Report for assignment 1 (House)

Name: Harrison Student ID: D1265315

I have divided the entire code into four functions, each responsible for creating the roof, the body of the house, declaration, and the main function.

First, I declared the functions and variables I would use and assigned values to the variables in the main function.

Next, in the roof section, I observed that the number of spaces before the roof rows decreases as the number of layers increases (meaning it is inversely proportional to the number of symbols in the roof rows). Therefore, I added two separate for loops within the loop controlling the number of roof layers. The first loop is used to control the number of spaces, and the second loop is used to control the number of symbols in the roof rows.

Then, in the body of the house section, I used two for loops (the first one controlling the y-axis and the second one controlling the x-axis). I used if and else if statements (coordinate method) to construct all the elements of the house's body. I used several variables because the initial problem statement did not specify fixed values.

Finally, following the instructions in the problem statement, I output data related to the house.

Verification

The widest part of the house is the bottom of the roof, and we can determine its value to be 72 from Top + side*2.

The house has 18 levels for the roof, and the height of the main body is 44. This results in an overall height of 62.

The width inside the house is 64, with each side wall having a thickness of 2. This leads to an overall width of 68.

The height of the main house body is 44, with the ceiling and floor each having a thickness of 2, resulting in an interior height of 40.