Programming with Scratch
Assignment 3: Tweaking a Game
(Project adapted from http://learnscratch.org/index.php)

Modifying or "tweaking" an existing program is a very effective way to build your programming skills.   In this exercise, you will have a choice of improving one of two simple, classic games; Pac Man and Pong. Each presents a unique set of challenges and opportunities; choose the game that you feel will be most rewarding.

Your completed project must be submitted via Interact by the due date and will be graded using the rubric shown below. Save your final program as username_gametweak and include "gametweak" in the assignment description.

In addition, you must submit a brief written summary of the changes/tweaks you made that explains what you changed and why those tweaks made the game better/more interesting. This should be saved as username_tweaksummary and include "tweaksummary" in the assignment description.

Good luck and have fun!

Grading Rubric

CATEGORY	4	3	2	1
Modifications	Game includes at least three significant modifications; each modification improves the over-all game experience.	Game includes at least three significant modifications; one or more modifications do not improve the over-all game experience.	Game has fewer than three modifications; each tweak improves the over-all game experience.	Game has fewer than three modifications; one or more modifications do not improve the over-all game experience.
Functionality	All elements of the game function properly; code is clear and logic is easy to follow.	All elements of the game function properly; code is somewhat unclear and/or logic is somewhat difficult to follow.	Most elements of the game function properly; code is clear and logic is easy to follow.	Several elements of the game do not function properly; code is somewhat unclear and/or logic is somewhat difficult to follow.
Rules	Rules were written clearly enough that users could easily play	Rules were written, but one part of the game needed slightly more explanation.	Rules were written, but people had some difficulty figuring out the game.	The rules were not written.
Written Summary	Summation explained every modification that was made and why those changes improved the game; explanation was clear and concise.	Summation explained every modification that was made and why those changes improved the game; explanation was slightly unclear and/or not concise.	Summation explained most modifications that were made and why those changes improved the game; explanation was clear and concise.	Summation excluded several modifications; explanation was unclear and/or not concise.

Option 1: Pac Man

This project, available from Learnscratch.org, implements a version of the traditional Pac Man game. It provides a simple method to navigate through the maze without trespassing its limits. It is a good example for an initial game project and allows for easy expansion and the addition of new features.

Video tutorials for recreating the game and the complete game code are available here. To make this project your own, however, requires some modifications. Once you have recreated the program, add at least three additional tweaks/features to the game. You may select from the following list of suggestions or come up with something of your choosing:

- A second Pac Man (with different sets of controls.)
- Additional mazes
- Additional objects for the Pac Man to eat
- A score counter for the objects eaten
- Sound effects according to the motion of the Pac Man

Remember that your final project must include a brief written summary that explains (1) the modifications/tweaks you make and (2) how they improved the overall game experience.

Option 2: Pong

This project, available from Learnscratch.org, implements a version of the traditional pong game. It includes two moving parts: the ball, which bounces on the edges of the Stage, and the paddle, which is controlled by the player. It includes sound effects, and it is a good example of an initial interactive game project.

Video tutorials for recreating the game and the complete game code are available here. To make this project your own, however, requires some modifications. Once you have recreated the program, add at least three additional tweaks/features to the game. You may select from the following list of suggestions or come up with something of your choosing:

- An additional ball
- A score counter for the number of hits
- A second paddle controlled by the key arrows (a second player)
- Assign different score values to each ball hit
- Change the speed of the ball and/or width of the paddle

Remember that your final project must include a brief written summary that explains (1) the modifications/tweaks you make and (2) how they improved the overall game experience.