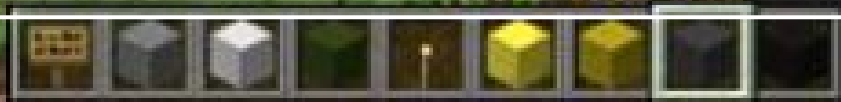
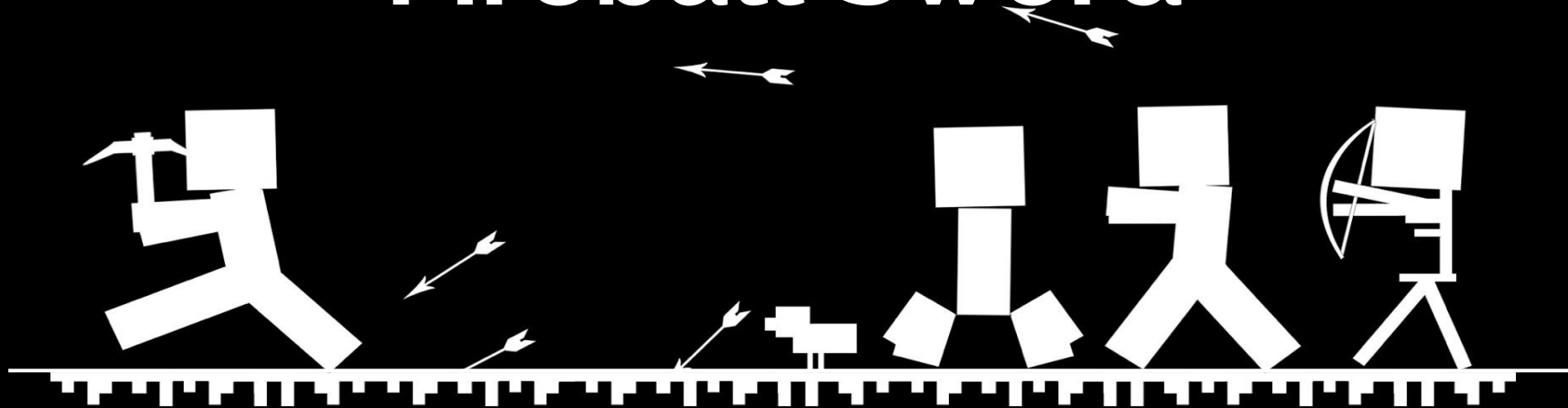

Writing Plugins in Minecraft with JavaScript

More Advanced Plugins



Fireball Sword



Goals For Our Plugin

Add a new file called `plugins/fireballSword.js`

Todo:

- Create a sword that shoots fireballs when swung
 - Fireballs should only destroy mobs (not blocks or yourself)
 - Special recipe to craft the sword
 - Only shoot fireballs at full health
-

```
var items = require('items');

function onArmSwing(event) {

    var player = event.player;

    var itemInHand = player.getItemHeld();

    If ( isFireballSword( itemInHand ) ) {

        player.chat('it works!');

    }

}
```

```
function isFireballSword(item) {

    if ( item && item.getType() ==

        items.diamondSword() ) {

        return true;

    }

    return false;

}

events.playerArmSwing(onArmSwing);
```

Arm Swing Event Hook

```
var items = require('items');
var entities = require('entities');
var cm = Packages.net.canarymod;
var factory = cm.Canary.factory();
var entityFactory = factory.entityFactory;

function shootFireball(player) {

    var entityType = entities.largefireball();

    var loc = player.location;

    var fireball = entityFactory.newEntity(entityType, loc);

    fireball.spawn();

}
```

```
function onArmSwing(event)
{
    ...
    player.chat('it works!');
    shootFireball(player);
    ...
}
```

Spawning the Fireball

```
function cartesianCoords( player ) {  
  
    var pitch = ( player.getPitch() + 90 ) * Math.PI / 180;  
  
    var rot = ( player.getRotation() + 90 ) * Math.PI / 180;  
  
    var x = Math.sin(pitch) * Math.cos(rot);  
  
    var y = Math.cos(pitch);  
  
    var z = Math.sin(pitch) * Math.sin(rot);  
  
    return [x, y, z];  
}
```

```
function shootFireball(player) {  
  
    ...  
  
    fireball.spawn();  
  
    fling( player, fireball, 3 );  
}  
  
function fling( player, entity, factor ) {  
  
    var coord = cartesianCoords(player);  
  
    var x = coord[0]; var y = coord[1]; var z = coord[2];  
  
    entity.moveEntity(x * factor, y + 0.5, z * factor);  
}
```

Flinging the Fireball

```
...
var entityFactory = factory.entityFactory;
var cmLocation = cm.api.world.position.Location;

function shootFireball(player) {

    var entityType = entities.largefireball();
    var loc = player.location;
    var loc = getBufferInFrontOfPlayer(player);

    ...
}
```

```
function getBufferInFrontOfPlayer(player) {

    var coord = cartesianCoords(player);

    var distance = 2;

    var dx = coord[0] * distance;

    var dy = coord[1] * distance;

    var dz = coord[2] * distance;

    var loc = player.location;

    var x = loc.getX() + dx;

    var y = loc.getY() + dy + 0.5;

    var z = loc.getZ() + dz;

    return new cmLocation(x, y, z);

}
```

Get the Block in Front of the Player

```
function shootFireball(player) {  
  
    ...  
  
    fireball.spawn();  
  
    /* prevent fireball from destroying blocks */  
  
    fireball.setPower(0);  
  
    fling( player, fireball, 3 );  
}
```

Don't Destroy Blocks

```
var cmDiamondSword = items.diamondSword(1);

var itemFactory = factory.itemFactory;

var cmEnchantment = cm.api.inventory.Enchantment.Type;

var cmLuck = itemFactory.newEnchantment(cmEnchantment.LuckOfTheSea,3);

cmDiamondSword.addEnchantments( [ cmLuck ] );

var fireballSwordRecipe = new Object();

fireballSwordRecipe.result = cmDiamondSword;

fireballSwordRecipe.shape = [ 'BDB',
                               'BDB',
                               'BSB' ];
```

```
fireballSwordRecipe.ingredients = {

    B: items.blazeRod(1),

    D: items.diamond(1),

    S: items.stick(1)

};

var recipes = require('recipes');

var recipe = recipes.create
(fireballSwordRecipe);

server.addRecipe( recipe );
```

Special Crafting Recipe

```
function isFireballSword(item) {  
  
    if ( item && item.getType() == items.diamondSword() ) {  
  
        var enchantment = item.getEnchantment();  
  
        If (enchantment && enchantment.getLevel() == 3 && enchantment.getType() == cmEnchantment.LuckOfTheSea) {  
  
            return true;  
  
        }  
  
    }  
  
    return false;  
  
}
```

Checking for the Recipe

```
function onArmSwing(event) {  
  
    var player = event.player;  
  
    var itemInHand = player.getItemHeld();  
  
    If ( player.getHealth() == 20 && isFireballSword( itemInHand ) ) {  
  
        shootFireball(player);  
  
    }  
  
}
```

Tie to Player Health

```
function shootFireball(player) {  
  
    ...  
  
    fling( player, fireball, 3 );  
  
    var threeSeconds = 3000;  
  
    setTimeout(function() { fireball.destroy(); }, threeSeconds);  
}
```

Disposing of Un-exploded fireballs

That's all!

Now you should have a fully
working fireball sword!
