
    opencv_contrib231d.lib
    opencv_core231d.lib
    opencv_features2d231d.lib
    opencv_flann231d.lib
    opencv_gpu231d.lib
    opencv_haartraining_engined.lib
    opencv_highgui231d.lib
    opencv_imgproc231d.lib
    opencv_legacy231d.lib
    opencv_ml231d.lib
    opencv_objdetect231d.lib
    opencv_ts231d.lib
    opencv_video231d.lib
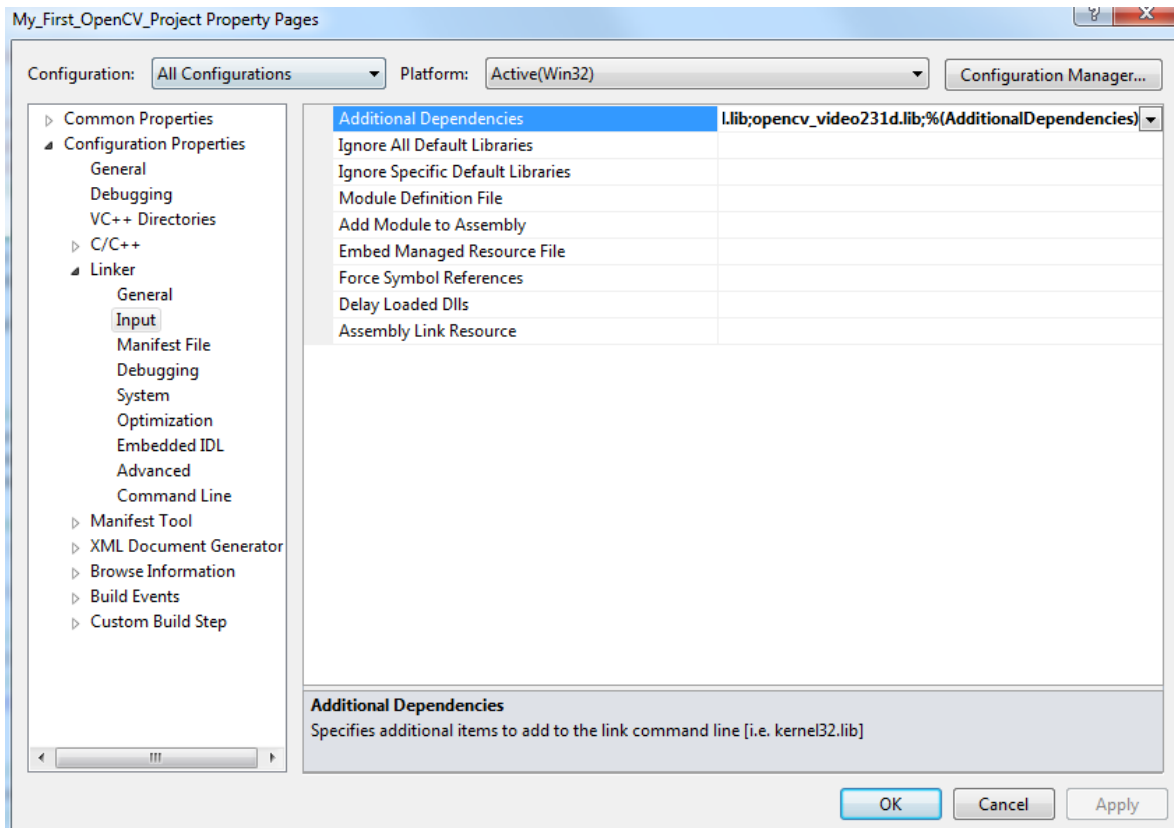
- Click **OK** or **Apply**, then you should be ready to go.

Please go to http://www.cs.auckland.ac.nz/~rklette/709/ and download two example programs for OpenCV Tutorial 1&2. You should be able to run them.