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CompSci 1026
Assignment 4

I started this assignment with task 1. I created the file country.py to create class Country that held the information about a single country. I created the constructor method with the instance variables. Then I created the getter methods. I set getPopulation to return an integer and getArea to return a float. I then created the setter methods. I formatted the setArea method to have two decimal points. Aft, I created the getPopDensity method, setting the return as a float formatted with two decimal points. Finally I created a method to create a string representation for class objects. I created a separate file to test my country class and make sure it worked as I wanted it to.
Then I worked on task 2. I created a new file in which I imported the country class and created the class CountryCatalogue. In the constructor method, I created two dictionaries to store information from the two text docs. I started by reading the text with the continent information and saved that to cDictionary and then used that dictionary to store the continent attribute of the object to the countryCat dictionary. I used the country method from class country to create each object and stored each object as the value in countryCat. I made the key the name of each country by using the getName method from class country. I created the setPopulationOfCountry method and used the setPopulation method from country to do so. I did the same for setAreaOfCountry. To see if the country already existed in countryCat, I used an if statement to see if parameter name was in the catalogue. For method addCountry, I used the same if statement. If the country didn't already exist, I created a new object by using the country method from class country. For deleteCountry, I used the same if statement and if it was in the catalogue, I deleted the whole dictionary entry. For printCountryCatalogue, I made a for loop to pull up each entry in the dictionary and then printed each one. Due to the repr method in country, it printed in the deafult string represenation. For getCountriesByContinent, I created a list to store each country name that was on the continent. I used a for statement to iterate over each object in the dictionary and used the getContinent from country to see if each object was on the same continent we were searching for. If it was, I appended it to the list and after going over each object, I returned the list. For filterCountriesByPopDensity, I also created a list to store the names of countries and their densities that fell between the range. I used getPopDensity from country to find the population density and then used an if statement to see if they lied between the values. If they did, I created a tuple with the name of the country and the density value. I added that tuple to the list. I then sorted the list by descending density value. I then created the saveCountryCatalogue method. I created a list to store all the data I was organzing. I set the count equal to zero and created a file "out.txt" to write to. I used all the getter methods from country to get the name, continent, population, area, population density. I formatted them and then saved the formatted information to the list. I added a count for each for loop to count the number of objects entered to the file. I then wrote the information to the file, with each object on a new line and sorting them in alphabetical order by name. I closed the file and returned the number of objects written to the file. This created the new text file and wrote all

the information to it. I ran the main function to test my second class and ensured that all the data had the correct formatting and number of decimal points, ect.