

There are 5 questions, worth a total of 60 points.

All of your programs must have exactly the name listed in the assignment. Each program should have a comment at the beginning with your name, the date, and a description of the program's intended behavior.

concentration.py 10 points

This is Exercise 5.9. (Which is similar to a children's game called 'concentration').

drag.py 10 points

Write a program that displays a canvas, and waits for a mouse click. The program then displays a circle at the location of the click, and allows the user to drag the circle around the canvas with the mouse. When the user stops dragging, the circle should disappear and the program should exit.

primes.py 10 points

Write a program that asks the user for a number, and then prints all prime numbers less than or equal to that number. Use the efficient method described in Exercise 5.17.

piglatin.py 10 points

Pig Latin is a way to change English into a silly sounding code. The rules are fairly simple. Here, we will assume that vowels are a, e, i, o, u, and y, and that all other letters are consonants. To make an English word into Pig Latin, move any consonants at the beginning of the word to the end of the word. Then add 'ay' to the end of the word. For example, 'chair' becomes 'airch' + 'ay' which becomes 'airchay'. The word 'orange' becomes 'orange' + 'ay', which is 'orangeay'. There is plenty of information about Pig Latin on the web.

Write a function that takes a word and translates the word into Pig Latin. Use the function in a program that reads a sentence and translates it to Pig Latin.

Enter a sentence: I got rhythm I got music who could ask for anything more

lay otgay ythmrhay lay otgay usicmay owhay ouldcay askay orfay anythingay oremay

daleks.py 20 points

This is a version of the classic game *daleks*. The player controls Dr. Who, and the computer tries to catch the player with evil robots called daleks.

The game starts with Dr. Who in the center of the canvas, and four Daleks placed at random on the canvas. The player moves by clicking in the canvas. After a click, Dr. Who should move a short distance towards the clicked point. A good first step is to just write this part of the game, with no daleks.

Every time Dr. Who moves, all daleks move as well. They move a short distance towards Dr. Who, wherever he is on the canvas. The game ends when a dalek catches Dr. Who.

There are plenty of things you could add to this to make it more fun, and maybe get some extra credit. In the classic game, Dr. Who has the ability to teleport to a new random position, and can use his 'sonic screwdriver' to destroy any dalek which is nearby. Also, daleks that bump into each other are destroyed.