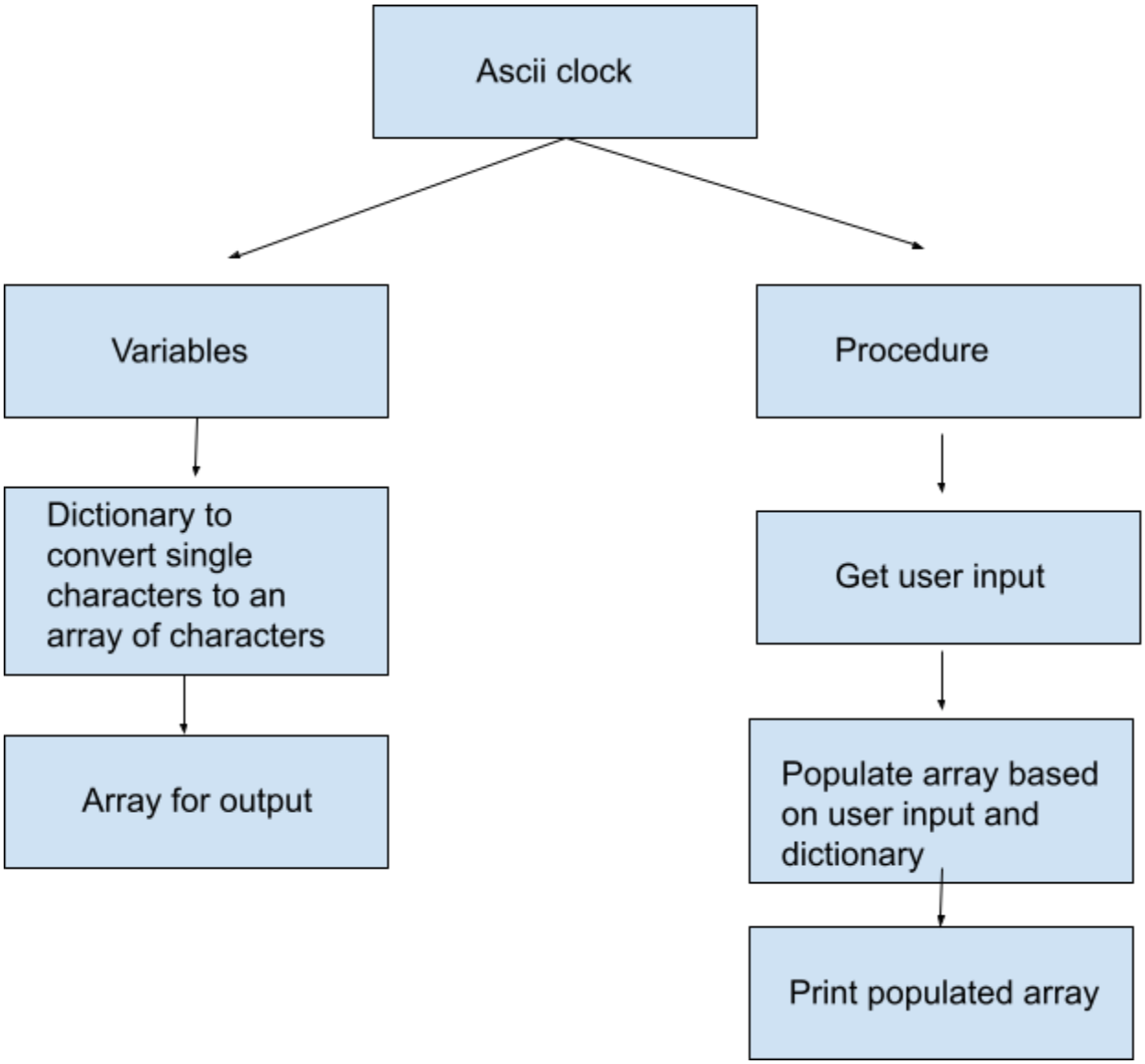
https://replit.com/join/rrqkqlppgg-kevinlei6

Part A: Top Down Design



Part B: Variables

userInput (string): This is a string that stores the user's input.

grid (array of strings): This array of strings is what will be populated based on the user's input and will be printed in the end as the ascii art.

translate (dictionary with strings as keys and arrays of strings as values): This dictionary will allow translation between each character in the user's input and array values that will be able to be printed as ascii art in the end.

Part C: Test Cases

User Input for a Time:	Output:
11:30	1 1 333 000 11 11 : 3 0 0 1 1 33 0 0 1 1 : 3 0 0 111 111 333 000
4:58	4 4 555 888 4 4 : 5 8 8 444 555 888 4 : 5 8 8 4 555 888
10:27	1 000 222 777 11 0 0 : 2 7 1 0 0 222 7 1 0 0 : 2 7 111 000 222 7
3:33	333 333 333 3 : 3 3 33 33 33 3 : 3 3 333 333 333
2:16	222 1 666 2 : 11 6 222 1 666 2 : 1 6 6 222 111 666

Part D: Outline of Code

Assign user input to userInput variable

Initiate grid variable as an array of size 5 with blank strings in each cell

Create the translate dictionary variable using numbers 0-9 (as strings) and ":" as keys, and each value should be an array that represents each row of characters in the ascii art for the corresponding character (going top to bottom as the array index increases)

Iterate over each character in userInput

    Enter a five iteration for loop

        Append the dictionary value given the current character and line iteration to the corresponding index in the grid array

        Enter a try statement

            If the current character iteration is not a colon and the next character iteration is not a colon

                Append a blank space " " to the current line in the grid array

        Except (if an error occurs)

            Continue onto next iteration

Print each line of the grid array using a for loop

Part G: Questions

- In regards to the difficulty of the project, from what I observed, it turns out that it was not as difficult as anticipated. It would be a challenge, but it would not be impossible from an engineering student standpoint. The top-down design that our team helped make gave us

a good idea of what our program should look like. Looking at the program itself, not a lot of code had to be written. We just needed a dictionary to translate the imputed time value and a loop that ran through each number (or character) in the value.

- One of the benefits is that some people can take part in the work without relying on one person. This would allow the others to focus on what they think they might be able to understand and have more time to focus on other tasks. Another benefit is that this cuts the amount of time spent on the project. If the tasks are split up evenly, the project can be done in a reasonable amount of time. However, a drawback is that just because there is a group of people working together, others will find this as an excuse to contribute little or none at all. If some of the members get carried away by the team project notion, they may end up relying on one or two team members to do all the work, or do their part at the last minute. I do see the reasons why this could be a bad idea because there could be issues with communication and coordination. But on the other hand, it is not a bad idea in general unless the execution does not go as planned.