

MINECRAFT

Craft your World!



Learn to Code with Minecraft
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Environment Setup

- Sublime Text Editor is installed
- Java 7 is installed
- CraftBukkit (version 1.6.4-R2.0) is downloaded



Introduction to Command Line

\$ cd – change directory

\$ pwd – print working directory

\$ ls – list files in directory

\$ mkdir – make a new directory

\$ cp – copy file

\$ mv – move file

\$ rm – remove a file

```
joe@casper:~/minecraft-plugins$ cd code
joe@casper:~/minecraft-plugins/code$ pwd
/home/joe/minecraft-plugins/code
joe@casper:~/minecraft-plugins/code$ ls
HelloWorld  mkplugin.sh
joe@casper:~/minecraft-plugins/code$ mkdir TestPlugin
joe@casper:~/minecraft-plugins/code$ ls
HelloWorld  mkplugin.sh  TestPlugin
joe@casper:~/minecraft-plugins/code$ cp mkplugin.sh mkp.sh
joe@casper:~/minecraft-plugins/code$ ls
HelloWorld  mkplugin.sh  mkp.sh  TestPlugin
joe@casper:~/minecraft-plugins/code$ mv mkp.sh TestPlugin/
joe@casper:~/minecraft-plugins/code$ ls TestPlugin/
mkp.sh
joe@casper:~/minecraft-plugins/code$ rm TestPlugin/mkp.sh
joe@casper:~/minecraft-plugins/code$ ls TestPlugin/
joe@casper:~/minecraft-plugins/code$ rm -rf TestPlugin/
joe@casper:~/minecraft-plugins/code$ ls
HelloWorld  mkplugin.sh
joe@casper:~/minecraft-plugins/code$
```



Create Your Server (Part I)

- Go to home directory

```
joe@casper:~$ cd
```

- Make Directory "minecraft-plugins/server"

```
joe@casper:~$ mkdir -p minecraft-plugins/server
```

- Change Directory to "minecraft-plugins/server"

```
joe@casper:~$ cd minecraft-plugins
```

- Move downloaded craftbukkit.jar into folder

```
joe@casper:~/minecraft-plugins/server$ mv ~/Downloads/craftbukkit.jar .
```

* Note: Your craftbukkit.jar file may be in a different folder.

- Download start-minecraft-server.sh

```
~$ wget http://www.simplecupofjoe.com/downloads/start-minecraft-server.sh
```

- Make the downloaded script executable

```
joe@casper:~/minecraft-plugins/server$ chmod +x start-minecraft-server.sh
```

- Start server

```
joe@casper:~/minecraft-plugins/server$ ./start-minecraft-server.sh  
22:37:37 [INFO] Starting minecraft server version 1.6.4  
22:37:59 [INFO] Done (21.228s)! For help, type "help" or "?"
```



Create Your Server (Part II)

```
joe@casper:~$ cd
joe@casper:~$ mkdir -p minecraft-plugins/server
joe@casper:~$ cd minecraft-plugins
joe@casper:~/minecraft-plugins$ ls
server
joe@casper:~/minecraft-plugins$ cd server
joe@casper:~/minecraft-plugins/server$ mv ~/Downloads/craftbukkit.jar .
joe@casper:~/minecraft-plugins/server$ wget http://www.simplecupofjoe.com/downloads/start-minecraft-server.sh
--2014-01-26 22:36:50-- http://www.simplecupofjoe.com/downloads/start-minecraft-server.sh
Resolving www.simplecupofjoe.com (www.simplecupofjoe.com)... 173.255.216.38
Connecting to www.simplecupofjoe.com (www.simplecupofjoe.com)|173.255.216.38|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 111 [application/octet-stream]
Saving to: 'start-minecraft-server.sh'

100%[=====>] 111          --.-K/s   in 0s

2014-01-26 22:36:50 (17.4 MB/s) - 'start-minecraft-server.sh' saved [111/111]

joe@casper:~/minecraft-plugins/server$ ls
craftbukkit.jar  start-minecraft-server.sh
joe@casper:~/minecraft-plugins/server$ chmod +x start-minecraft-server.sh
joe@casper:~/minecraft-plugins/server$ ls -al
total 14972
drwxrwxr-x 2 joe joe      4096 Jan 26 22:36 .
drwxrwxr-x 3 joe joe      4096 Jan 26 22:34 ..
-rw-rw-r-- 1 joe joe 15295007 Jan 26 22:08 craftbukkit.jar
-rwxrwxr-x 1 joe joe      111 Jan 26 22:25 start-minecraft-server.sh
joe@casper:~/minecraft-plugins/server$ ./start-minecraft-server.sh
22:37:37 [INFO] Starting minecraft server version 1.6.4
22:37:59 [INFO] Done (21.228s)! For help, type "help" or "?"
>
```



Go Git?

- Download and install git
<http://git-scm.com/book/en/Getting-Started-Installing-Git>
- Signup for a GitHub Account at github.com (not required but, nice to have)

```
joe@casper:~$ git --version
git --version
git version 1.8.1.2
joe@casper:~$ git clone https://github.com/joedean/minecraft-plugins.git
git clone https://github.com/joedean/minecraft-plugins.git
Cloning into 'minecraft-plugins'...
remote: Counting objects: 9, done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 9 (delta 0), reused 6 (delta 0)
Unpacking objects: 100% (9/9), done.
joe@casper:~$ cd minecraft-plugins/server/
cd minecraft-plugins/server/
joe@casper:~/minecraft-plugins/server$ ls
ls
start-minecraft-server.sh
joe@casper:~/minecraft-plugins/server$ mv ~/Downloads/craftbukkit.jar .
mv ~/Downloads/craftbukkit.jar .
joe@casper:~/minecraft-plugins/server$ ./start-minecraft-server.sh
./start-minecraft-server.sh
23:09:52 [INFO] Starting minecraft server version 1.6.4
23:10:15 [INFO] Done (22.017s)! For help, type "help" or "?"
>
```



Server Commands

- Give op to your user (Server operator)

```
>op Daford  
op Daford  
23:38:45 [INFO] CONSOLE: Opped Daford
```

- Put server into creative mode
 - survival = 0 (default)
 - creative = 1
 - adventure = 2

```
>gamemode 1 Daford  
gamemode 1 Daford  
23:43:03 [INFO] CONSOLE: Set Daford's game mode to CREATIVE mode
```

- Stop server

```
>stop  
stop  
23:43:25 [INFO] CONSOLE: Stopping the server..
```

- Refer to this site for more server commands
http://wiki.bukkit.org/CraftBukkit_commands



Finite State Machines

- Let's have fun with our new server's and learn about “Finite State Machines”
- **Finite State Machine** = An abstract machine that can be in one or a finite number of states. The Machine is in only one state at at time.
 - **Current state** = The state that the machine is in at any given time
 - **Transition** = Changes from one state to another when initiated by a triggering event or condition.



Finite State Machines



MINECRAFT

Plugin Setup

```
joe@casper:~/minecraft-plugins$ ls
ls
README.md  server
joe@casper:~/minecraft-plugins$ mkdir code
mkdir code
joe@casper:~/minecraft-plugins$ cd code
cd code
joe@casper:~/minecraft-plugins/code$ wget http://www.simplecupofjoe.com/downloads/mkplugin.sh
wget http://www.simplecupofjoe.com/downloads/mkplugin.sh
--2014-01-26 23:58:25--  http://www.simplecupofjoe.com/downloads/mkplugin.sh
Resolving www.simplecupofjoe.com (www.simplecupofjoe.com)... 173.255.216.38
Connecting to www.simplecupofjoe.com (www.simplecupofjoe.com)|173.255.216.38|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2511 (2.5K) [application/octet-stream]
Saving to: 'mkplugin.sh'

100%[=====] 2,511      --.-K/s   in 0.001s

2014-01-26 23:58:25 (2.27 MB/s) - 'mkplugin.sh' saved [2511/2511]

joe@casper:~/minecraft-plugins/code$ ls
ls
mkplugin.sh
joe@casper:~/minecraft-plugins/code$ chmod +x mkplugin.sh
chmod +x mkplugin.sh
joe@casper:~/minecraft-plugins/code$ ls
ls
mkplugin.sh
joe@casper:~/minecraft-plugins/code$ ./mkplugin.sh HelloWorld
./mkplugin.sh HelloWorld
joe@casper:~/minecraft-plugins/code$ ls
ls
HelloWorld  mkplugin.sh
joe@casper:~/minecraft-plugins/code$ cd HelloWorld/
cd HelloWorld/
joe@casper:~/minecraft-plugins/code/HelloWorld$ ls
ls
bin  build.sh  dist  plugin.yml  src
joe@casper:~/minecraft-plugins/code/HelloWorld$
```



Creating your First Plugin

```
1 package helloworld;
2
3 import java.util.logging.Logger;
4 import org.bukkit.command.Command;
5 import org.bukkit.command.CommandSender;
6 import org.bukkit.entity.Player;
7 import org.bukkit.plugin.Plugin;
8 import org.bukkit.plugin.java.JavaPlugin;
9
10 public class HelloWorld extends JavaPlugin {
11     public static Logger log = Logger.getLogger("Minecraft");
12     public void onEnable() {
13         log.info("[HelloWorld] Start up.");
14     }
15     public void onReload() {
16         log.info("[HelloWorld] Server reloaded.");
17     }
18     public void onDisable() {
19         log.info("[HelloWorld] Server stopping.");
20     }
21
22     public boolean onCommand(CommandSender sender, Command command,
23                             String commandLabel, String[] args) {
24         if (commandLabel.equalsIgnoreCase("helloworld")) {
25             if (sender instanceof Player) {
26                 Player me = (Player)sender;
27                 // Put your code after this line:
28
29                 // ...and finish your code before this line.
30                 return true;
31             }
32         }
33         return false;
34     }
35 }
```

Create package

Imports Classes

Create class

Initialize Logger

Implement onEnable

Implement onReload

Implement onDisabled

Implement onCommand

Validate command label

Add new command
customization code

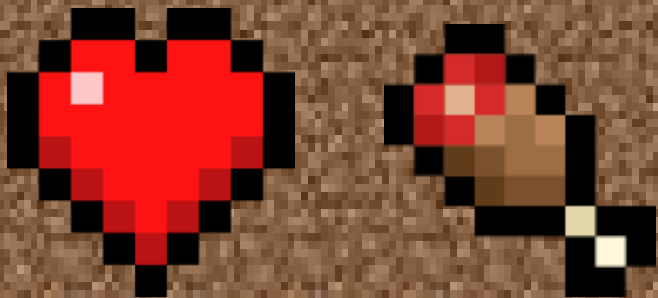
Return boolean val



Creating your First Plugin



HelloWorld



MINECRAFT

Cowabonga



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When Pigs Fly



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Cow Shooter



MINECRAFT

Q & A

