Assignment 18: Challenge Projects

This is a list of projects that are increasingly challenging. Complete all that you can within the class time.

Project 1: Choose Your Own Adventure

1. You are not given a starting project. Create one of your own with a main class called ChooseYourOwnAdventure.java.
2. Make a "Choose Your Own Adventure" game. The starting room should give the user two choices. Then the second room they travel to should give them two more choices. Finally the third room should give them two choices. Each ending room should have a different message. Your game will have a total of fifteen rooms: 1 starting room, 2 possibilities from there, 4 from those, 8 final rooms from those.
3. Run the program and make sure it works as expected.
4. Save the program in Git.

Project 2: Hat Shop

1. You are not given a starting project. Create one of your own with a main class called HatShop.java.
2. This program should pull up a menu for a Hat Shop with 4 options: Add a hat to cart, see your cart, remove hats from the order, and check out (which should end the program). These 4 options should call 4 different functions. The program should keep track of how many hats are in the order at any time. For an extra challenge, allow hats to have different colors and allow for adding and removing different colors, and print the colors when you see the cart.
3. Run the program and make sure it works as expected.
4. Save the program in Git.

Project 3: Even Fibonacci Numbers

1. You are not given a starting project. Create one of your own with a main class called Fibonacci.java.
2. Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:
3. 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, …

By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms.

1. Print the sum out.
2. Run the program and make sure it works as expected.
3. Save the program in Git.

Project 4: Hangman

1. You are not given a starting project. Create one of your own with a main class called Hangman.java.
2. It must randomly choose a word from a list of words, stop when all the letters in the word are guessed. It must give them limited tries and stop after they run out. It must display the letters they have already guessed. For a bonus, take in a file with the words to choose from. Suggestion: make a list of the letters in the word.
3. Run the program and make sure it works as expected.
4. Save the program in Git.

Project 5: Tic Tac Toe

1. You are given starter code in a file called TicTacToe.java.
2. Complete the project so that it makes a 2-player game of Tic Tac Toe, alternatively prompting X and O to choose their location, which is one int representing the row on the board and one int representing the column. The game should end if someone wins (gets 3 in a row) or if the board is full and it is a tie.
3. Run the program and make sure it works as expected.
4. Save the program in Git.