

## **Functional Requirements:**

- Generate terminal house in all village types (plains, desert, taiga etc)
  - Consistently generate at least 1 villager inside the house (the villager who needs help) (100%)
  - Generate book of problems inside terminal house (100%)
  - Generate terminal inside house (100%)
- Generate consistently at least 1 structure in desert villages, (>90%, there is some natural randomness so 100% is not so feasible), and generate in all village types with decent frequency (>50%)

## **Non Functional Requirements:**

- Make the structure look good
  - Attract attention
  - Hold to coding theme
  - Fit in with minecraft design
  - Either have the structure be ambiguous to fit into all villages, or have different nbt files for each village to fit in that way.

## **Test Cases:**

### **World Generation:**

Testing world generation involves locating a structure in-game, then looking inside the structure for the terminal and villager. Due to the random nature of generation, it is possible but rare that a terminal house does not generate in a desert village. The desert village is the most reliable so it is used for these cases, but the structure can generate in all village types except abandoned/zombie villages

input	output:
(in a new world with commands enabled) /locate structure minecraft:village_desert /tp (coords of village) 	 (Game has generated the structure)

(Looking inside the structure)

Note: The villagers will spawn here, but may leave the house at some point before returning to get the coder profession from the terminal block



At least 1 villager is in the house with the white coat profession

This same case can be used for other village types, and this was the result of our own testing for 10 generations of each village type, it just takes a lot of time so I did not include all these cases here.

10	Trial	plains term(w20)	taiga term (weight)	savanna (w20)	snowy (w20)	Desert 15 weight
11		1	3	5	2	1
12		2	4	0	0	3
13		3	1	1	3	0
14		4	2	1	1	3
15		5	4	5	2	3
16		6	2	1	3	2
17		6	3	1	3	1
18		7	1	3	0	6
19		8	2	2	1	0
20		9	3	0	3	3
21		10	2	0	1	2
22	Fail count:	0	3	2	2	0
23	Average:	2.454545455	1.727272727	1.727272727	2.181818182	3.545454545

### Villager trading:

Testing villager trading involves ensuring that the villager has the profession in game, and that trading a requested item gives the correct result.

Input Item	Output Item
Level 1 token	Iron Pickaxe
Level 2 token	12 blocks of coal

Level 3 token	12 blocks of iron
Level 4 token	Shears (Mending and Unbreaking III enchantments)
Level 5 token	Bow (Power IV and Infinity enchantments)
Level 6 token	24 slime blocks
Level 7 token	16 golden apples
Level 8 token	Diamond sword (Sharpness V, Sweeping Edge III, Looting III, Unbreaking III, Mending enchantments)
Level 9 token	Totem of Undying
Level 10 token	Terminal block