**Step 1: Locate Paths**

CMake Path

C:\Program Files\CMake\bin

OpenCV Paths

C:\opencv\build\bin

C:\opencv\build\include

C:\opencv\build\lib

Step 2: Open Environment Variables

**Add CMake to the PATH**

* + Under System variables, find the Path variable and click Edit.
  + In the Edit Environment Variable Window Click New Add the CMake bin path **- C:\Program Files\CMake\bin**,
  + Click OK to save.

**Add OpenCV to the PATH**

* Repeat the above process to add the OpenCV bin path **-C:\opencv\build\bin**

**Add OpenCV Include and Library Paths**

* In the Environment Variables window, under System variables, click New and add the following

1. **Variable Name: OpenCV\_DIR**

**Variable Value:** **C:\opencv\build**

1. **Variable Name: OpenCV\_INCLUDE\_DIR  
   Variable Value:** **C:\opencv\build\include**
2. **Variable Name: OpenCV\_LIB\_DIR  
   Variable Value:** **C:\opencv\build\lib**

**Verify the Setup**

Check CMake **- cmake –version**

**Check OpenCV Variables:**

* echo %OpenCV\_DIR%
* echo %OpenCV\_INCLUDE\_DIR%
* echo %OpenCV\_LIB\_DIR%

**Test with a Simple Project**

* **mkdir OpenCVTest**
* **cd OpenCVTest**

**Step 2: Write a Simple Program**

**Create a file called main.cpp**

**#include <opencv2/opencv.hpp>**

**#include <iostream>**

**int main() {**

**// Load an image**

**cv::Mat image = cv::imread("example.jpg");**

**// Check if image is loaded successfully**

**if (image.empty()) {**

**std::cerr << "Error: Unable to load image!" << std::endl;**

**return -1;**

**}**

**// Display the image**

**cv::imshow("Display Window", image);**

**cv::waitKey(0);**

**return 0;**

**}**

**Step 3: Create a CMakeLists.txt File**

cmake\_minimum\_required(VERSION 3.10)

project(OpenCVTest)

# Set C++ standard

set(CMAKE\_CXX\_STANDARD 14)

# Find OpenCV package

find\_package(OpenCV REQUIRED)

# Include OpenCV headers

include\_directories(${OpenCV\_INCLUDE\_DIRS})

# Add executable

add\_executable(OpenCVTest main.cpp)

# Link OpenCV libraries

target\_link\_libraries(OpenCVTest ${OpenCV\_LIBS})

**Step 4: Build the Project**

Open a terminal in the project directory.

Create a build folder and run CMake:

* mkdir build
* cd build
* cmake ..

Compile the project:

cmake --build

Run the Program

./OpenCVTest