First Item

Posted on June 20, 2018

Now that all of our basic setup is done, we get to move on to the fun stuff: adding content into the game. We'll start with a very basic item.

Begin by creating two new packages under `cubicoder.tutorialmod`: `item` and `init`. The `item` package is not strictly necessary yet, but it will hold custom items in the future, should you make any.

Create a class named `ModItems` in the `cubicoder.tutorialmod.init` package. This class stores references to all of our items in case we need to access them in the code. By using the `@ObjectHolder` annotation, we can have Forge automatically inject our items into the class by pulling them out of the registry.

```
package cubicoder.tutorialmod.init;

import cubicoder.tutorialmod.TutorialMod;
import net.minecraft.item.Item;
import net.minecraftforge.fml.common.registry.GameRegistry.ObjectHolder;

@ObjectHolder(TutorialMod.MODID)
public class ModItems {

        public static final Item FIRST_ITEM = null;

}
```

The mod id in the `@ObjectHolder` parameter simply tells Forge to inject matching items from our mod; putting `"minecraft"` would make it look for items from vanilla Minecraft. If we don't specify an `@ObjectHolder` annotation above the field declaration, it will take the name of the field, set it to lowercase, and use that as the registry name to be injecting from. So, in this case, we need to make sure the name of the field is `FIRST_ITEM`, since the mod id is automatically added. If you're curious or confused, read more on `@ObjectHolder` here (https://mcforge.readthedocs.io /en/latest/concepts/registries/#injecting-registry-values-into-fields).

Next, we need to actually register our items. Create an inner class in `ModItems` called `RegistryHandler`.

```
package cubicoder.tutorialmod.init;

import cubicoder.tutorialmod.TutorialMod;
import net.minecraft.item.Item;
import net.minecraftforge.event.RegistryEvent.Register;
import net.minecraftforge.fml.common.Mod.EventBusSubscriber;
import net.minecraftforge.fml.common.eventhandler.SubscribeEvent;
import net.minecraftforge.fml.common.registry.GameRegistry.ObjectHolder;

@ObjectHolder(TutorialMod.MODID)
public class ModItems {

        public static final Item FIRST_ITEM = null;

        @EventBusSubscriber(modid = TutorialMod.MODID)
        public static class RegistrationHandler {

                @SubscribeEvent
                public static void registerItems(Register<Item> event) {
                        final Item[] items = {
                                        new Item().setRegistryName(Tutori
                        };

                        event.getRegistry().registerAll(items);
                }

        }

}
```

Registration has changed in 1.12.2 from older versions of Minecraft Forge. Instead of calling `GameRegistry.register()`, there is now an event for each kind of registry. We subscribe to the event bus using `@EventBusSubscriber`, then provide a method for each event using `@SubscribeEvent`. In this method, we initialize our item while adding it to an array of items. Then, we use the `event.getRegistry().registerAll()` method to register every item in our item array. We also add the item to the Miscellaneous creative tab for easy access. Later, we'll learn how to add our own creative tab.

The translation key, like “pickaxeDiamond”, is used in language files and will translate into the name that appears onscreen, such as “Diamond Pickaxe” for English. **The translation key and the registry name of an item should always be the same for mods, even though vanilla doesn’t do it this way.** We will be covering language files in a later tutorial.

The registry name is the name under which the item is registered into the Forge Registry. This is the name that would appear in a `/give` command, such as `/give @s minecraft:diamond_pickaxe`. (Obviously, it’s used for many other things as well.) For more information on the Forge Registry, read the official documentation on it (https://mcforge.readthedocs.io/en/latest/concepts/registries/).

The mod id is added to the translation key to protect against namespace collisions. For example, two different mods might both add a copper ingot and set its translation key to `copper_ingot`. Without adding the mod id, the different items appear to be one. The mod id is also added to the registry name in the `setRegistryName()` method.

To name the items, you could also create a static utility method somewhere that takes in an `Item` and a `String` and calls the two naming methods (`setRegistryName()` and `setTranslationKey()`) on the `Item`. The method should return the `Item`. Your call would then look like this:

```
//...

final Item[] items = {
                RegistryUtil.setItemName(new Item(), "first_item").setCre
};

//...
```

We could run the game now and have a working item, but it would have the ugly default pink-and-black checkboard texture. Instead, we will add a model to the item.

Create a new class called `ModelRegistrationHandler` in the `cubicoder.tutorial.client` package.

```
package cubicoder.tutorialmod.client;

import cubicoder.tutorialmod.TutorialMod;
import cubicoder.tutorialmod.init.ModItems;
import net.minecraft.client.renderer.block.model.ModelResourceLocation;
import net.minecraft.item.Item;
import net.minecraftforge.client.event.ModelRegistryEvent;
import net.minecraftforge.client.model.ModelLoader;
import net.minecraftforge.fml.common.Mod.EventBusSubscriber;
import net.minecraftforge.fml.common.eventhandler.SubscribeEvent;
import net.minecraftforge.fml.relauncher.Side;

@EventBusSubscriber(value = Side.CLIENT, modid = TutorialMod.MODID)
public class ModelRegistrationHandler {

	@SubscribeEvent
	public static void registerModels(ModelRegistryEvent event) {
		registerModel(ModItems.FIRST_ITEM, 0);
	}

	private static void registerModel(Item item, int meta) {
		ModelLoader.setCustomModelResourceLocation(item, meta,
				new ModelResourceLocation(item.getRegistr
	}

}
```

This subscribes to the `ModelRegistryEvent` and tells the Forge model loader to look for the item model in a certain directory. Note that the `value = Side.CLIENT` parameter in the `@EventBusSubscriber` annotation ensures that this only happens on the client side. This is because only the client side needs to know about model information. The Forge official documentation has a great resource about the difference between client and server in modding (https://mcforge.readthedocs.io /en/latest/concepts/sides/).

In our case, the model directory will be `assets/tutorialmod/models/item`. This folder goes in the `src/main/resources` folder. Also, in the same place, create the `assets/tutorialmod/textures/items` folder. This is where all our item textures will be stored.

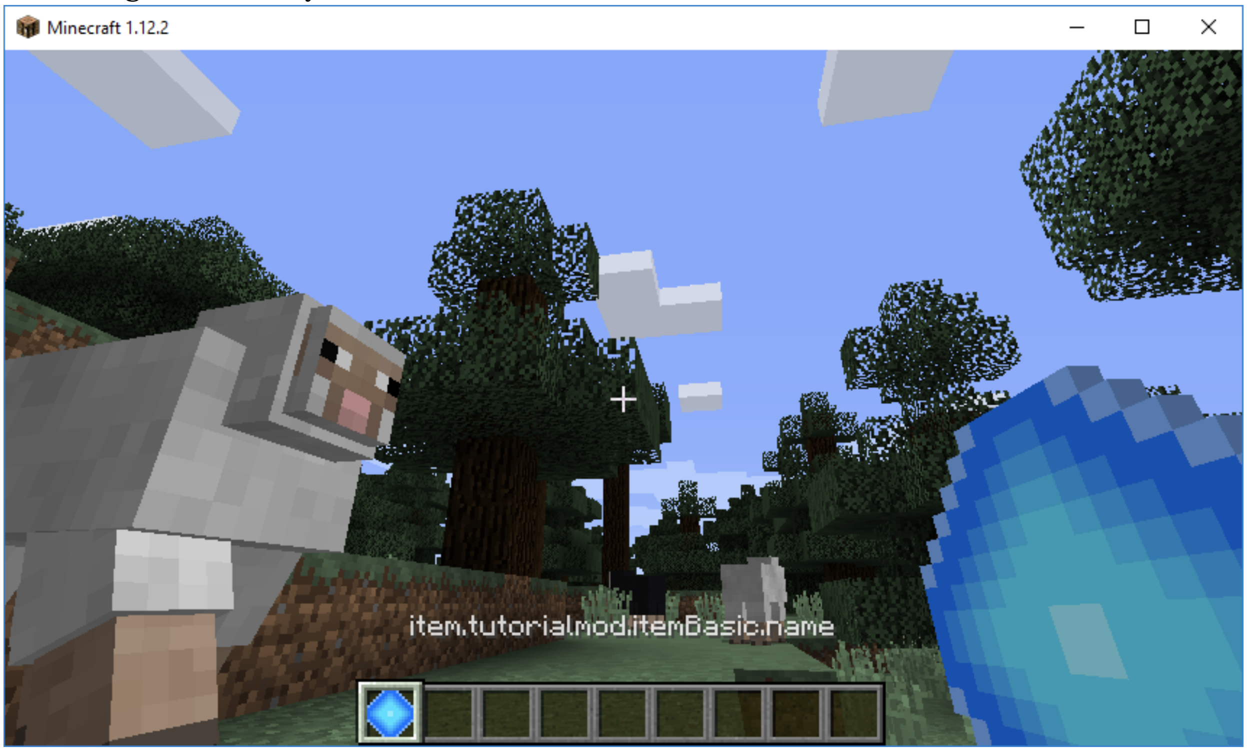
Models in Minecraft are done using JSON files. Create an untitled text file in `assets/tutorialmod/models/item` and name it `first_item.json`.

```
{
    "parent": "item/generated",
    "textures": {
        "layer0": "tutorialmod:items/first_item"
    }
}
```

The `parent` line tells what model this model should be based off of. For this example, this model will inherit all of the features of the `item/generated` model that Minecraft provides. The `textures` block tells Forge where it should look for the texture.

Your item's texture, called `first_item.png`, goes in the `assets/tutorialmod/textures/items` folder.

Run the game to see your custom item in the Miscellaneous creative tab!



Important Links for Items

https://mcforge.readthedocs.io/en/latest/items/items/

https://mcforge.readthedocs.io/en/latest/concepts/registries/

https://mcforge.readthedocs.io/en/latest/concepts/sides/

https://mcforge.readthedocs.io/en/latest/models/using/#item-models

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