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CheckoutCrypto Canada

Introduction to Integrated Development Environments

By: Grant Hutchinson

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Overview

Integrated Development Environments(**IDE**s) are essential for any programmer, in order to develop any software for any language, on any platform. The average IDE usually consists of one or more of the following: text editor, interpreter, debugger, compiler, preview/virtual machine/server, file browser, console, plugins, remote/local connections, database administration.

Traditional IDEs have evolved through the generations to include sophisticated application frameworks for business and individuals to make use of that IDE for their own unique purpose. For example, Google created an eclipse plugin as the basis of their Android Developer Kit, IBM created a number of eclipse plugins for use with their iSeries servers e.g. WebSphere, Rational Developer(RDP), etc.

The basic IDE requires: a debugger, a text editor, a compiler. Some programmers simply prefer using vim, along with a compiler run from a linux terminal, to do their work.

The more advanced IDEs perform a large variety of tasks that otherwise would have been performed from hundreds of different commands from a terminal. This is why many people prefer the more advanced, more modifiable, GUI driven, IDEs. The setup is simple: 3-5 windows, each with a series of tabs, each with a designated purpose. Following standards, the left side tends to be the file browser, middle(largest) always the text editor(with options to full screen), bottom is the console, top is the toolbar, right window is optional and is usually used for alternative options or specifics.

Terminal

Every programmer must know how to use the terminal to compile their software, as it's how every IDE actually functions at their core. IDEs are simply calling compilers, debuggers, environment variables, from the terminal or operation system. What you need to understand is, this is how it's supposed to be done. You're supposed to author code in any text editor, then compile with the compiler itself, in a console/terminal. Not some GUI button that says “run”.

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You can quickly open a terminal, in Ubuntu, with CTRL+ALT+T hotkey.

Example:

```
cd ./someprogram
qmake
make
```

VIM

http://www.vim.org/download.php - installed by default in debian/ubuntu
GNU nano. A powerful, yet small, terminal-based, text editor, with advanced console, keyboard, script, functionality. Some people swear by it, can attest to the neat scripting abilities.

Example:

```
vi ./somefile.txt
```

note: If the file already exists, it will edit the file. Otherwise, vim will create a new file, only after you save it.

Nano

http://www.nano-editor.org/ - installed by default in debian/ubuntu
GNU nano. A small, terminal-based, text editor, with simplified keyboard commands.

Example:

```
nano ./somefile.txt
```

note: If the file already exists, it will edit the file. Otherwise, nano will create a new file, only after you save it.

Gedit

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https://wiki.gnome.org/Apps/Gedit - installed by default in debian/ubuntu
GNOME text editor. A simple, minimal, text editor with syntax highlighting.

Example:

```
gedit ./somefile.txt
```

note: If the file already exists, it will edit the file. Otherwise, gedit will create a new file, only after you save it.

Browsers

Firefox(installed by default) https://www.mozilla.org/en-US/firefox/new/
Chrome https://www.google.com/chrome/browser/desktop/

Use to test/preview/debug/design layouts, software, pages, results, etc.

In both browsers, you can simply Right Click -> Inspect Element, to view the sources, css, resources, console.

Eclipse

The most advanced, standardized, IDE, on the market. It's open-source and free. It has been forked, rereleased, as a standalone, many times, for use with a variety of frameworks and development environments.

When choosing which eclipse to download, know that any version of eclipse can simply install new plugins, to accomodate any language or framework.

https://www.eclipse.org/downloads/

While you may download a standlone PHP/Java/C/C++ eclipse, you can always modify it later by going to Help-> Install new software in the tool bar at the top of the screen. Simply paste in the URL of the plugin's repository and away you go.

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The following is a list of my preferred eclipse plugins, their purpose, installation, usage:

Android Development Tools
http://developer.android.com/sdk/installing/installing-adt.html

Add the following URL to the Help->Install new software window
https://dl-ssl.google.com/android/eclipse/
Name it: ADT
Accept all licenses and install.

The plugin contains: Android Virtual Device Manager, Android SDK Manager, Android XML GUI editor, Android Debugging and Syntax Highlighting Tools, etc.

Before you run it, you'll need to download and extract the Android SDK, not to be confused with the plugin you just installed, this is the Android source kit needed by the plugin itself; they're two different downloads.
https://developer.android.com/sdk/index.html#Other

Place the extracted Android SDK path into your Android Development Kit preferences(within eclipse). Wndow->Preferences, go to the Android tab on the left side, then browse the Location of your Android SDK (the one you extracted above).

Create a new Android Virtual Device, for any given virtual phone!
Create a new Android Application, File->New->Android Application
To emulate and install on device, Right click ->run as Android Application,

PHP Development Tools
https://eclipse.org/pdt/

Add the following URL to the Help->Install new software window
http://download.eclipse.org/tools/pdt/updates/latest/
Name it: PDT
Accept all licenses and install.

Add a PHP Project
Edit Window->preferences add your apache server and root path.
Set the run configuration, use the internal or external browser, set the executable,

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interpreter, debugger, etc.
Right Click-> Run as -> PHP Script or PHP Server

WebTools
http://eclipse.org/webtools/

Add the following URL to the Help->Install new software window
http://download.eclipse.org/webtools/repository/helios
Name it: WTP
Accept all licenses and install.

Ruby and Ruby on Rails

Install Aptana Studio 3
Add the following URL to the Help->Install new software window
http://d1iwq2e2xrohf.cloudfront.net/tools/studio/plugin/install/studio3/3.6.0.201407100643/
Name it: Aptana
Accept all licenses and install.

Install RadRails
Add the following URL to the Help->Install new software window
http://download.appcelerator.com/aptana/studio3/ruby/update/stable/
Name it: RadRails
Accept all licenses and install.

Netbeans

https://netbeans.org/downloads/
Packages for C/C++, Java, PHP, Groovy

To add other Netbeans plugins:

Go to **Tools -> Plugins**, make sure you have enabled the checkboxes, for each of update centres repositories, listed in the **settings** tab. Then simply hit reload catalog.

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Search or **Browse** popular Netbeans plugins. You can then automatically download/install/enable plugins, in addition to manual installation.

Ruby and Ruby on Rails
https://netbeans.org/features/ruby/index.html

QtCreator

For C/C++, HTML5, QtConsole, QtPlugin/widget development utilizing the Qt4 or Qt5 framework.

http://www.qt.io/download-open-source/

Download and install qtcreator, g++, qtbase5-dev, qt5-default, qt5-qmake, libqt5network5, libsqlite3-dev

Create a new project, ensure build environment is setup correctly.
Select the Qt version and other build arguments.

Dart Editor

```
sudo add-apt-repository ppa:hachre/dart
sudo apt-get update
sudo apt-get install dartsdk dartium git mongodb robomongo
```

https://www.dartlang.org/tools/editor/

Android Studio

http://developer.android.com/sdk/index.html

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