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National Center for Ecological Analysis and Synthesis (NCEAS) Scientific Computing

Eclipse IDE Tutorial: Creating, building, and running a C++ project

- 1) From Eclipse toolbar, select File/New/Standard C++ Make Project.
- 2) Specify a Project name, and check the Use default location box to place the project source files into the default Eclipse workspace. The new project's name appears in the C/C++ Projects tab of the Eclipse project Explorer window (left side of Eclipse GUI).
- 3) To import the existing files to the new project: right-click in the Project Explorer window, then select Import/File System, then browse to the folder containing the C++ source files. Check the boxes next to the files you wish to import, and then click the Browse... button next to the Into Folder dialog. Select the name of the new C++ project that you just created. Click Finish to import the files. They will appear as entries in the Project Explorer file tree.
- 4) In the Project Explorer, expand (click the '+' sign) the file tree entries to see the class diagram schematic.
- 5) To configure the build environment, select Project/Clean from the Eclipse Toolbar. Click the 'Clean Projects Selected Below button, then check the box next to the new project name. Un-check the Start a build automatically box for now. Click OK.
- 6) Create a make file for the project and import it into the project. Here is an example makefile for the EarthSatelliteSimulation project.

```
-----  
EarthSatDriver.exe: EarthSatDriver.o EarthSat.o  
g++ -o EarthSatDriver.exe EarthSatDriver.o EarthSat.o
```

```
EarthSatDriver.o: EarthSatDriver.cpp  
g++ -c EarthSatDriver.cpp
```

```
EarthSat.o: EarthSat.cpp  
g++ -c EarthSat.cpp
```

```
all: EarthSatDriver.exe
```

```
clean:
```

```
-rm EarthSatDriver.exe EarthSatDriver.o EarthSat.o  
-----
```

7) To build the project executable, select Project/Build from the Eclipse Toolbar. This should compile the C++ source code files into object files (.obj) and then link the object files into a single executable (.exe) file. Do not proceed to the next step until C++ object code files and executable file specified in the makefile appear in the Project Explorer file tree.

8) To run the project executable, set up a Run configuration: from the Toolbar, select Run/Run... to invoke the Run configuration dialog. Select C/C++ Local Application from the left-hand menu tree, then complete the form entries: The active project name should appear in the Name: and Project: text boxes. Click the Search Project..... button next to the C/C++ Application text box, then select the name of the executable file that was just created. Select Run to run the application. Text output will appear in the Console view (at the bottom of the Eclipse IDE).

9) To use this run configuration on subsequent program runs, Select Run/Run Last Launched from the Eclipse Toolbar.

10) This project will appear in the Eclipse Package/Project Explorer window the next time you start Eclipse. All the information required to construct the project executable is stored in the default Eclipse workspace that you created.
