

Lab 11

CPS592 – Visual Computing and Mixed Reality

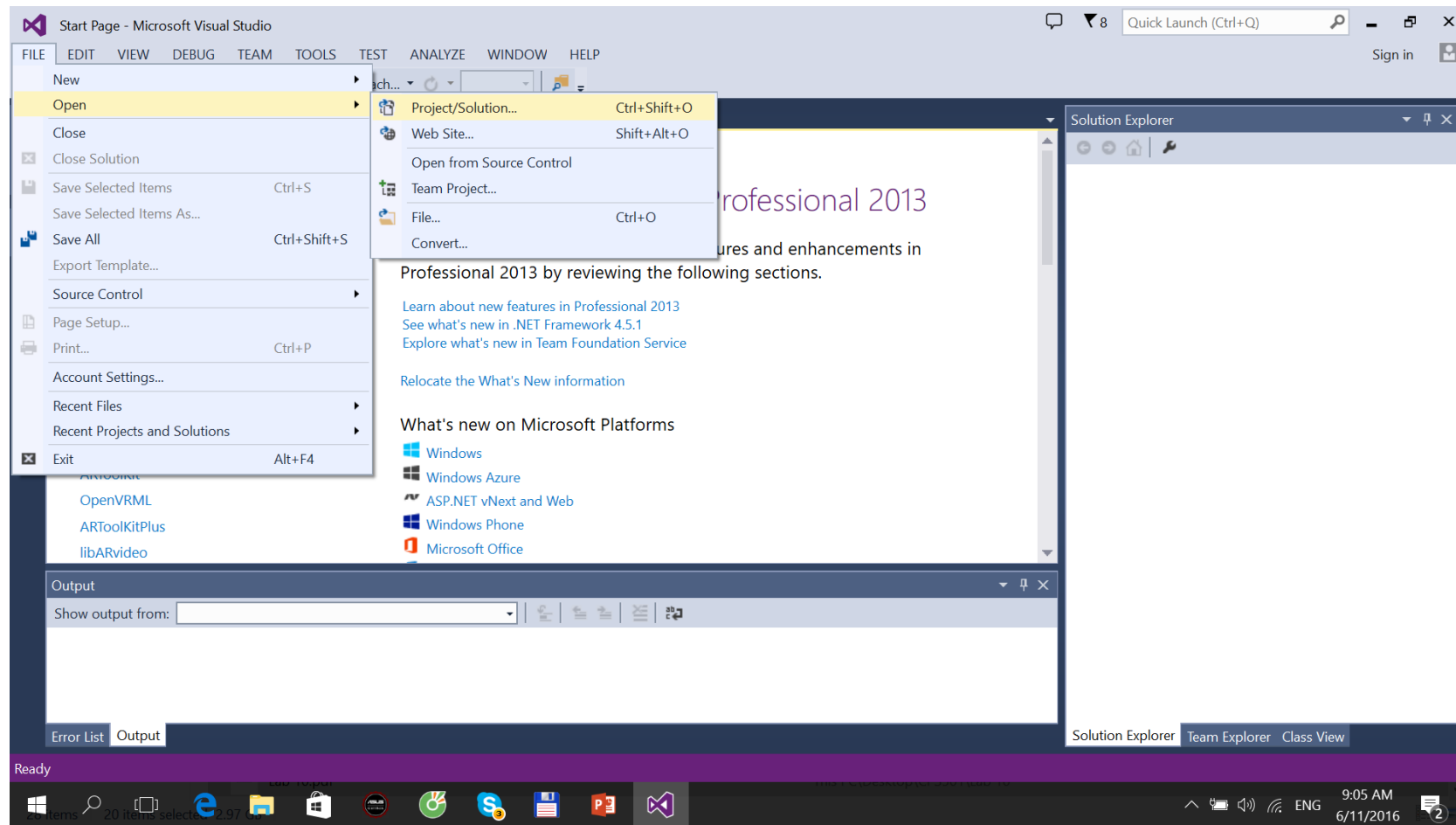
Objective

- Explore ARToolkit
 - Check the pattern (marker)
 - The flowchart of ARToolkit
- Compile the code
- Modify the code
 - Change the pattern (marker)
 - Change the superimposed object
 - Change the rotation of the object

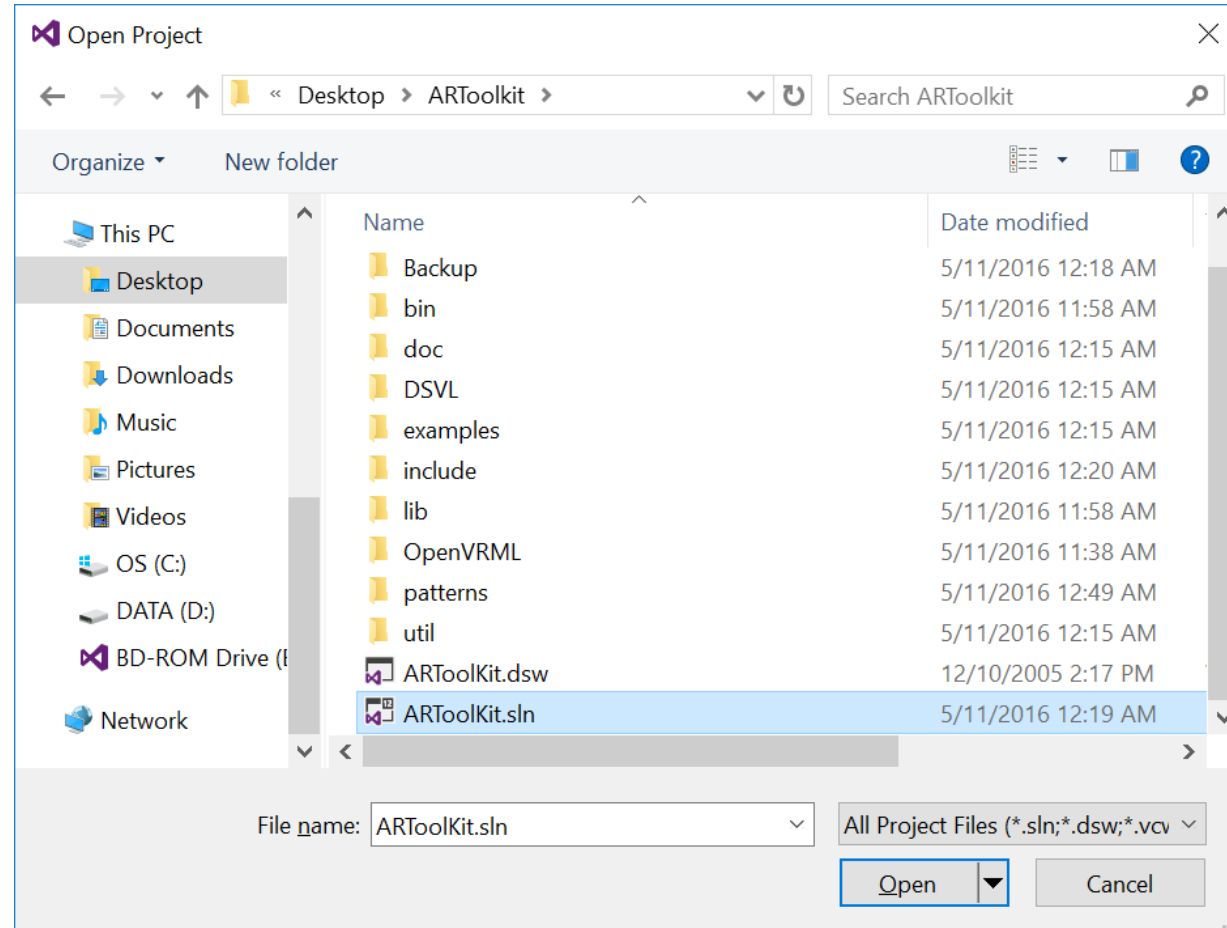
Preparation

- Open Visual Studio (version \geq 2013)
- Download *ARToolkit.zip1* from isidore
- Rename *ARToolkit.zip1* to *ARToolkit.zip* and unzip it.

Open ARToolkit project with Visual Studio



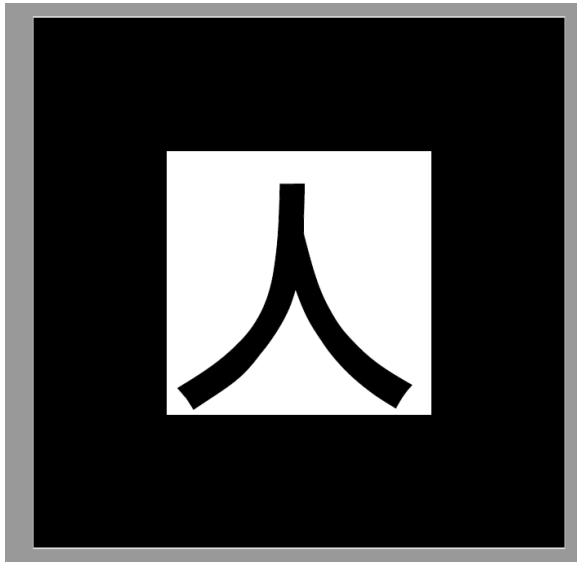
Open ARToolkit project with Visual Studio



What are markers (patterns)?

- How do they look like?
 - Check folder “patterns”

pattKanji.pdf



pattHiro.pdf

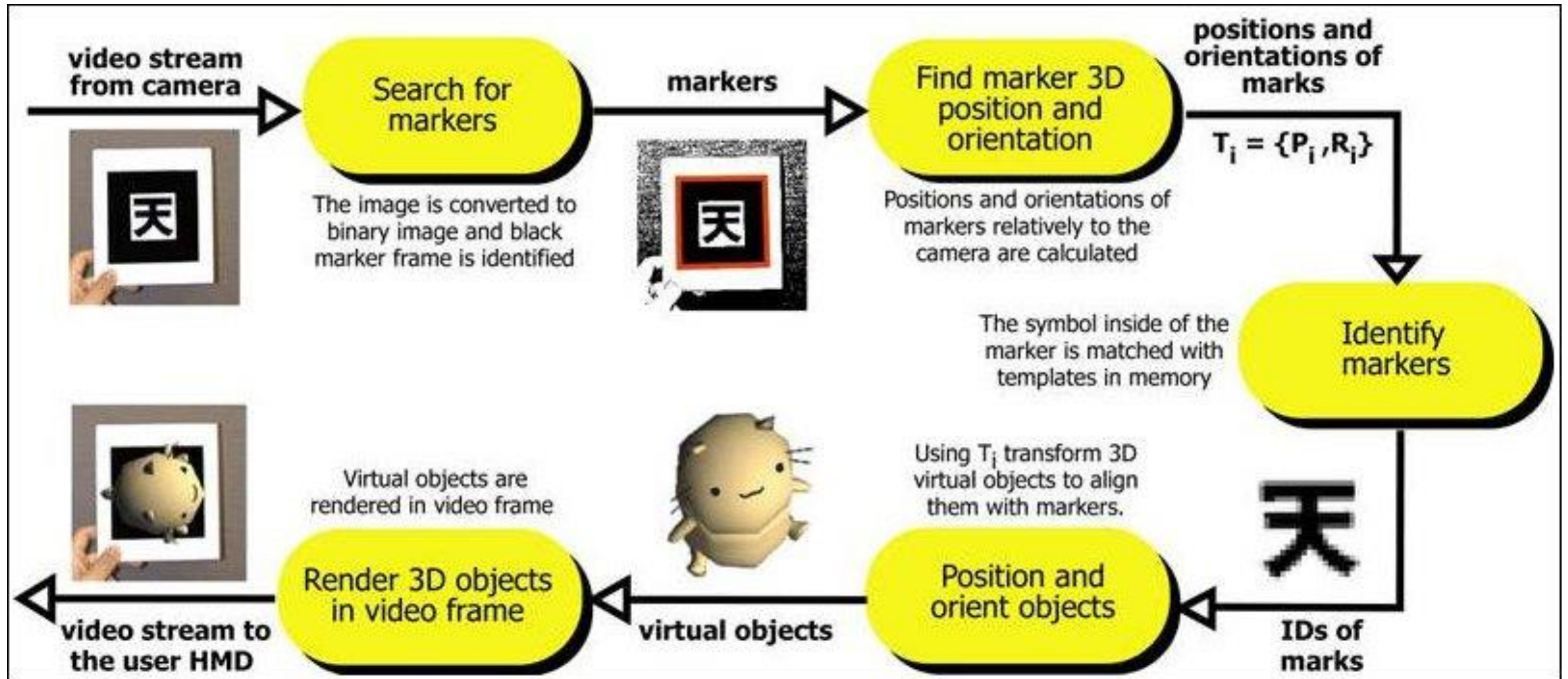


patt.kanji

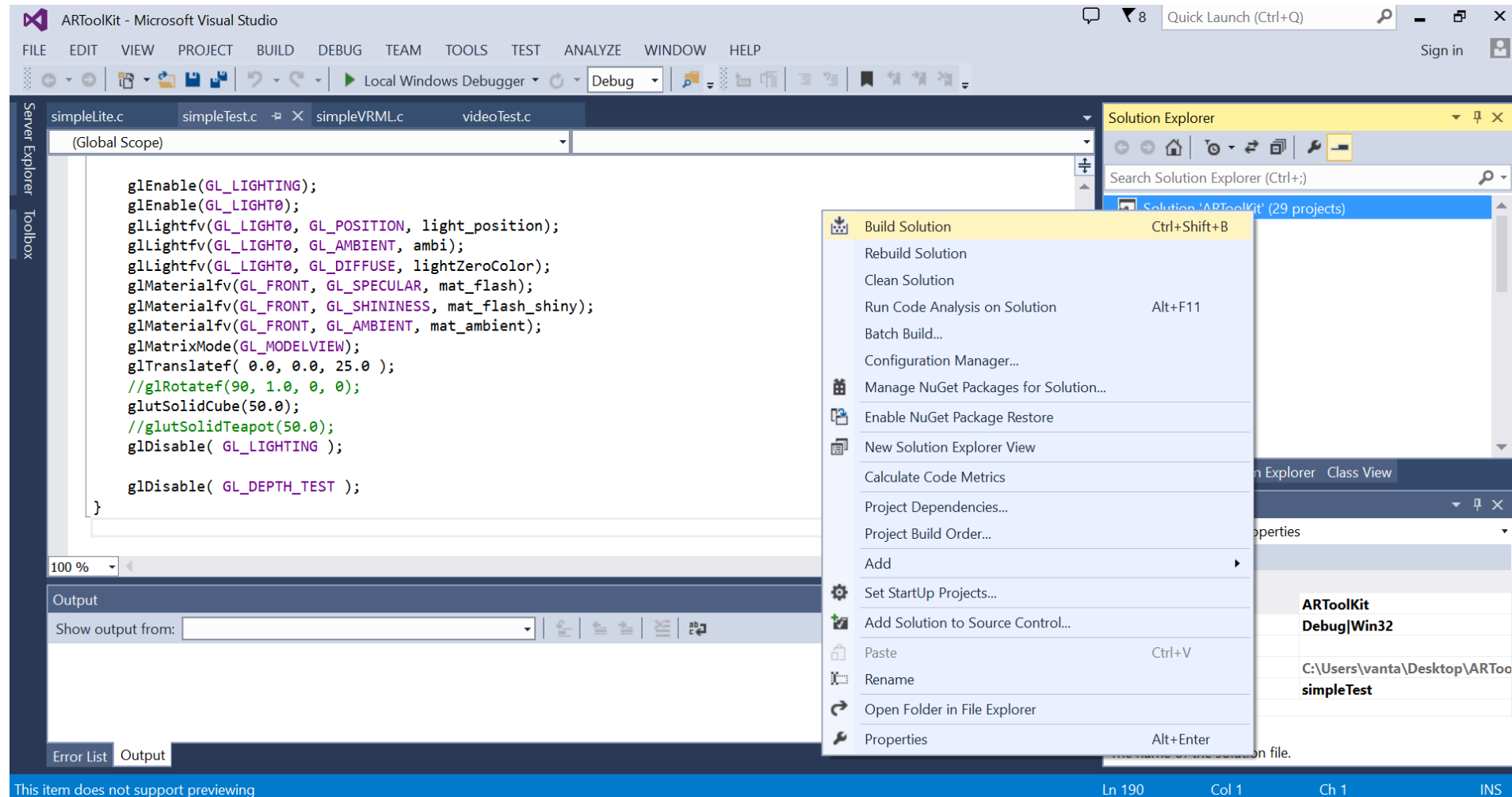
- [illegible]

[illegible]






















The flowchart of ARToolkit



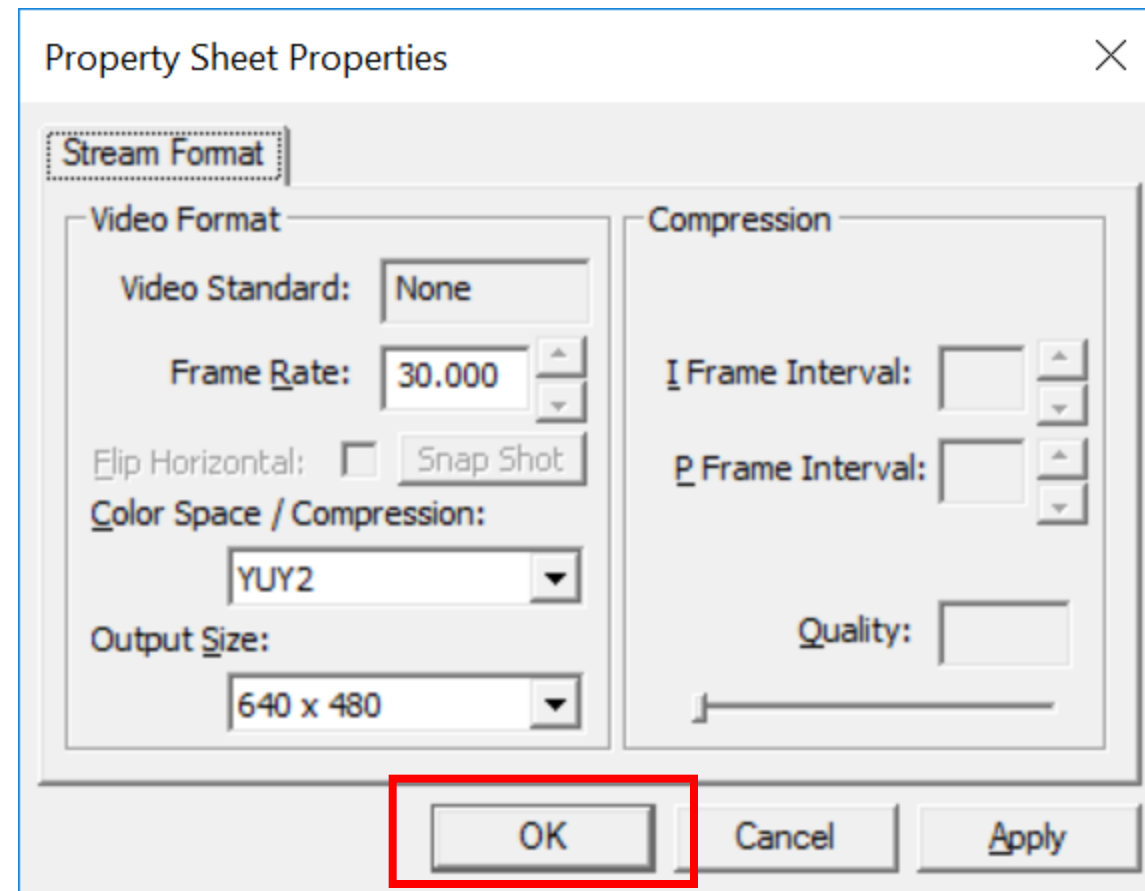
Compile the code



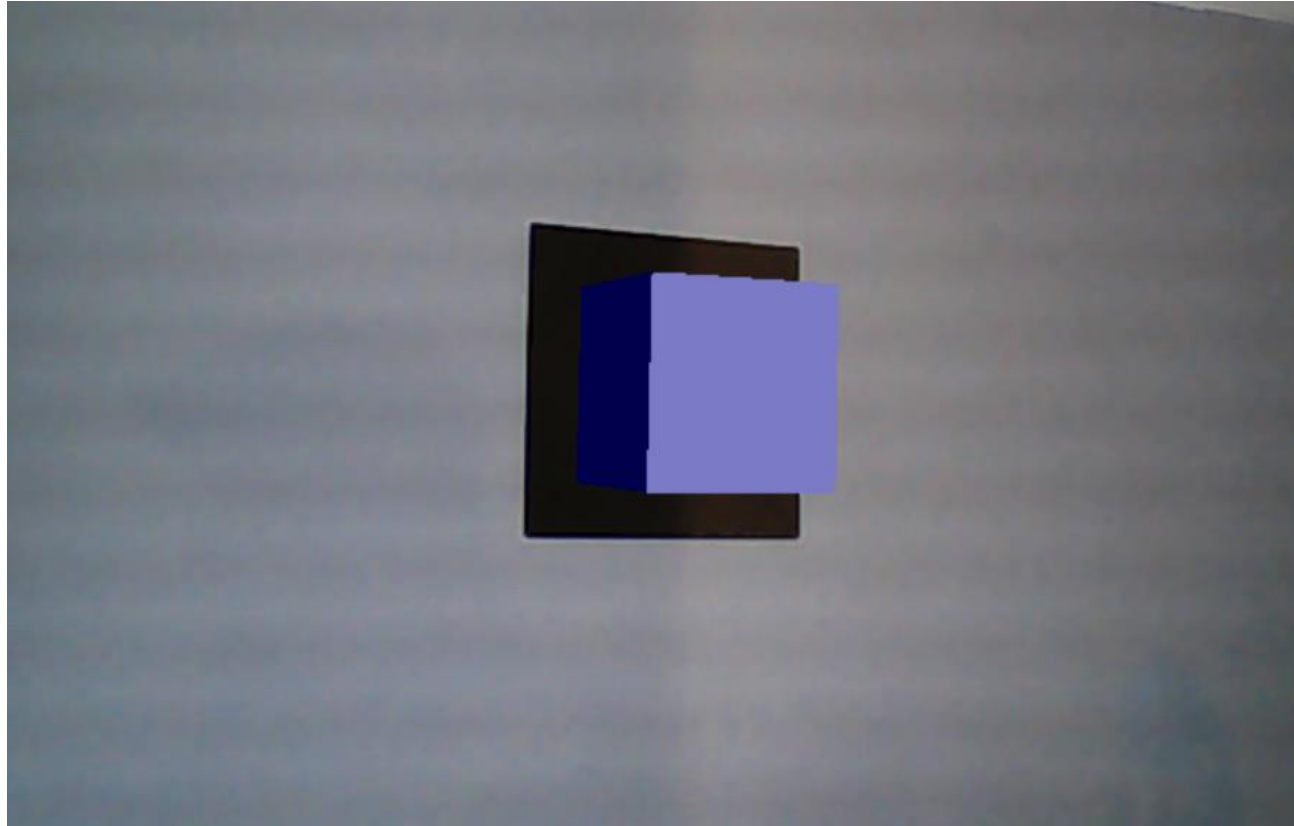
Run one example

| C > Desktop > ARToolkit > bin | | | |
|--|--------------------|-------------------------|----------|
| Name | Date modified | Type | Size |
|  multiTestd.exe | 5/11/2016 12:25 AM | Application | 798 KB |
|  multiTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,509 KB |
|  opengl32.dll | 28/8/2002 12:41 PM | Application extension | 670 KB |
|  opticald.exe | 5/11/2016 12:25 AM | Application | 797 KB |
|  opticald.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,519 KB |
|  paddleDemod.exe | 5/11/2016 12:25 AM | Application | 819 KB |
|  paddleDemod.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,531 KB |
|  paddleInteractionTestd.exe | 5/11/2016 12:25 AM | Application | 808 KB |
|  paddleInteractionTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,524 KB |
|  paddleTestd.exe | 5/11/2016 12:25 AM | Application | 801 KB |
|  paddleTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,512 KB |
|  rangeTestd.exe | 5/11/2016 12:25 AM | Application | 779 KB |
|  rangeTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,491 KB |
|  relationTestd.exe | 5/11/2016 12:25 AM | Application | 779 KB |
|  relationTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,491 KB |
|  simpleLited.exe | 5/11/2016 12:25 AM | Application | 774 KB |
|  simpleLited.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,495 KB |
|  simpleTest2d.exe | 5/11/2016 12:25 AM | Application | 780 KB |
|  simpleTest2d.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,485 KB |
|  simpleTestd.exe | 6/11/2016 9:18 AM | Application | 777 KB |
|  simpleTestd.ilc | 6/11/2016 9:18 AM | Incremental Linker File | 1,483 KB |

Run one example



Run one example

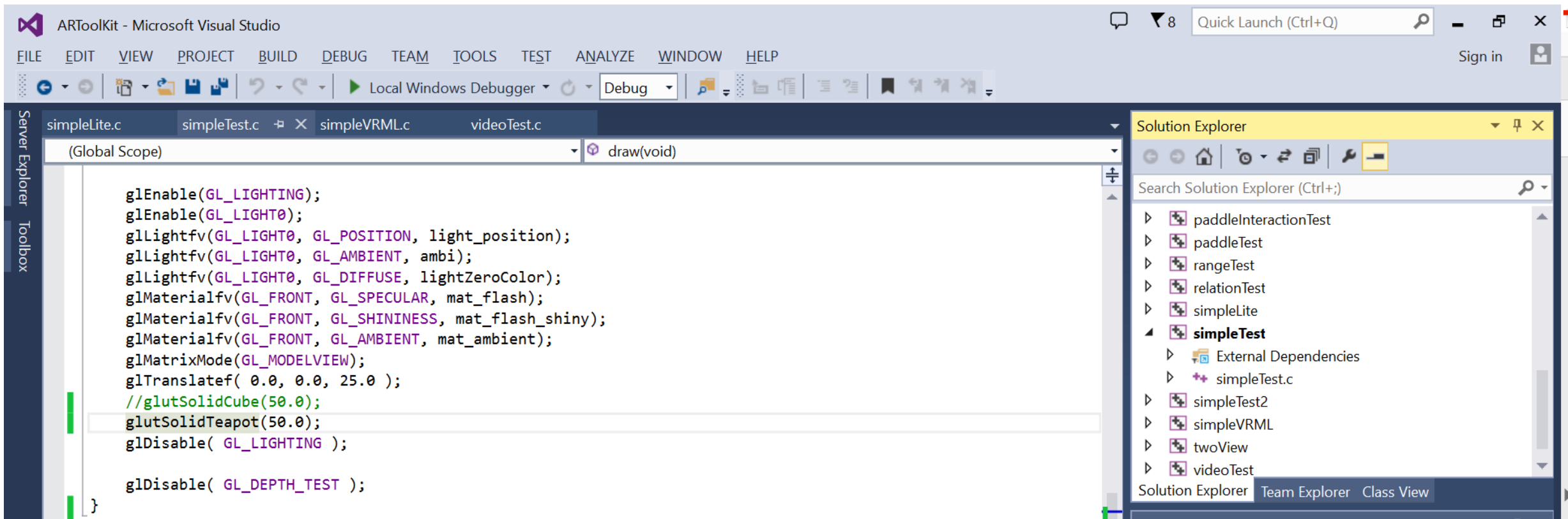


Modify the code

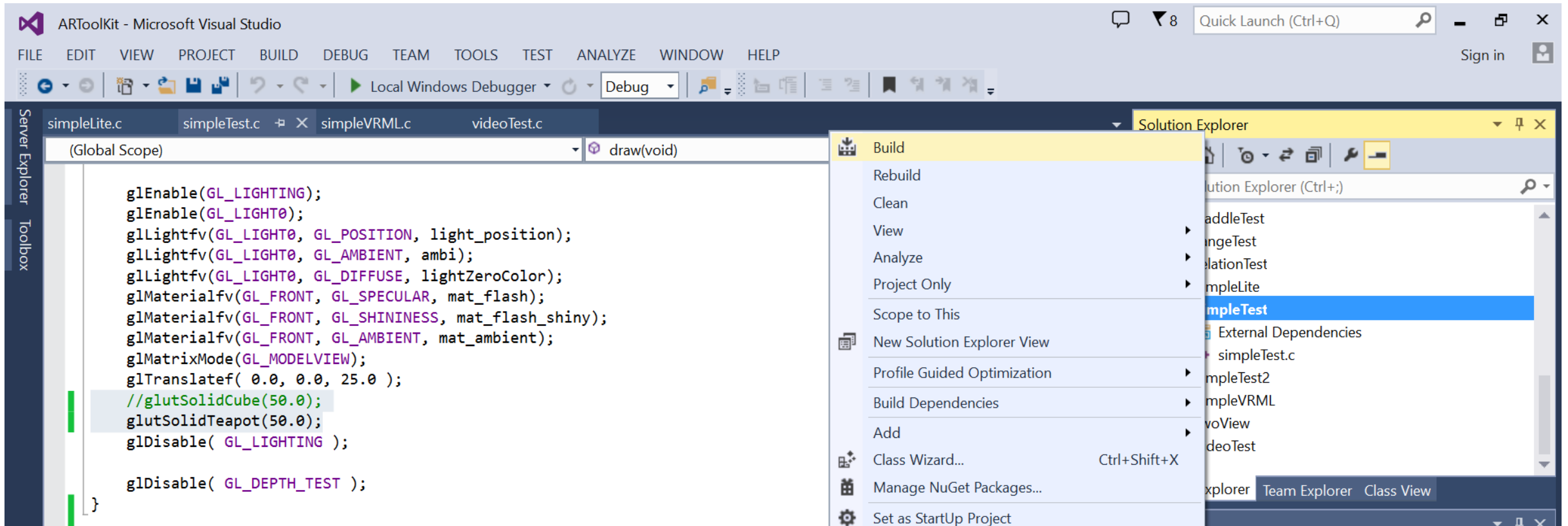
In simpleTest.c

```
//glutSolidCube(50.0);
```






















```
glutSolidTeapot(50.0); //display a teapot instead
```



Compile the modified code



Run the modified code

| C > Desktop > ARToolkit > bin | | | |
|--|--------------------|-------------------------|----------|
| Name | Date modified | Type | Size |
|  multiTestd.exe | 5/11/2016 12:25 AM | Application | 798 KB |
|  multiTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,509 KB |
|  opengl32.dll | 28/8/2002 12:41 PM | Application extension | 670 KB |
|  opticald.exe | 5/11/2016 12:25 AM | Application | 797 KB |
|  opticald.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,519 KB |
|  paddleDemod.exe | 5/11/2016 12:25 AM | Application | 819 KB |
|  paddleDemod.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,531 KB |
|  paddleInteractionTestd.exe | 5/11/2016 12:25 AM | Application | 808 KB |
|  paddleInteractionTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,524 KB |
|  paddleTestd.exe | 5/11/2016 12:25 AM | Application | 801 KB |
|  paddleTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,512 KB |
|  rangeTestd.exe | 5/11/2016 12:25 AM | Application | 779 KB |
|  rangeTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,491 KB |
|  relationTestd.exe | 5/11/2016 12:25 AM | Application | 779 KB |
|  relationTestd.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,491 KB |
|  simpleLited.exe | 5/11/2016 12:25 AM | Application | 774 KB |
|  simpleLited.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,495 KB |
|  simpleTest2d.exe | 5/11/2016 12:25 AM | Application | 780 KB |
|  simpleTest2d.ilc | 5/11/2016 12:25 AM | Incremental Linker File | 1,485 KB |
|  simpleTestd.exe | 6/11/2016 9:18 AM | Application | 777 KB |
|  simpleTestd.ilc | 6/11/2016 9:18 AM | Incremental Linker File | 1,483 KB |

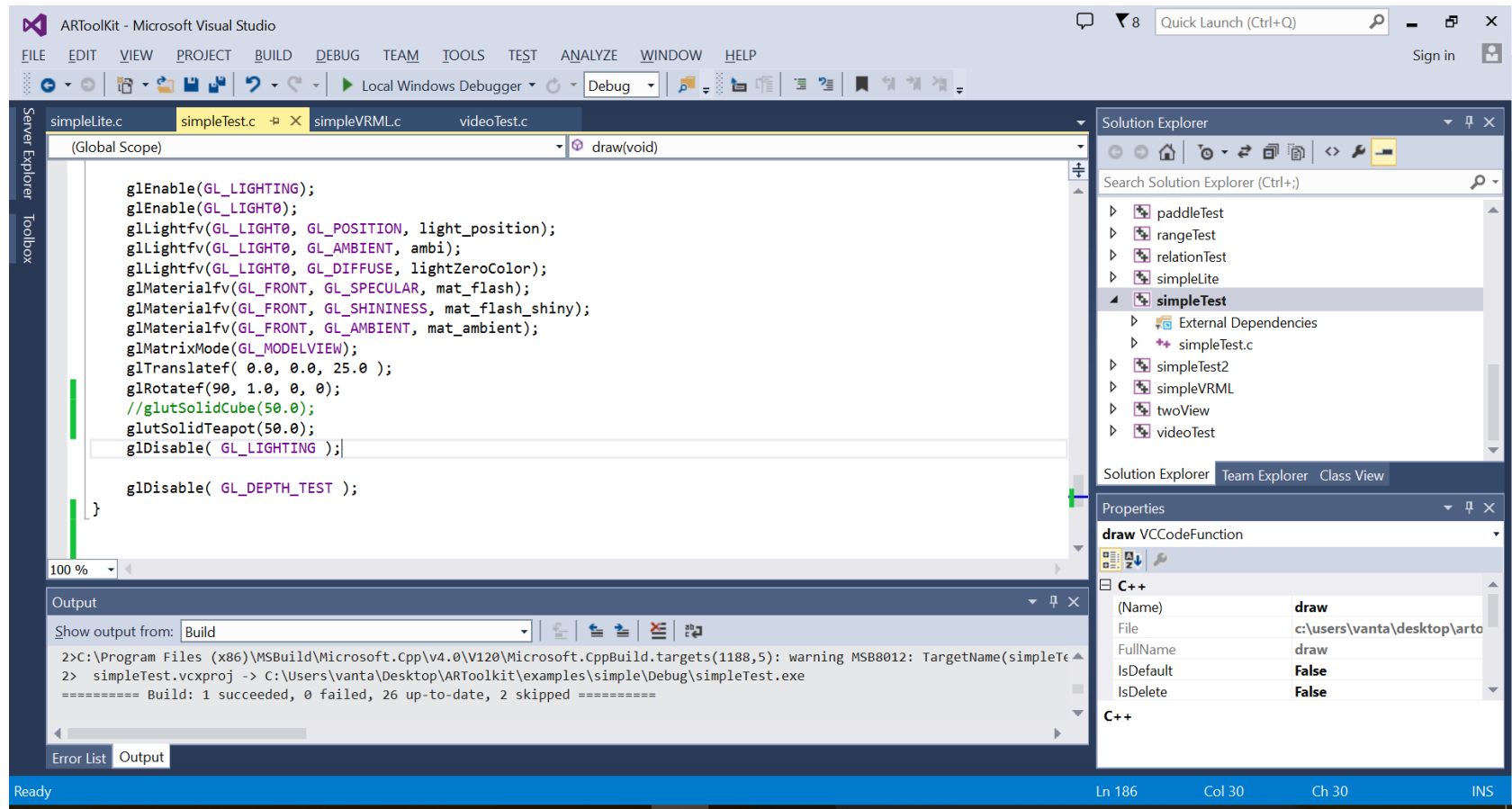
Run the modified code



Rotate the teapot

In simpleTest.c

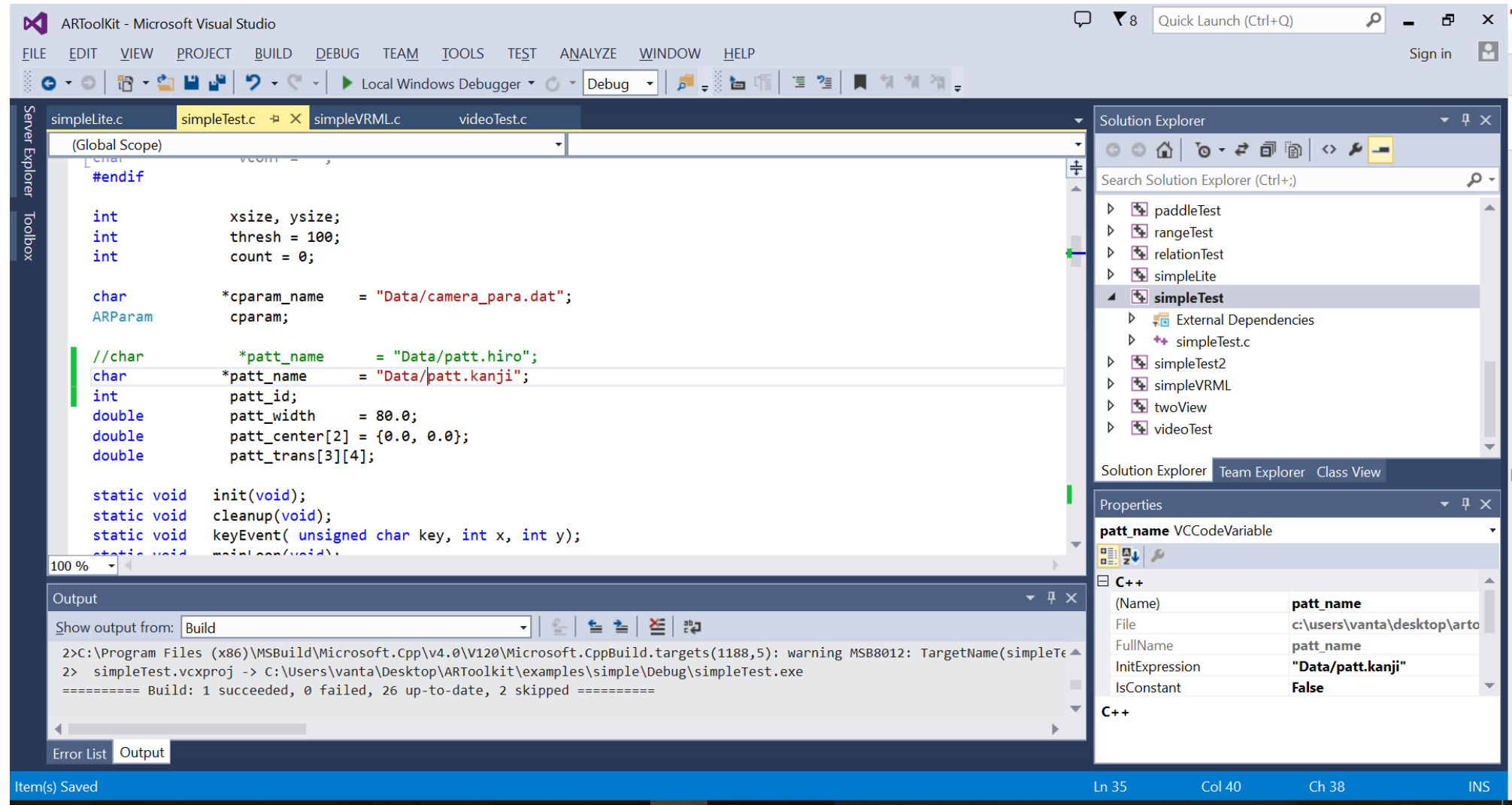
```
glRotatef(90, 1.0, 0, 0);  
//glutSolidCube(50.0);  
glutSolidTeapot(50.0);
```



Compile the modified code and run it



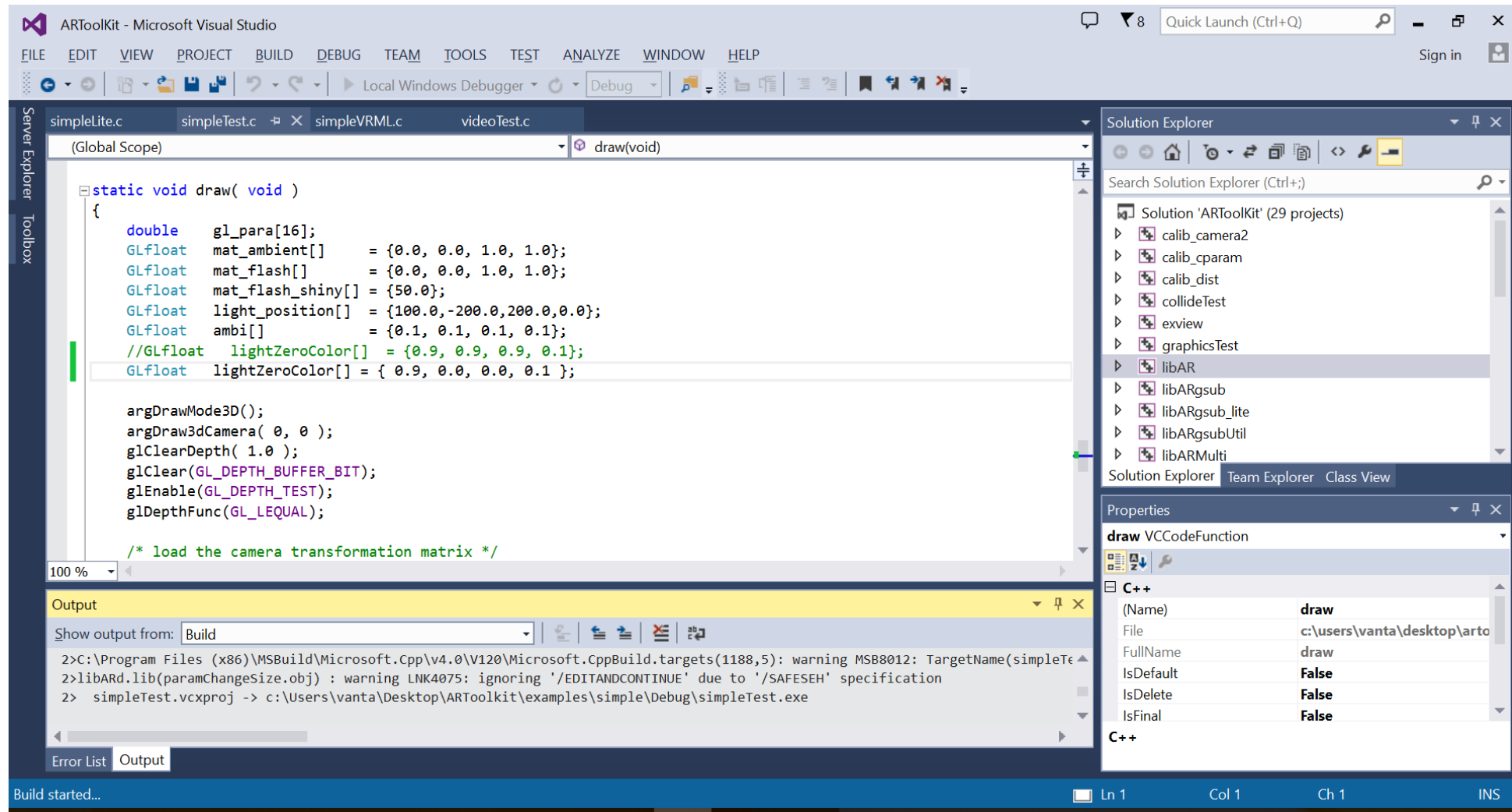
Change the pattern marker



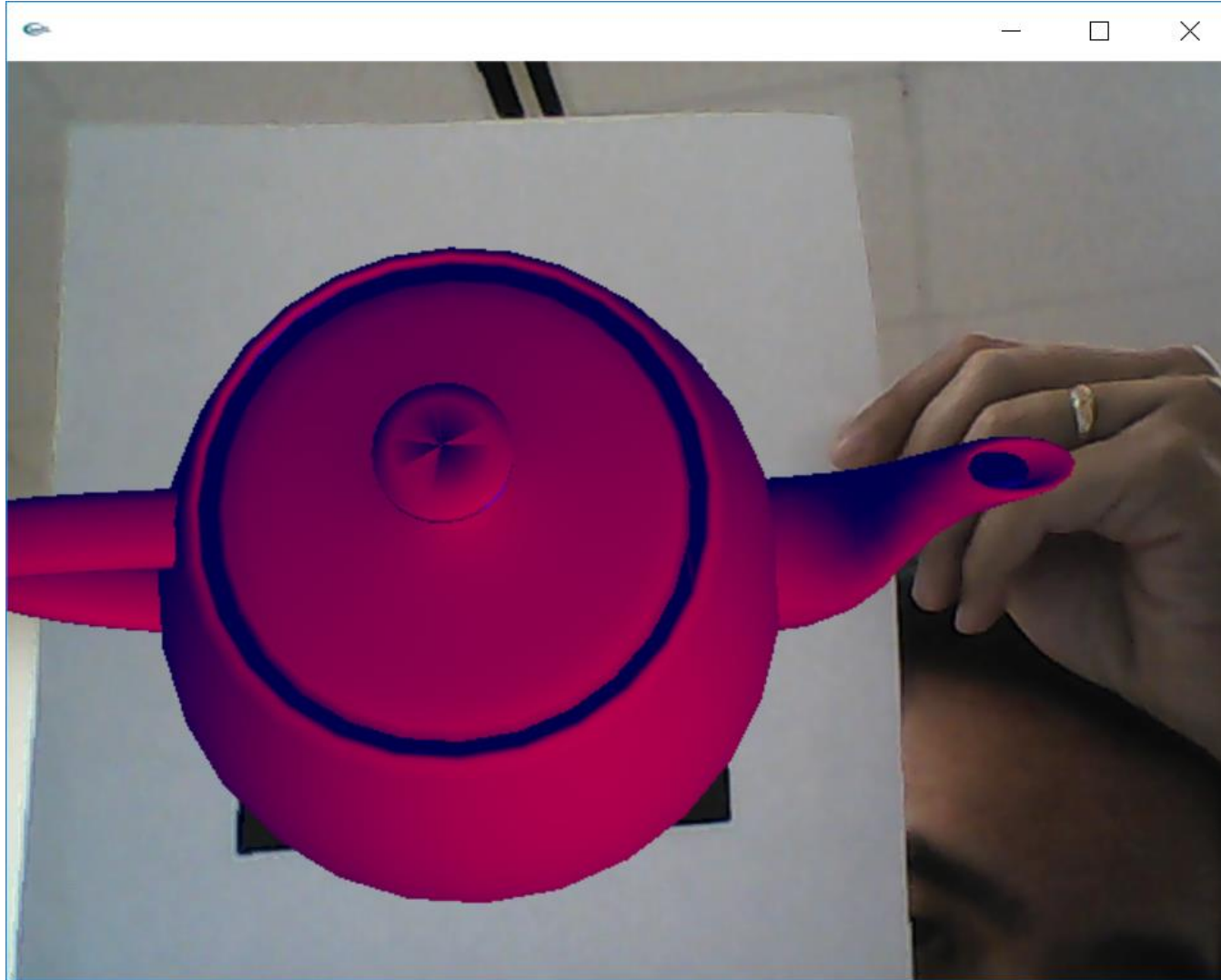
Compile the modified code and run it



Change the lighting

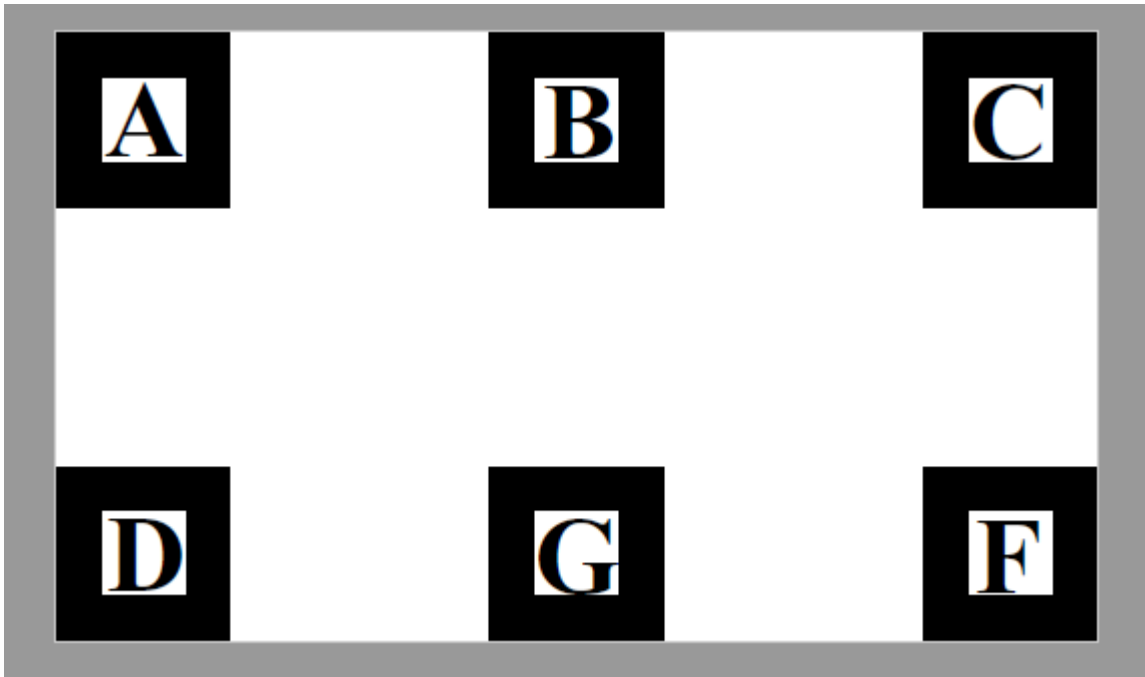


Compile the modified code and run it



Try with other examples















- Multi-marker



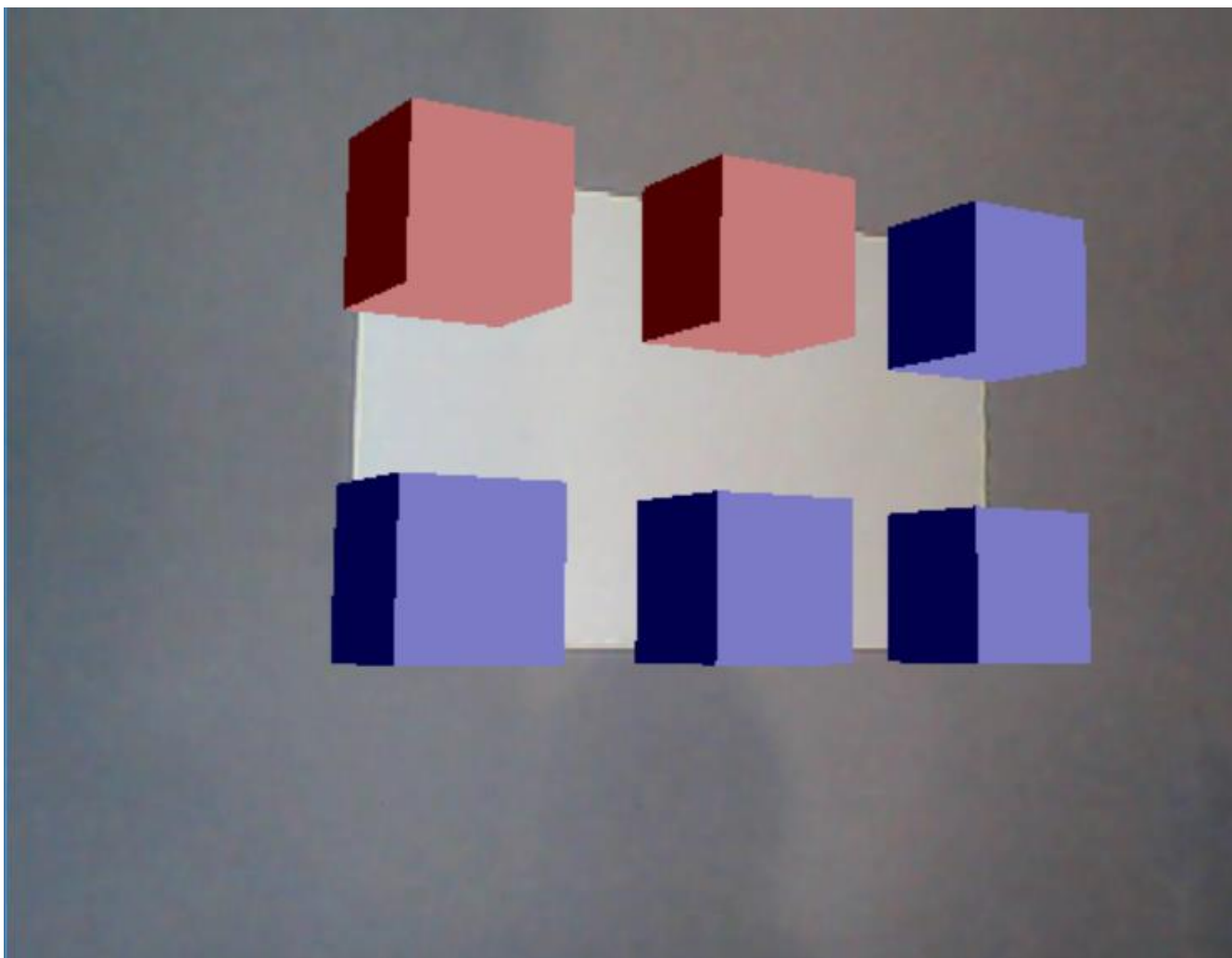
PC > Desktop > ARToolkit > bin

Name

Date modified

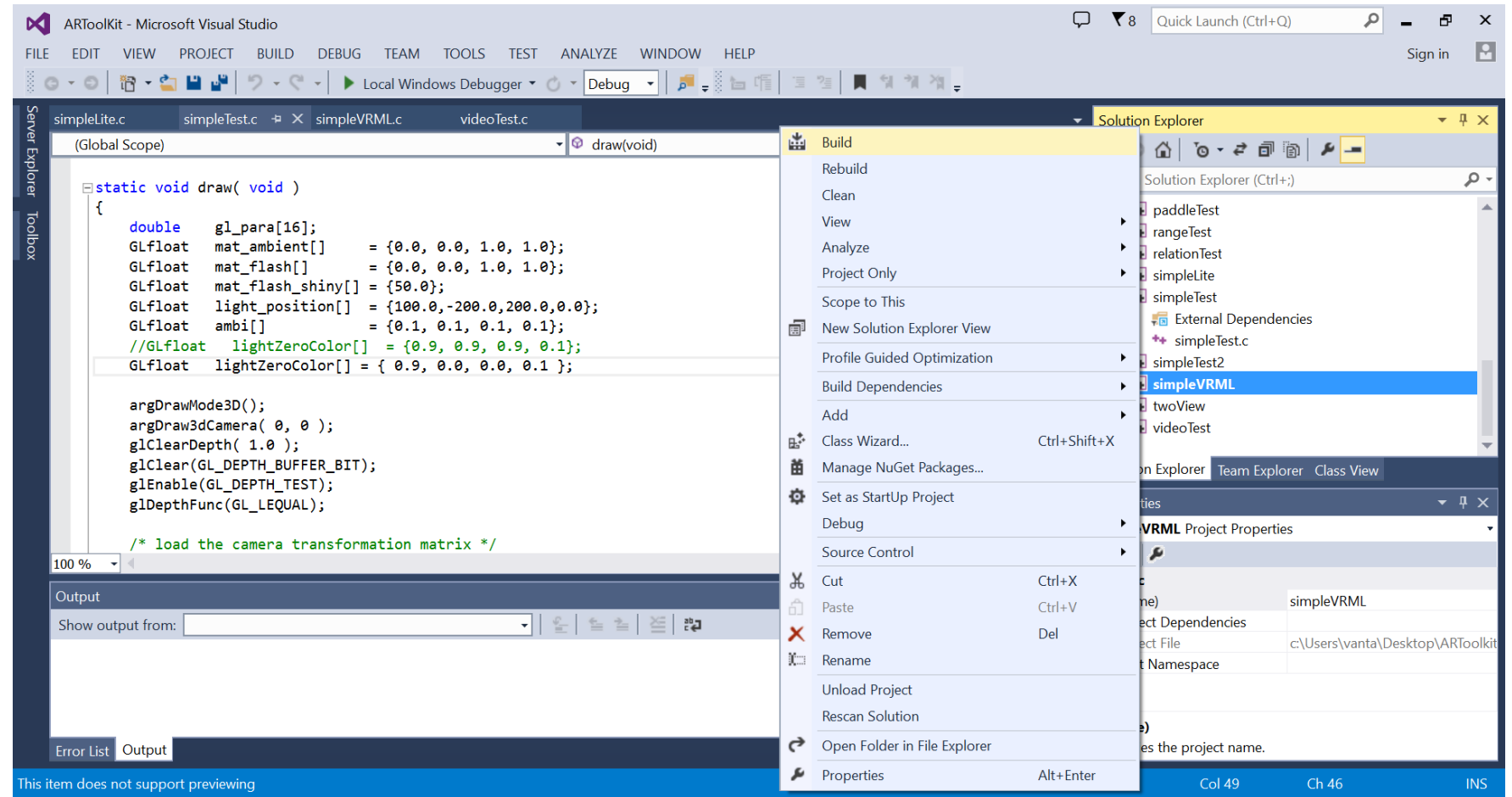
| | |
|--|--------------------|
|  mk_pattd.exe | 5/11/2016 12:25 AM |
|  mk_pattd.ilc | 5/11/2016 12:25 AM |
|  modeTestd.exe | 5/11/2016 12:25 AM |
|  modeTestd.ilc | 5/11/2016 12:25 AM |
|  msvcp71d.dll | 20/8/2016 8:39 PM |
|  msvcr71d.dll | 11/8/2016 11:48 AM |
|  multiTestd.exe | 5/11/2016 12:25 AM |
|  multiTestd.ilc | 5/11/2016 12:25 AM |
|  opengl32.dll | 28/8/2002 12:41 PM |
|  opticald.exe | 5/11/2016 12:25 AM |
|  opticald.ilc | 5/11/2016 12:25 AM |
|  paddleDemod.exe | 5/11/2016 12:25 AM |
|  paddleDemod.ilc | 5/11/2016 12:25 AM |
|  paddleInteractionTestd.exe | 5/11/2016 12:25 AM |

Try with other examples



Try with other examples

- simpleVRML
 - Compile the code



Try with other examples

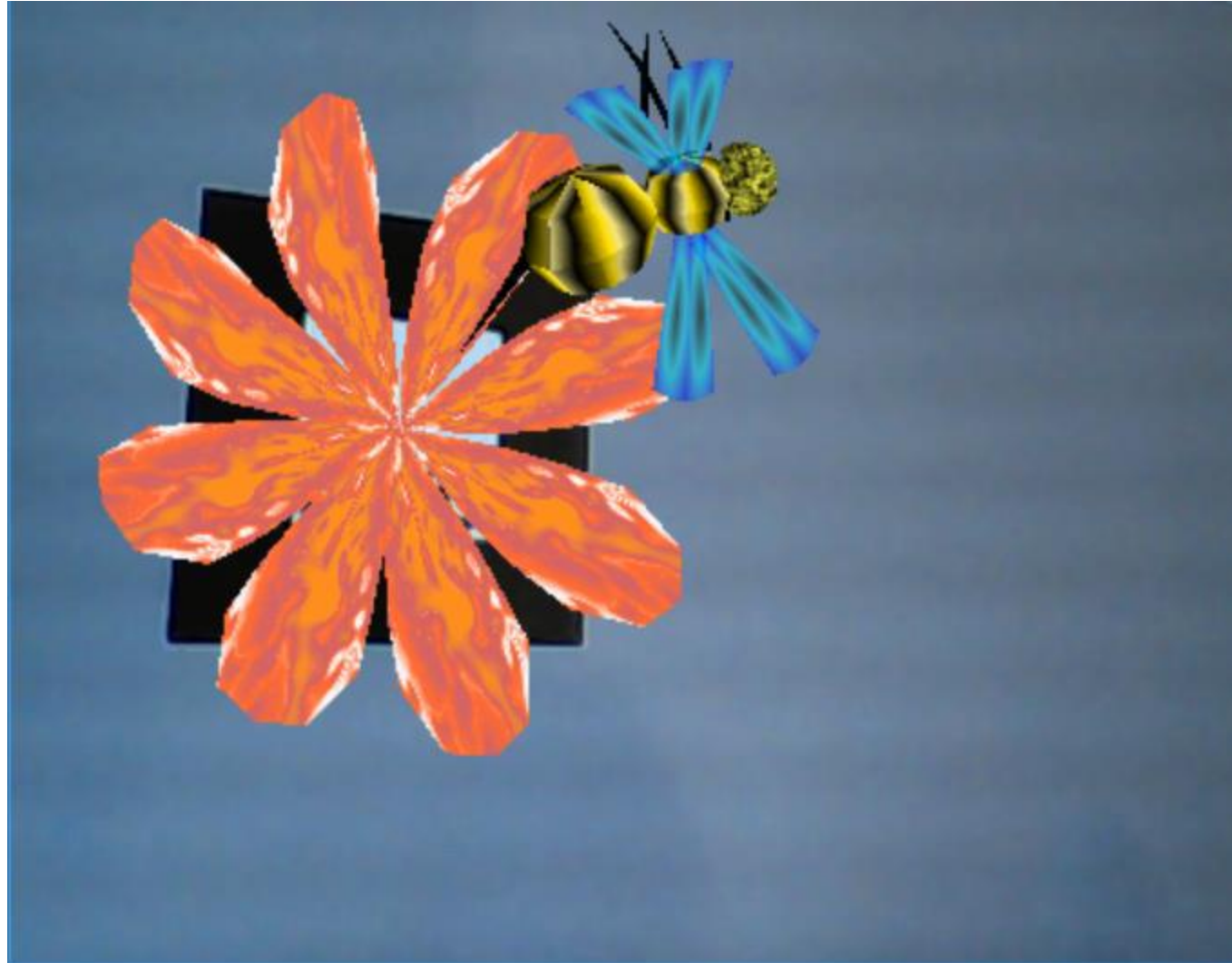
- simpleVRML



PC > Desktop > ARToolkit > bin

| Name | Date modified |
|----------------------------|--------------------|
| opengl32.dll | 28/8/2002 12:41 PM |
| opticald.exe | 5/11/2016 12:25 AM |
| opticald.ilc | 5/11/2016 12:25 AM |
| paddleDemod.exe | 5/11/2016 12:25 AM |
| paddleDemod.ilc | 5/11/2016 12:25 AM |
| paddleInteractionTestd.exe | 5/11/2016 12:25 AM |
| paddleInteractionTestd.ilc | 5/11/2016 12:25 AM |
| paddleTestd.exe | 5/11/2016 12:25 AM |
| paddleTestd.ilc | 5/11/2016 12:25 AM |
| rangeTestd.exe | 5/11/2016 12:25 AM |
| rangeTestd.ilc | 5/11/2016 12:25 AM |
| relationTestd.exe | 5/11/2016 12:25 AM |
| relationTestd.ilc | 5/11/2016 12:25 AM |
| simpleLited.exe | 5/11/2016 12:25 AM |
| simpleLited.ilc | 5/11/2016 12:25 AM |
| simpleTest2d.exe | 5/11/2016 12:25 AM |
| simpleTest2d.ilc | 5/11/2016 12:25 AM |
| simpleTestd.exe | 6/11/2016 10:29 AM |
| simpleTestd.ilc | 6/11/2016 10:29 AM |
| simpleVRMLd.exe | 5/11/2016 11:58 AM |
| simpleVRMLd.ilc | 5/11/2016 11:58 AM |
| twoViewd.exe | 5/11/2016 12:25 AM |
| twoViewd.ilc | 5/11/2016 12:25 AM |

Try with other examples



Q&A