Lab Task 6.1 – const correctness

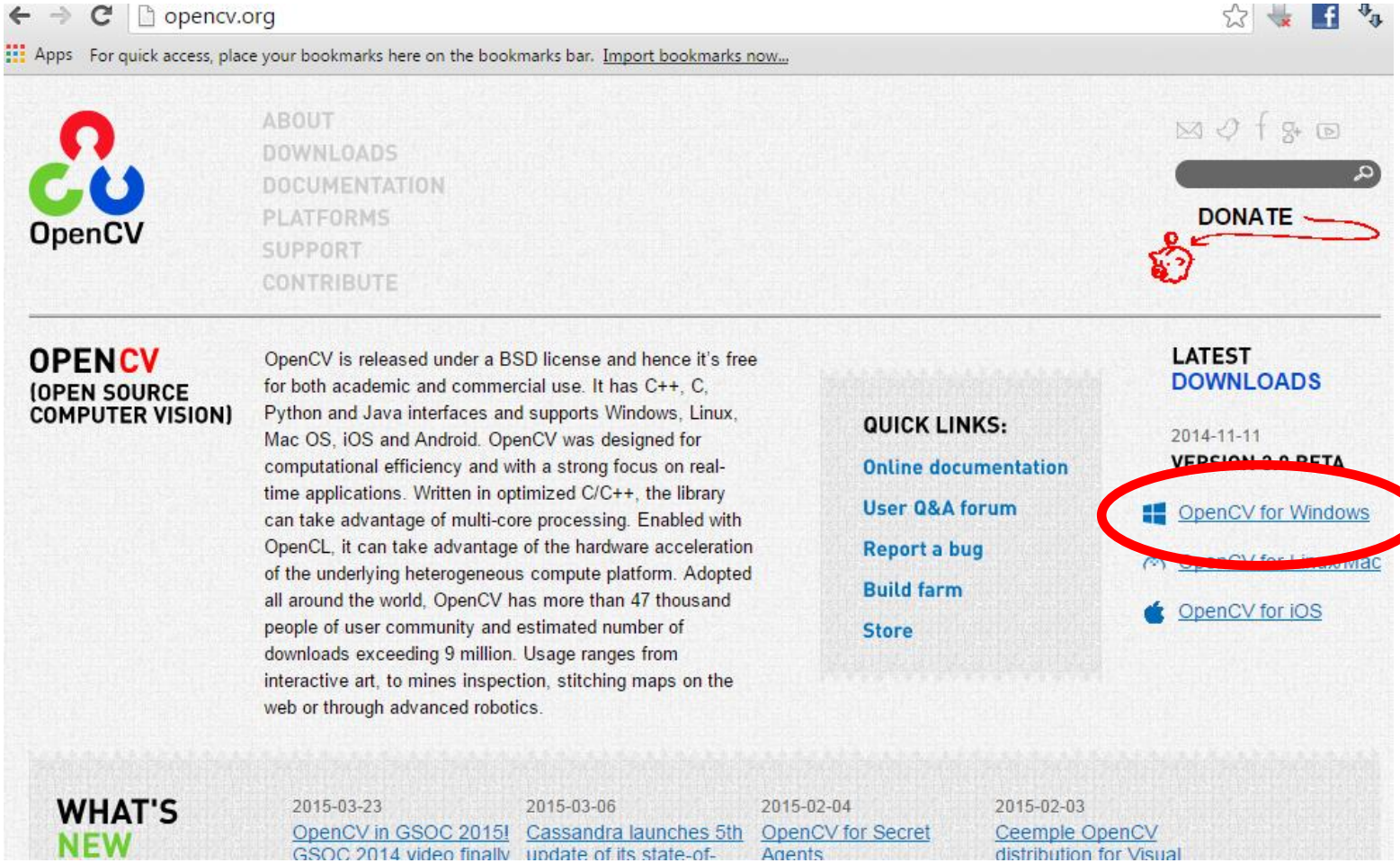
- Modify the interface rectangle.h such that it is `const` correct

- What to upload
  - Const corrected file with one inline comment for each usage of `const` keyword

Working with libraries

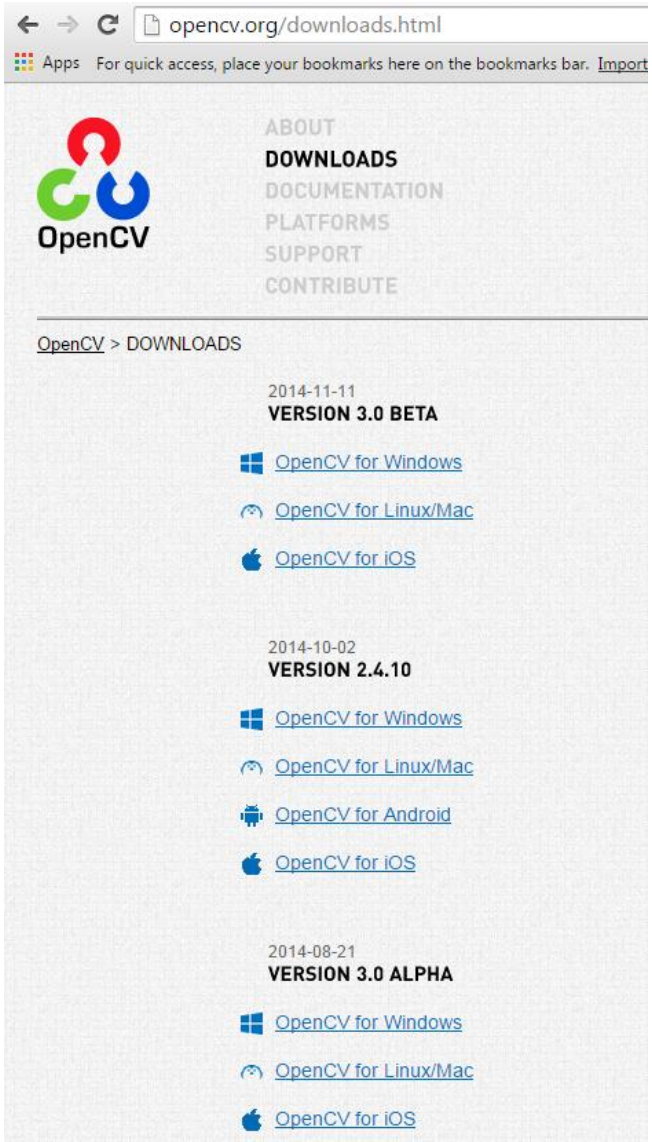
- Large programs come as a collection of libraries
- Each library has
  - Application programmer interface (API)
  - Header files
  - Pre-compiled libraries
    - static -> <name>.lib
    - dynamic -> <name>.dll
  - Source code (for Open Source projects)

Example – OpenCV



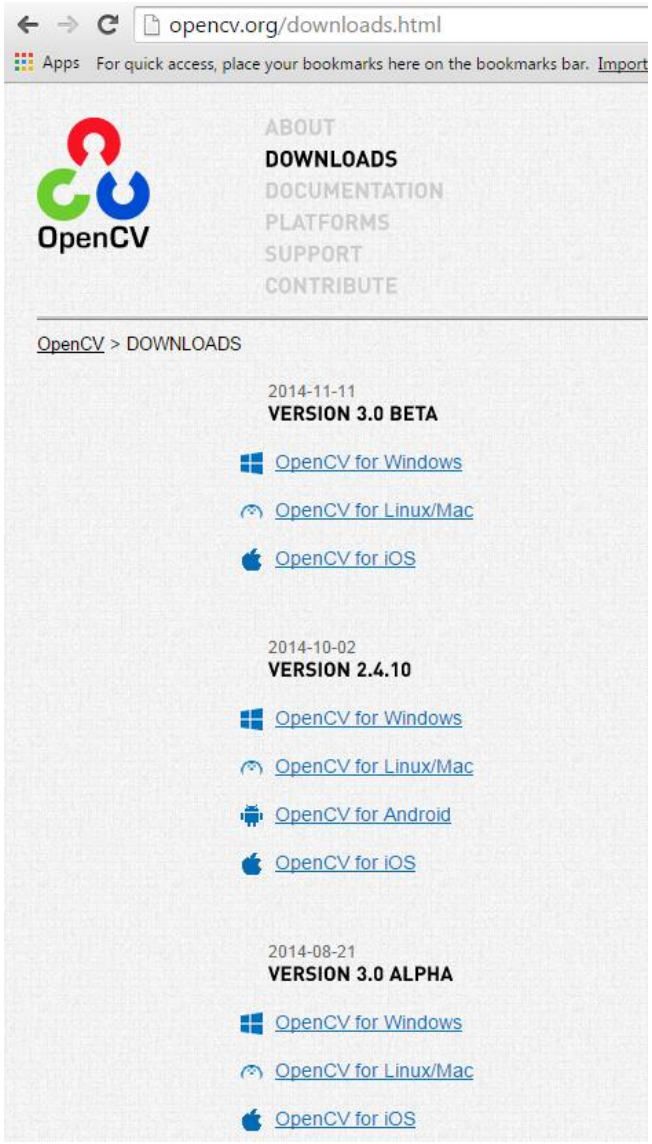
Software Releases

- Each source release is numbered with the convention major.minor.version <suffix>
  - Major implies API changes
    - (your previous code will not work)
  - Minor implies additional features
  - Version implies small changes / bug fixes



Software Releases

- Each source release is numbered with the convention major.minor.version <suffix>
  - ALPHA suffix (called **alpha release**) implies major code changes that are not comprehensively tested
    - Use at your own risk
  - BETA suffix (called **beta release**) implies substantial bug fixes and partially updated documentation
    - Still use at your own risk
  - **Stable releases have no suffix**
    - Can be used in production code (AS IS warranty)



Using OpenCV

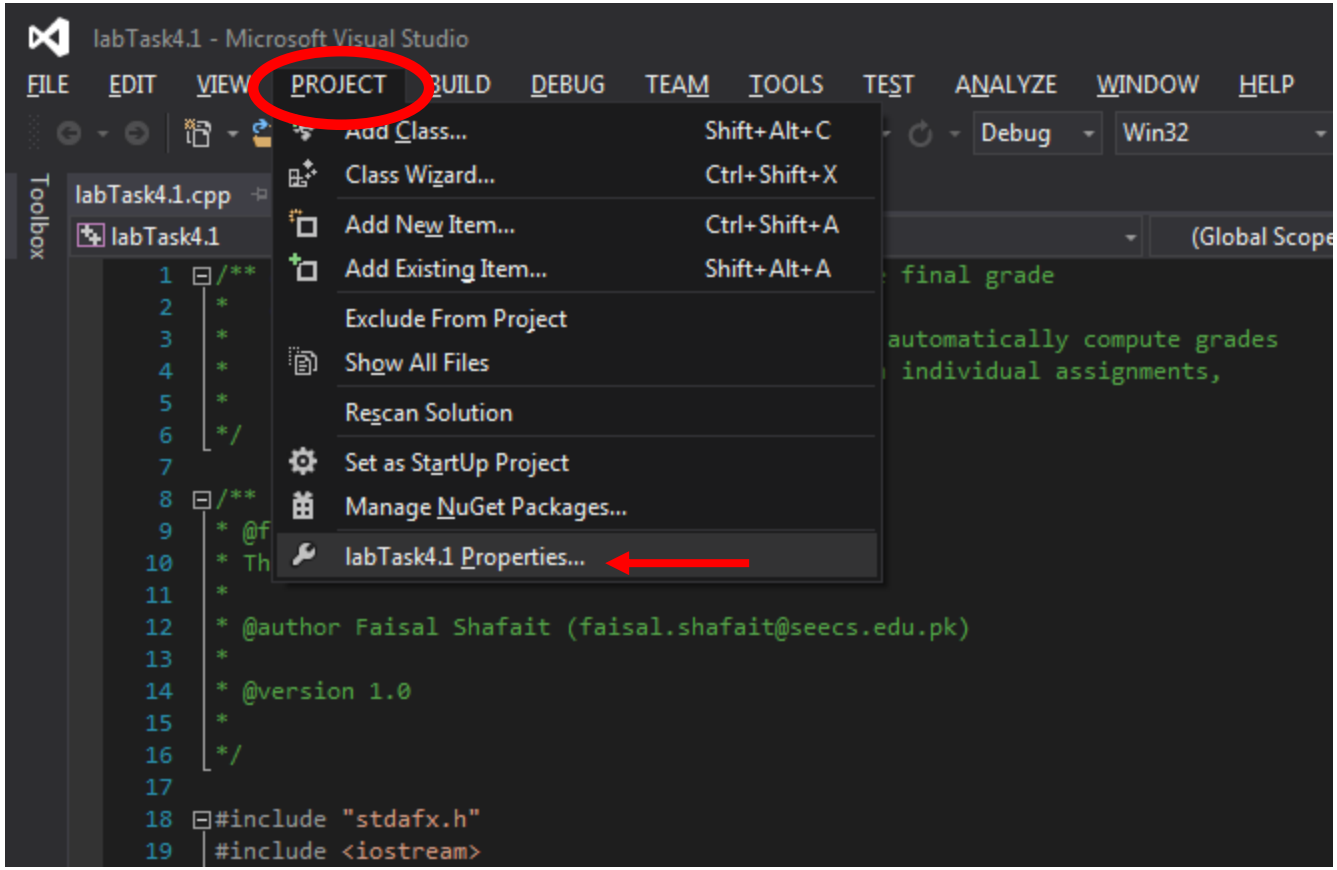
- OpenCV provides you
  - ✓ API
  - ✓ Header files
  - ✓ Pre-compiled libraries
    - ✓ static -> <name>.lib
    - ✓ dynamic -> <name>.dll
  - ✓ Source code
  - ✓ Example code (opencv\sources\samples\cpp)

Compiling code with external libraries

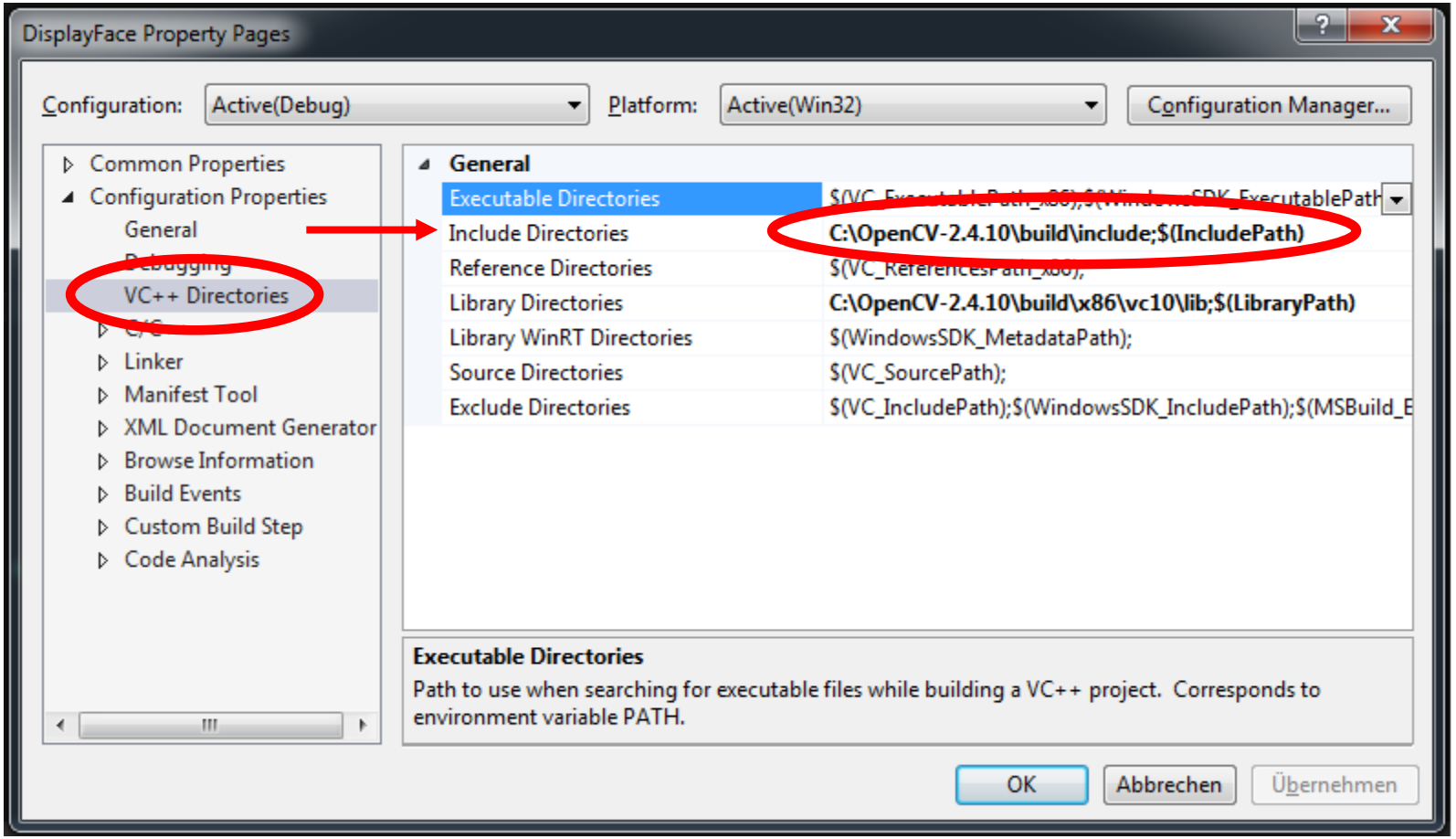
- Four simple steps

1. Tell the compiler where the header files are
2. Tell the compiler where the library files are
3. Tell the compiler which library files to use
4. Copy DLLs to the same folder where exe is

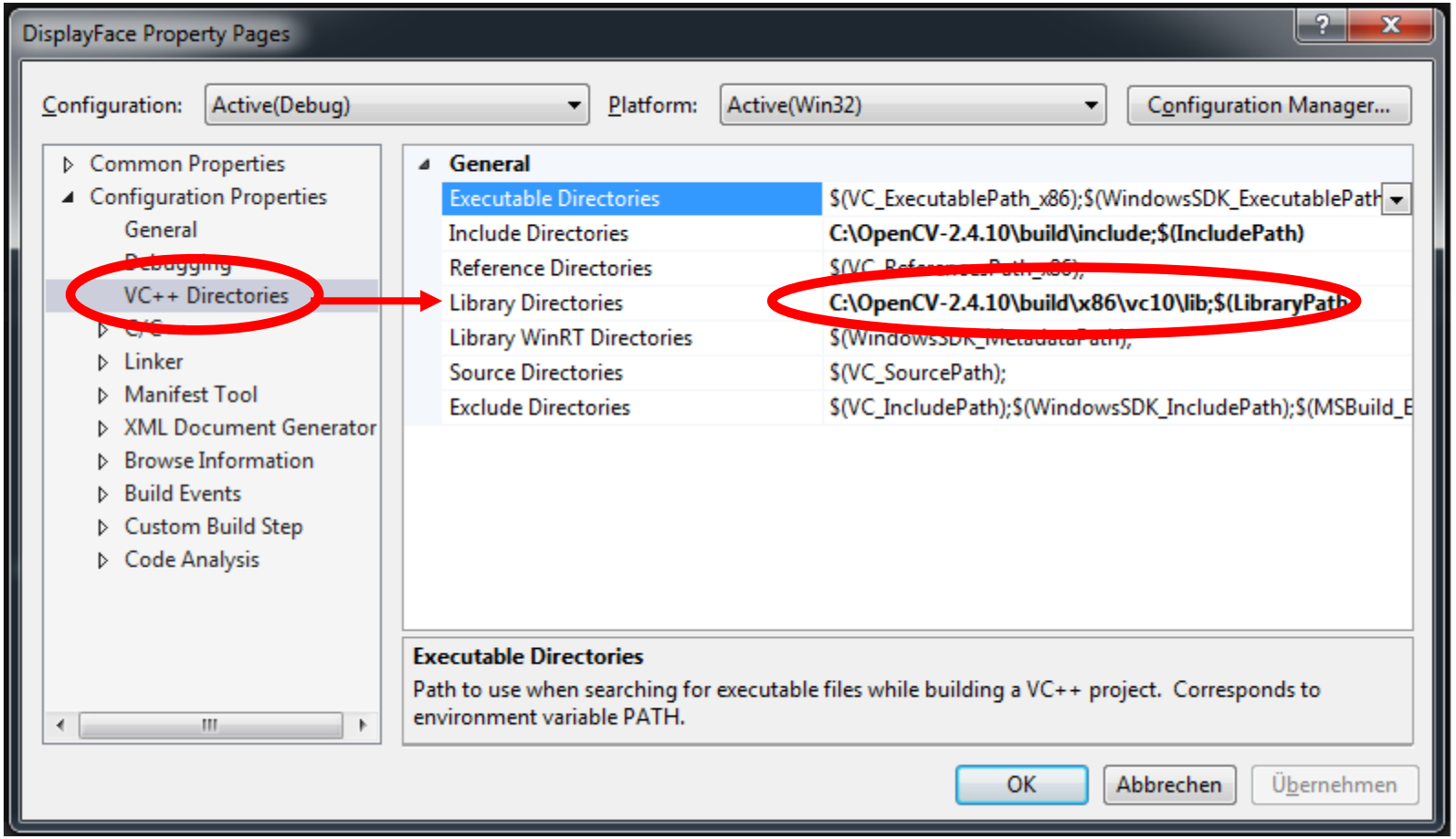
How to *tell* the compiler?



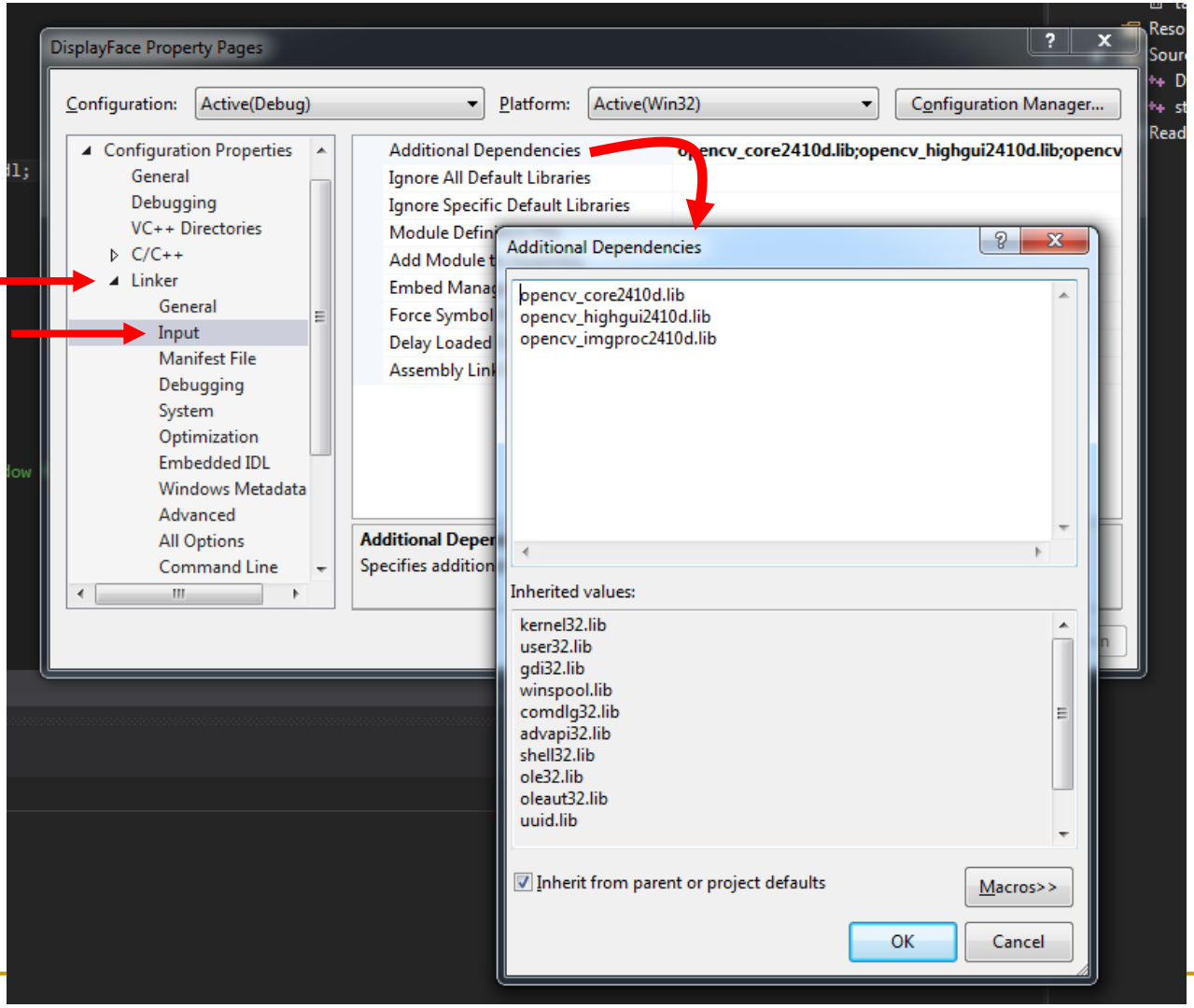
Header files path



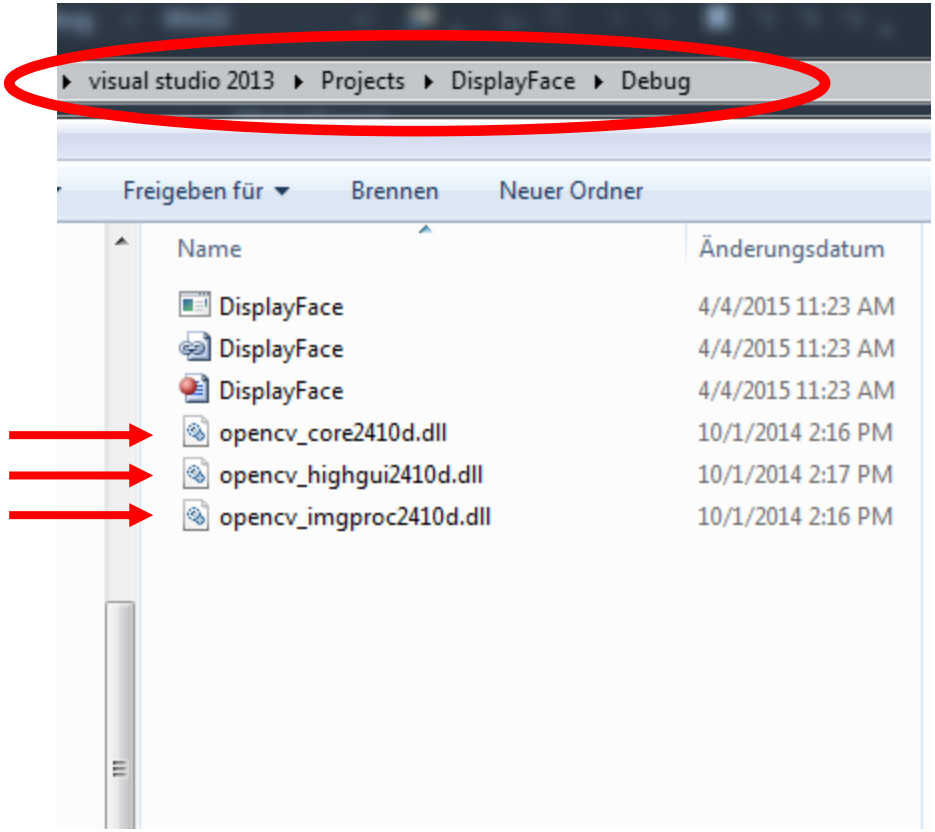
Library files path



Which libraries to use?



Copy DLLs to the folder containing the application



Lab Task 6.2 – Display your Image

- opencv\sources\samples\cpp\
  - tutorial_code\
    - introduction\
      - windows_visual_studio_Opencv

- Compile and run the code to display an image containing your face
- Upload a screen-shot of the output (sample output on next slide)

Sample Output