

COP 2930 - Introduction to Computing

Loop Control - Suggested Exercises

Objectives:

1. Write a Python program that uses the break statement.
2. Write a Python program that uses the continue statement.

1) Write a program that takes in the amount of an investment, the percentage interest rate the investment earns per year, and a goal amount. Instead of using mathematics (log function) to figure how many years it will take to make it to the goal amount, simulate investing the money year by year to figure out the fewest number of whole years it will take to make or exceed the goal and use a break statement in your code.

2) On planet C, leap years occur on every year divisible by 7, except for years that are divisible by either 35 or 77. (Thus, the first ten leap years after 0 on planet C are: 7, 14, 21, 28, 42, 49, 56, 63, 84 and 91.) Write a program that takes in an upper bound, Y, and prints out all the leap years starting at 7 and ending at or before Y. In your program, use the continue statement to skip over years that are divisible by 35 or 77.

3) In the game "Visited", each location has an order and you must visit the locations in numeric order to get "credit" for visiting them. Let the game have 10 locations, numbered 1 through 10. Write a program that reads in each location the user has visited in the order that they have visited them and stops reading in input when the user has gotten credit for getting to all 10 locations. For example, if the user entered 3, 5, 2, 1, 3, 9, 10, 2, 6, 3, 5, and 9, they would only get credit for visiting locations 1, 2 and 3, since in the list 1 exists before 2, and 3 exists after that particular 2. The visits that count are highlighted. Write a program that uses both break and continue to properly identify when the user had visited all 10 locations and prints out how many places they went to get credit for the 10 places.