Creating Your Own NPC in Project Zomboid with PZNS

What You Need

- Project Zomboid the game by The Indie Stone
  - Steam Store page: https://steamcommunity.com/app/108600
- PZNS Framework installed in game and activated *before* your NPC mod.
  - Steam Workshop page
    - https://steamcommunity.com/sharedfiles/filedetails/?id=3001908830
  - GitHub
    - https://github.com/shadowhunter100/PZNS
- A working text editor that has
  - I highly recommend using Visual Studio Code from Microsoft
  - https://code.visualstudio.com/download
  - *All example images will be using Visual Studio Code*
- Other text editors such as notepad++ or Lime Text will also work just fine, but I will not provide instructions using them.
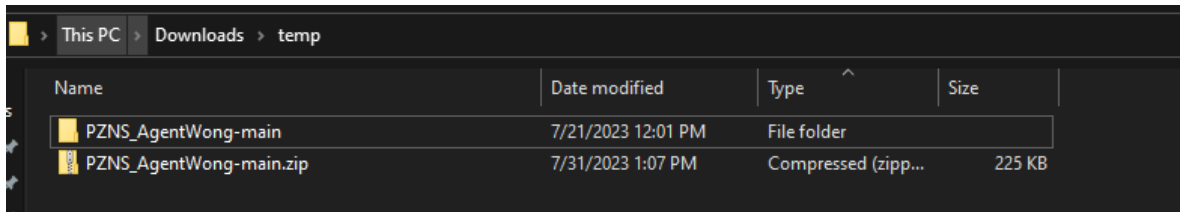
Get the Standalone "Agent Wong" Example as the Template

- Visit the GitHub - https://github.com/shadowhunter100/PZNS_AgentWong
 Download the code files as ZIP.
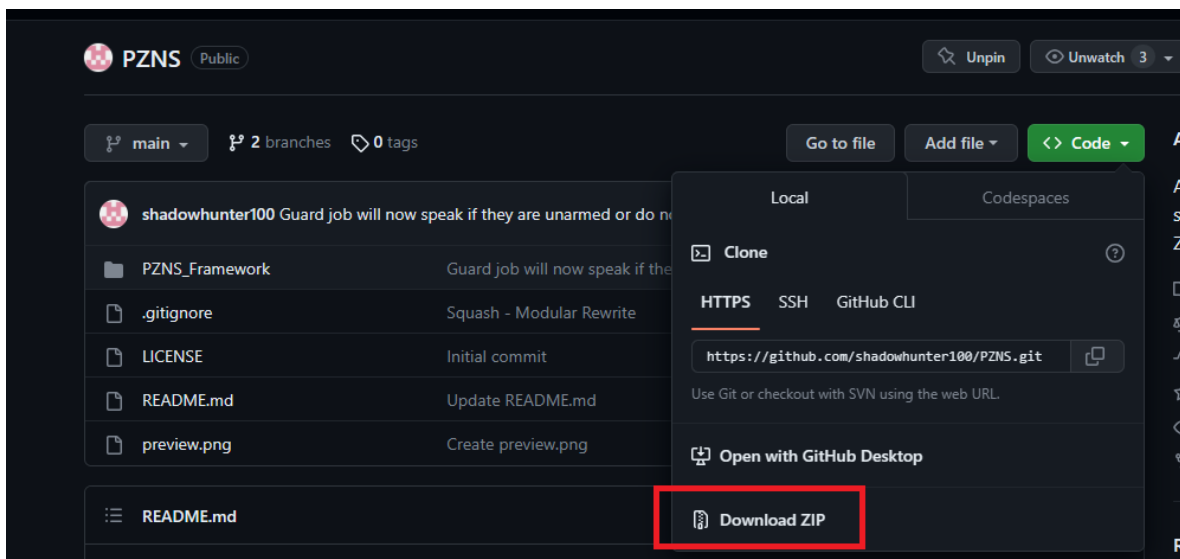
Working Locally with the Code Files

1. In wherever you download the zip file to, unzip/extract it to wherever you intend to work on the mod. In this example, it's in the download/temp folder.
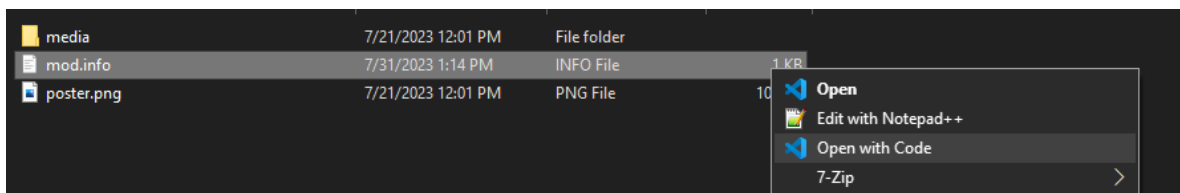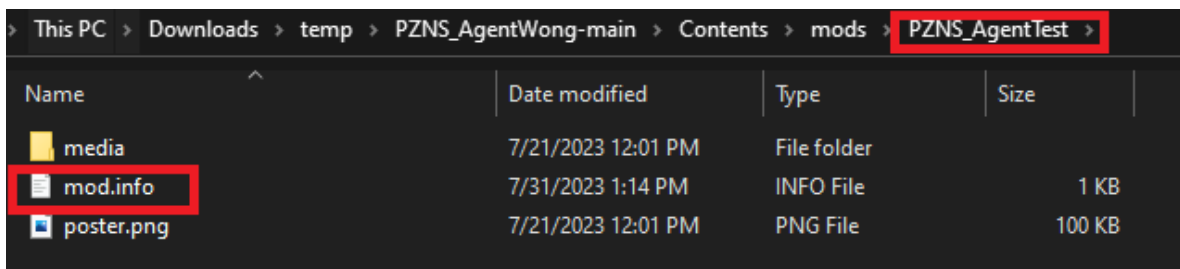

2. Click into the folders you are in the folder '**Contents/mods/'**
   a. Rename the 'PZNS_AgentWong' folder into whatever you need, ideally unique and easy to identify.

   In this example, the new mod is simply 'PZNS_AgentTest'
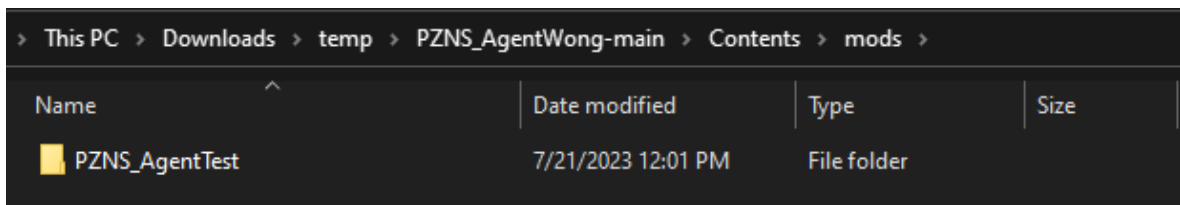
3. Now go into the renamed folder and open mod.info with your text editor of choice.

4. Replace the 'name', 'id', and 'description' as needed
   *– THIS IS CRITICAL IF YOU ARE UPLOADING TO THE STEAM WORKSHOP*


```
C: > Users >          > Downloads > temp > PZNS_AgentWong-main > Contents > mods > PZNS_AgentTest >  ☰ mod.info
1  name=PZNS_AgentWong
2  poster=poster.png
3  id=PZNS_AgentWong
4  description=Project Zomboid NPC Spawning Framework - Agent Wong in Rosewood Fire Department
5  url=https://github.com/shadowhunter100/PZNS_AgentWong
6  versionMin=41.1
7  require=PZNS_Framework
```

```
C: > Users >          > Downloads > temp > PZNS_AgentWong-main > Contents > mods > PZNS_AgentTest >  ☰ mod.info
1  name=PZNS_AgentTest
2  poster=poster.png
3  id=PZNS_AgentTest
4  description=Project Zomboid NPC Spawning Framework - Agent Test for creating NPCs
5  url=https://github.com/shadowhunter100/PZNS_AgentWong
6  versionMin=41.1
7  require=PZNS_Framework
```

5. Save the mod.info file and going into the media folder, open the 'lua' folder with Visual Studio Code.
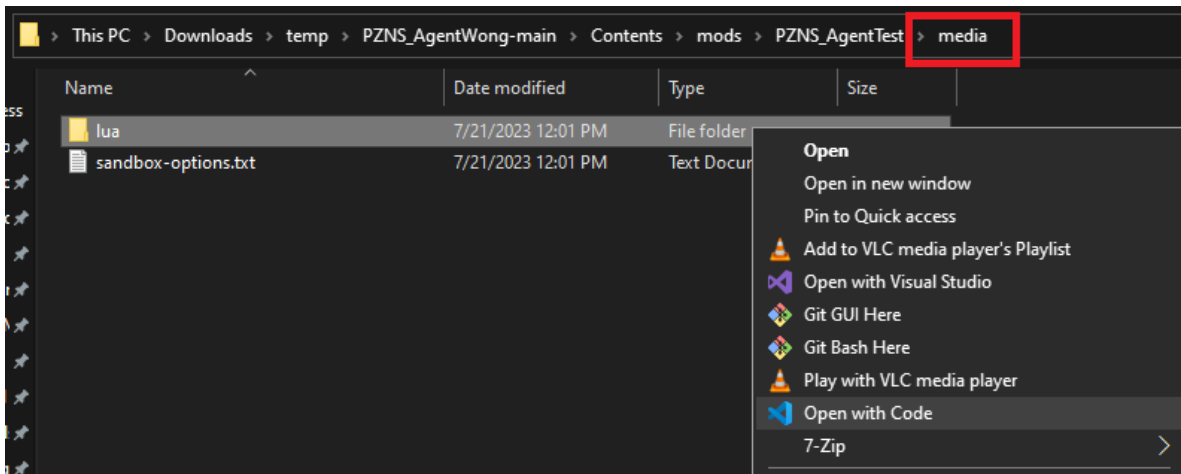
6. This is what you should see when the folder is open.
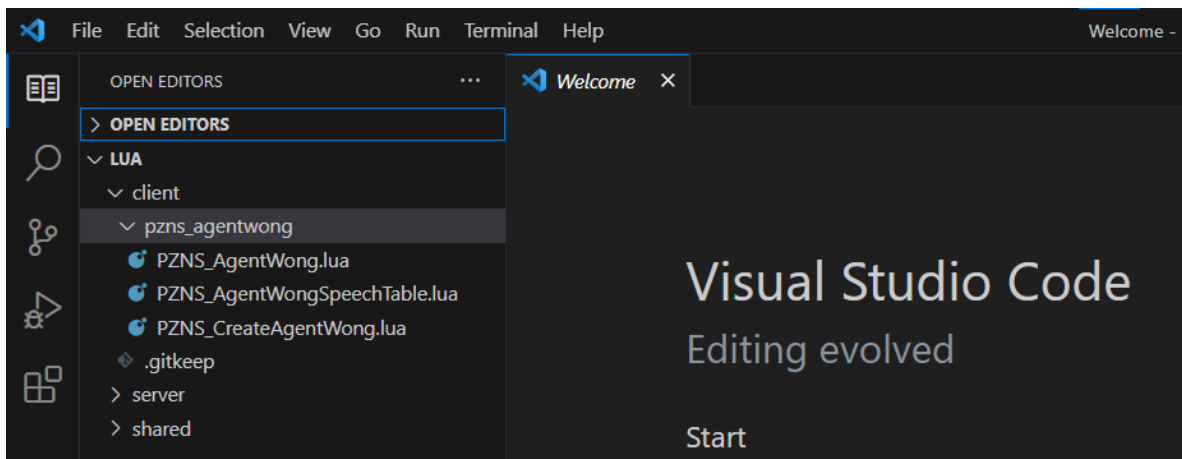
Making the Template Mod Your Own (Folder and Files)

1. Start off by renaming the folder, files, and functions/variables.

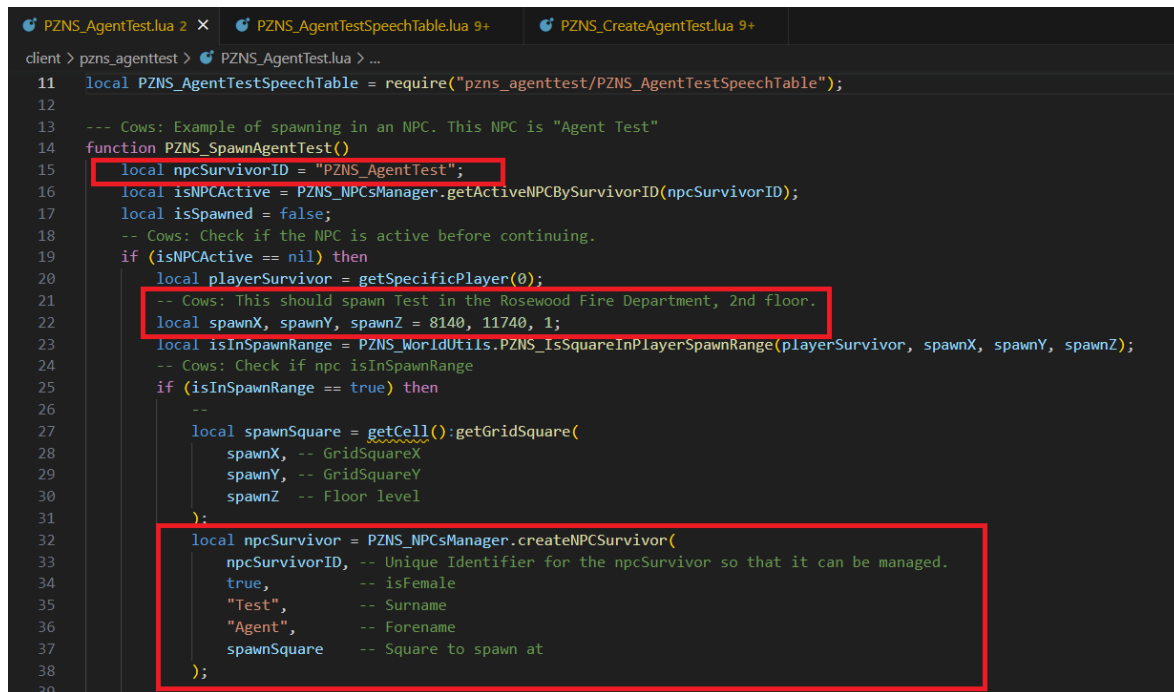Here is the check list (case-sensitive).

- Folder 'pzns_agentwong' → 'pzns_agenttest'
- PZNS_AgentWong → PZNS_AgentTest
- PZNS_AgentWongSpeechTable → PZNS_AgentTestSpeechTable
    - *Keep in mind the SpeechTable is OPTIONAL if you don't want to write your own text dialogue.*
- PZNS_CreateAgentTest → PZNS_CreateAgentTest
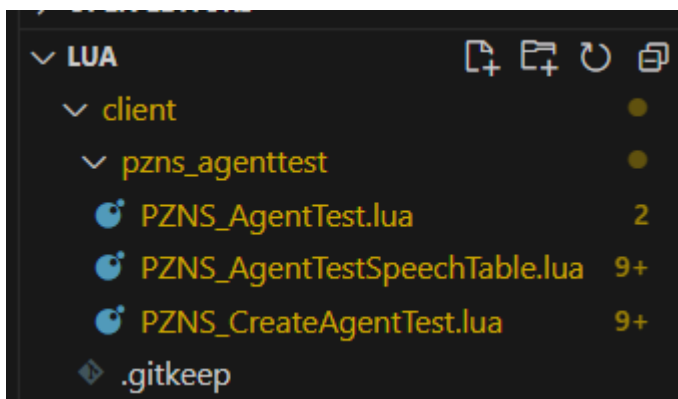
Making the Template Mod Your Own (Functions and Variables)

In the PZNS_AgentTest.lua file

1. Update the **npcSurvivorID** into whatever string that can be identified by the framework as unique. In my (cows) case, the NPCs are prefixed with "PZNS_%firstnamelastname%"

```lua
local PZNS_AgentTestSpeechTable = require("pzns_agenttest/PZNS_AgentTestSpeechTable");

--- Cows: Example of spawning in an NPC. This NPC is "Agent Test"
function PZNS_SpawnAgentTest()
    local npcSurvivorID = "PZNS_AgentTest";
    local isNPCActive = PZNS_NPCsManager.getActiveNPCBySurvivorID(npcSurvivorID);
    local isSpawned = false;
    -- Cows: Check if the NPC is active before continuing.
    if (isNPCActive == nil) then
        local playerSurvivor = getSpecificPlayer(0);
        -- Cows: This should spawn Test in the Rosewood Fire Department, 2nd floor.
        local spawnX, spawnY, spawnZ = 8140, 11740, 1;
        local isInSpawnRange = PZNS_WorldUtils.PZNS_IsSquareInPlayerSpawnRange(playerSurvivor, spawnX, spawnY, spawnZ);
        -- Cows: Check if npc isInSpawnRange
        if (isInSpawnRange == true) then
            --
            local spawnSquare = getCell():getGridSquare(
                spawnX, -- GridSquareX
                spawnY, -- GridSquareY
                spawnZ  -- Floor level
            );
            local npcSurvivor = PZNS_NPCsManager.createNPCSurvivor(
                npcSurvivorID, -- Unique Identifier for the npcSurvivor so that it can be managed.
                true,          -- isFemale
                "Test",        -- Surname
                "Agent",       -- Forename
                spawnSquare    -- Square to spawn at
            );
```

2. For best practice, I highly recommend adding a Prefix (author name or mod acronym) and underscore + NPC name to identify NPCs.
    a. Something like this: %AuthorName_%AuthorNPC = "Chuck_ChuckNPCName"
3. Then change **spawnX, spawnY, spawnZ** to wherever you want the NPC to be.
    If you want the NPC to spawn at the player square, use 'getSpecificPlayer(0):getSquare()' instead of spawnSquare.
4. Make sure to change the Surname and Forename to your needs.

Customizing the NPC

At this point, your NPC is ready to spawn, but you can set up the skills, stats, and starting backpack.

```
39
40  v    if (npcSurvivor ~= nil) then
41          PZNS_UtilsNPCs.PZNS_SetNPCSpeechTable(npcSurvivor, PZNS_AgentTestSpeechTable); -- Cows: Speech table is OPTIONAL, remove/comment out this li
42          PZNS_UtilsNPCs.PZNS_AddNPCSurvivorPerkLevel(npcSurvivor, "Strength", 5);
43          PZNS_UtilsNPCs.PZNS_AddNPCSurvivorPerkLevel(npcSurvivor, "Fitness", 5);
44          PZNS_UtilsNPCs.PZNS_AddNPCSurvivorPerkLevel(npcSurvivor, "Aiming", 5);
45          PZNS_UtilsNPCs.PZNS_AddNPCSurvivorPerkLevel(npcSurvivor, "Reloading", 5);
46          PZNS_UtilsNPCs.PZNS_AddNPCSurvivorTraits(npcSurvivor, "Lucky");
47          -- Cows: Setup npcSurvivor outfit... Example mod patcher check
48          -- "ada_wong" is a costume mod created/uploaded by "Satispie" at https://steamcommunity.com/sharedfiles/filedetails/?id=2908872385
49  v        if (PZNS_DebuggerUtils.PZNS_IsModActive("ada_wong") == true) then
50              PZNS_UtilsNPCs.PZNS_AddEquipClothingNPCSurvivor(npcSurvivor, "Base.ada_wong");
51  v        else
52              -- Cows: Else use vanilla assets
53              PZNS_UtilsNPCs.PZNS_AddEquipClothingNPCSurvivor(npcSurvivor, "Base.Vest_DefaultTEXTURE");
54              PZNS_UtilsNPCs.PZNS_AddEquipClothingNPCSurvivor(npcSurvivor, "Base.Skirt_Mini");
55              PZNS_UtilsNPCs.PZNS_AddEquipClothingNPCSurvivor(npcSurvivor, "Base.Shoes_ArmyBoots");
56          end
57          PZNS_UtilsNPCs.PZNS_AddItemToInventoryNPCSurvivor(npcSurvivor, "Base.HuntingKnife");
58          PZNS_UtilsNPCs.PZNS_AddEquipWeaponNPCSurvivor(npcSurvivor, "Base.Pistol");
59          -- Cows: Set the job...
60          PZNS_UtilsNPCs.PZNS_SetNPCJob(npcSurvivor, "Guard");
61          -- Cows: Begin styling customizations...
62          PZNS_UtilsNPCs.PZNS_SetNPCHairModel(npcSurvivor, "F_Agent");
63          PZNS_UtilsNPCs.PZNS_SetNPCHairColor(npcSurvivor, 0.105882354, 0.09019608, 0.08627451);
64          PZNS_UtilsNPCs.PZNS_SetNPCSkinTextureIndex(npcSurvivor, 1);
65          PZNS_UtilsNPCs.PZNS_SetNPCSkinColor(npcSurvivor, 1.0, 1.0, 1.0, 1.0);
66          PZNS_UtilsDataNPCs.PZNS_SaveNPCData(npcSurvivorID, npcSurvivor);
67          isSpawned = true;
68      end
69  end
```

COMMENT OUT OR REMOVE THE SPEECH TABLE LINE IF YOU DO NOT HAVE CUSTOM SPEECH

```
41   💡        PZNS_UtilsNPCs.PZNS_SetNPCSpeechTable(npcSurvivor, PZNS_AgentTestSpeechTable); -- Cows: Speech table is OPTIONAL, remove/comment out this li
```

1. I will not cover the character customization details. Because the customization details and options are far more than what is actually needed for NPCs to work. Suffice to say, the more stuff you want, the more work you need to put in. Otherwise use a model replacer item as I did in the example(s).

Custom SpeechTable

The most time-consuming aspect of custom NPCs…

1. Remember to rename the variable to match what was supposed to be imported and referenced in the **PZNS_AgentTest.lua** (whatever you named your NPC file to be).
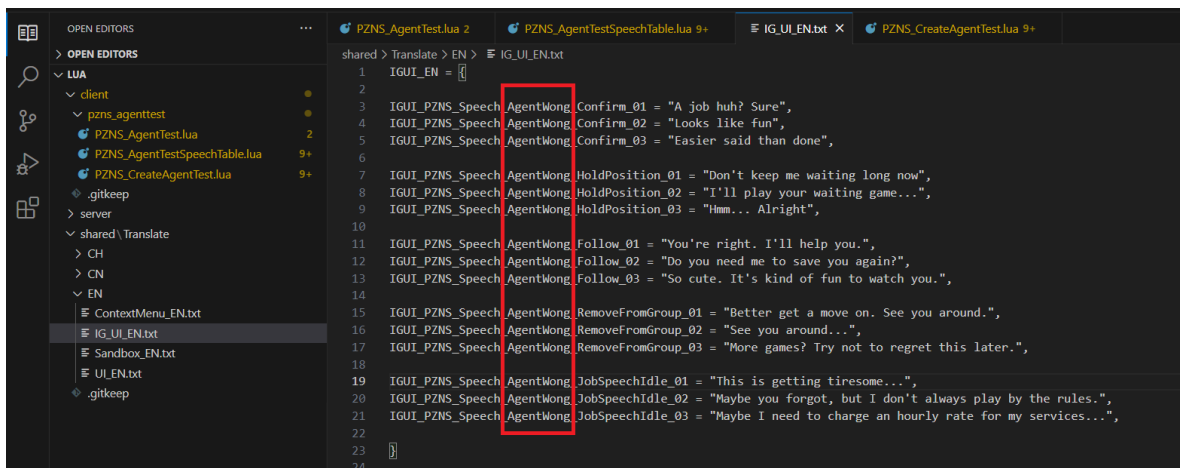
```
10
11    local PZNS_AgentTestSpeechTable = require("pzns_agenttest/PZNS_AgentTestSpeechTable");
12
```

```
39            --
40            if (npcSurvivor ~= nil) then
41                PZNS_UtilsNPCs.PZNS_SetNPCSpeechTable(npcSurvivor, PZNS_AgentTestSpeechTable); -- Cows: Speech table is OPTIONAL, remove/c
```

```
client > pzns_agenttest >  PZNS_AgentTestSpeechTable.lua > {} PZNS_AgentWongSpeechTable
 1    local PZNS_AgentWongSpeechTable = {};
 2
 3    -- Cows: Note that the translation files are all inside the "shared/Translate" folder, specifically referencing the "IG_UI_xx.txt" file.
 4    PZNS_AgentWongSpeechTable.PZNS_OrderConfirmed = {
 5        getText("IGUI_PZNS_Speech_AgentWong_Confirm_01"),
 6        getText("IGUI_PZNS_Speech_AgentWong_Confirm_02"),
 7        getText("IGUI_PZNS_Speech_AgentWong_Confirm_03"),
 8    };
 9
10    PZNS_AgentWongSpeechTable.PZNS_OrderSpeechHoldPosition = {
11        getText("IGUI_PZNS_Speech_AgentWong_HoldPosition_01"),
12        getText("IGUI_PZNS_Speech_AgentWong_HoldPosition_02"),
13        getText("IGUI_PZNS_Speech_AgentWong_HoldPosition_03"),
14    };
15
16    PZNS_AgentWongSpeechTable.PZNS_OrderSpeechFollow = {
17        getText("IGUI_PZNS_Speech_AgentWong_Follow_01"),
18        getText("IGUI_PZNS_Speech_AgentWong_Follow_02"),
19        getText("IGUI_PZNS_Speech_AgentWong_Follow_03"),
20    };
21
22    PZNS_AgentWongSpeechTable.PZNS_JobSpeechRemoveFromGroup = {
23        getText("IGUI_PZNS_Speech_AgentWong_RemoveFromGroup_01"),
24        getText("IGUI_PZNS_Speech_AgentWong_RemoveFromGroup_02"),
25        getText("IGUI_PZNS_Speech_AgentWong_RemoveFromGroup_03"),
26    };
27
28    PZNS_AgentWongSpeechTable.PZNS_JobSpeechIdle = {
29        getText("IGUI_PZNS_Speech_AgentWong_JobSpeechIdle_01"),
30        getText("IGUI_PZNS_Speech_AgentWong_JobSpeechIdle_02"),
31        getText("IGUI_PZNS_Speech_AgentWong_JobSpeechIdle_03"),
32    };
33
34    return PZNS_AgentWongSpeechTable;
35
```

2. Now you need to open the translation file(s) (if you care about other languages, update them as needed, otherwise remove them from the mod).

3. English translation Example, rename the 'AgentWong' to 'AgentTest'

4. Obviously, replace the double quote "" text after each variable as needed for your NPC's customization.

Creating / Spawning the NPC in-game

1. Double check and replace all **AgentWong** reference(s) as needed.
2. Again, if you have no custom speech, comment out or remove all functions related to speech.

```
6  ------------------------------------- End Framework Requirements -------------------------------------
7  require("pzns_agenttest/PZNS_AgentTest");
8  local PZNS_AgentTestSpeechTable = require("pzns_agenttest/PZNS_AgentTestSpeechTable");
9
10 local isFrameWorkIsInstalled = false;
11 local isAgentTestSpawned = false;
12
13 -- Cows: with the recent sandbox options update, users can use the sandbox option to clear ALL NPCs needs hourly. Only use this function if you want to override the sandbox optio
14 local function clearNPCsNeeds()
15     local PZNS_AgentTest = "PZNS_AgentTest";
16     local agentTest = PZNS_NPCsManager.getActiveNPCBySurvivorID(PZNS_AgentTest);
17     PZNS_UtilsNPCs.PZNS_ClearNPCAllNeedsLevel(agentTest);
18 end
19
20 --- Cows: Automatically Re-set the custom npc speech table, this is to ensure the custom npc always uses the latest speech table if an update occurs.
21 local function ResetNPCSpeechTable()
22     local npcSurvivorID = "PZNS_AgentTest";
23     local npcSurvivor = PZNS_NPCsManager.getActiveNPCBySurvivorID(npcSurvivorID);
24     if (npcSurvivor ~= nil) then
25         PZNS_UtilsNPCs.PZNS_SetNPCSpeechTable(npcSurvivor, PZNS_AgentTestSpeechTable);
26     end
27 end
```

3. I have intentionally left out "idle chat" to allow greater flexibility for other modders to try and implement their own things.
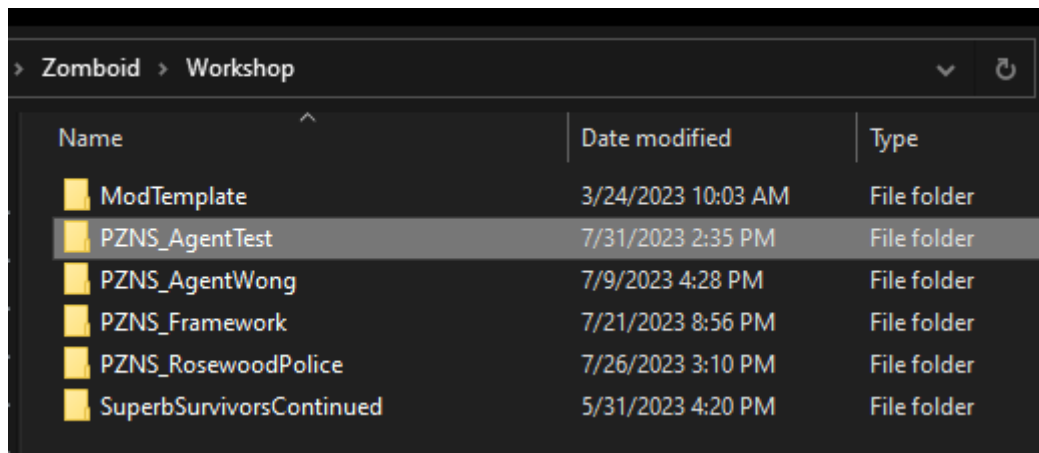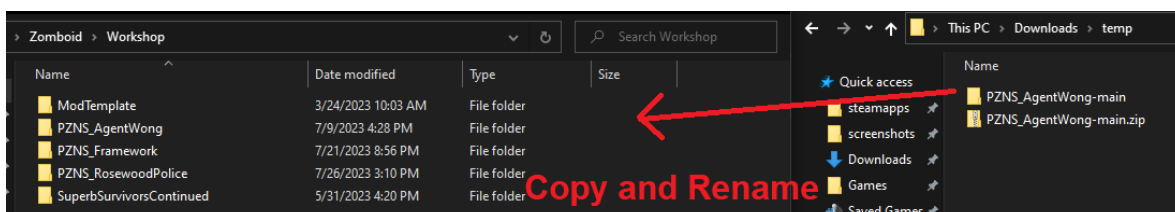   Tchernobill for example, has added voice/audio to his NPC Baelin mod.
   https://steamcommunity.com/sharedfiles/filedetails/?id=3006185383

Running the NPC Mod Locally to Steam Publishing

The process I started with is using the Steam Workshop folder path… You are now free to put it in the workshop folder and run it locally and/or even publish it straight to the workshop!

1. Copy the NPC mod from wherever you were working at (the example was in the Downloads/temp folder).
2. Paste it into the '**My documents %username/Zomboid/Workshop**' folder, rename the folder to intended mod name.
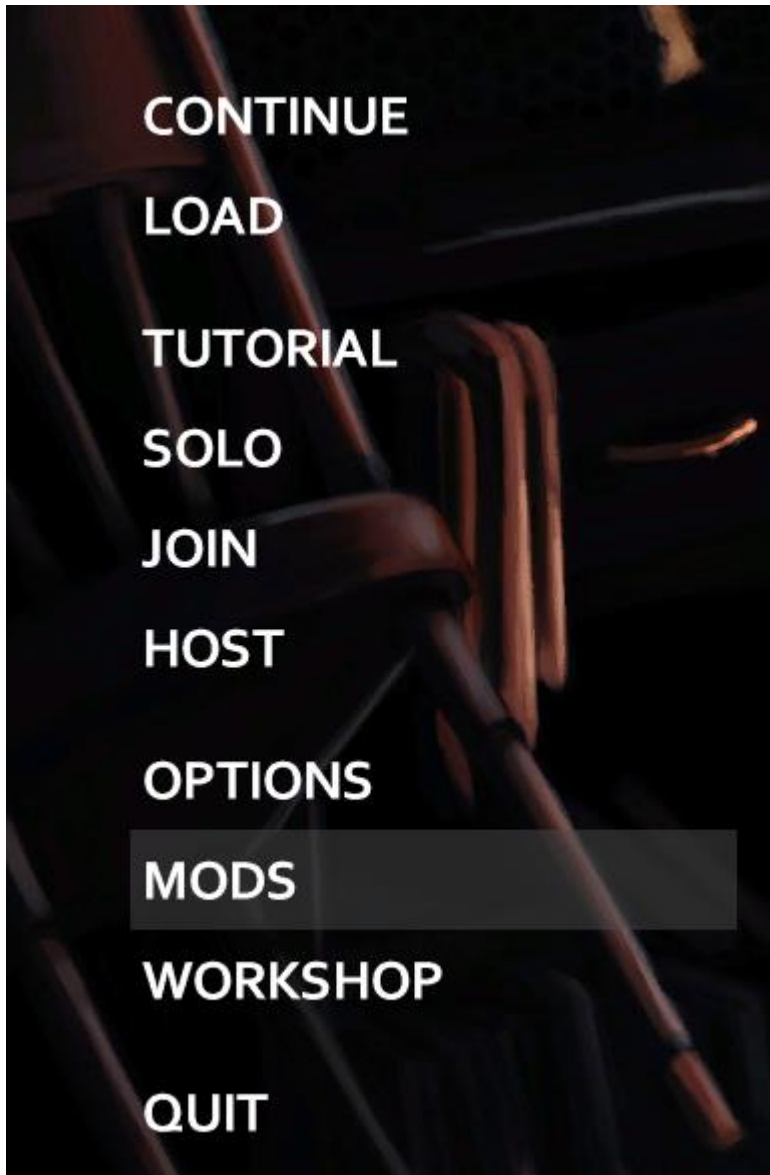
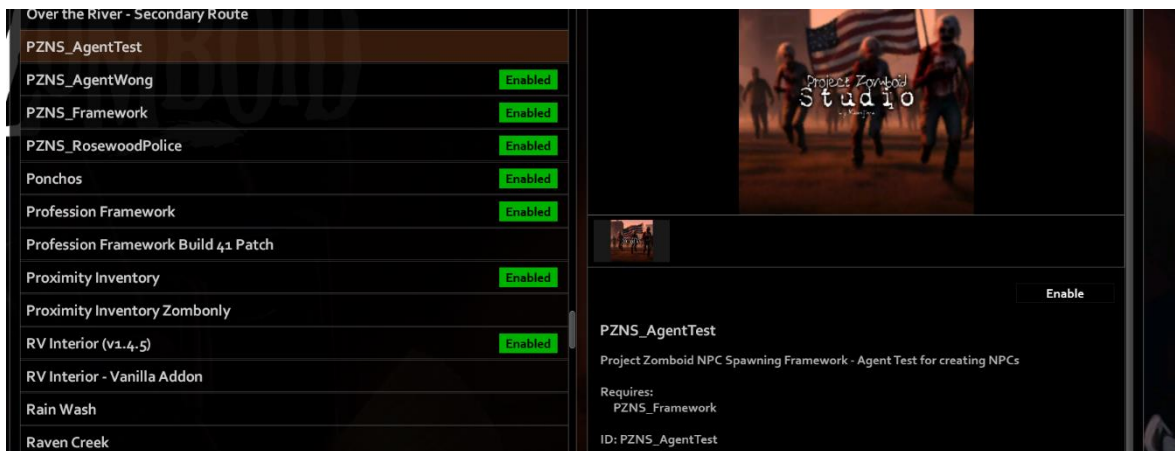3. Now the workshop folder should include your NPC mod

4. Launch Project Zomboid
5. Go to Mods

CONTINUE

LOAD

TUTORIAL

SOLO

JOIN

HOST

OPTIONS

MODS

WORKSHOP

QUIT

6. Look for your NPC mod.

7. Click Enable, then click Back, Game lua will reload.

8. Start a new Game via solo sandbox

9. Move to wherever you spawned your NPC or confirm the NPC has spawned at your location.

10. *I highly encourage you to quit the game and reload the save to verify the NPC data have been saved correctly.*

11. After you verify there are no issues, your mod is ready to be published to the workshop.
12. From the Main Menu, go to Workshop

13. Follow the instructions as you see it, check all the tags, etc.
14. If you have issues with the workshop image, remember to replace the 'preview.png' as needed.