Description

In the problem we were asked to print a stickman and a stair in each frame where stickman goes 1 step further as frame number increases by 1. Also there were some certain restrictions such as stickman's height, stair's height and their shapes. Therefore, there was not any ambiguity about our goal. The most important aspect of the problem was to parametrize the frame,stickman and stairs such that stickman could go upwards in each frame. As a human, it is quite easy to think yet, computers behave differently and print them line by line so we had to divide them into pieces and combine them accordingly. Thus in my humble opinion, the actual problem was to find the correct division and combining steps and correct parametrizations for them in which we can agree with the computer's point about the picture. 15

Solution

2) I defined 3 methods for each frame and put them in a for loop in main method so that in each loop i was able to get the picture of 1 frame.

1st method was BodyTop which prints the frame until line where stairs start. To do this i used several for loops to print blank lines, blank spaces, head and torso and body(if necessary).

2nd method was BodyAndStairs which prints the stairs and remaining part of the body. First loops in this method were similar to the previous method as i printed blank spaces and the remaining torso. I used 1 more loop to print extra blank spaces until i reached stairs. When i reached stairs i printed the" ___|" part and used for loops to print stars and finished this part by printing "|". However i needed extra for loops to print the line where legs are included. To do this i followed similar steps and used for loops except for printing "|" .

3rd method was StairsDown in which i printed last part of the frame. In this method i used 3 nested loops. First one represented the number of the lines and the other two represented blank spaces and number of the stars respectively.The hardest part of the method was finding good parametrizations since blank spaces were decreasing and number of the stars were increasing as we go to the next line. Therefore, i needed to define 2 extra variables to achieve this.
In total i used 15 for loops.

Conclusion

I solved this problem and got the correct outputs for each given inputs. I made several serious conceptual mistakes at the beginning such as trying to print stairs and stickman in different methods which made me restart the problem. However each of them were quite precious and enhanced my thinking style as a computer engineer. I believe that my last approach to the problem was nice and i achieved the goal relatively fast after that. A better solution could be different divisions and combinations and using some functions to return variables which may lead to less for loops and make the project more modular. Also the variables in for loops could be assigned more wisely. However i cannot exactly picture it in my head how these two could be achieved.