Lab 11: ArrayLists, Streams, Collections, Generic Classes

CSIT 150

Objectives

• Practice creating and using ArrayLists, Lists, Streams object

Download and import the files found in the Lab11.zip file (available on black board). Name your project and/or package whatever you want.

1. Update the Employee class to add an “accessCode” data member. This is an integer value. Update the constructor and toString method appropriately. Add a getter (getAccessCode) and setter (setAccessCode) for the access code. In the Lab11 driver, modify the creation all 10 employees in the lab, giving each of them an access code. Make sure at least 3 employees have an access code of “2”.
2. In the Lab11 program, go to “step2”. Using a loop, output the first 5 employees. Then, do the same using a stream. (See the sample code above step 2 in the lab.)
3. Uncomment the step 3 code to verify the getAccessCode accessor works. Note, the use of a “List” collection handle that references a new ArrayList.
4. Go to step 4 in the Lab11 code. Add code that checks if all the employees have an employee number of 1. *Note: you do not need to store them in a list, but simply output true or false that you have an employee with that number. Use the “allMatch” operator for streams. See the code for “anyMatch”, as a reference.
5. Similar to thea allMatch above, use .noneMatch for step 5.
6. Using streams, filter the employees list and save the employees whose first name contains an 'o' as a list. Then filter the result of the first filter whose accessCode is 2 and store this as a list. Finally, print out the resulting final list.
7. **Bonus**: combine your solution to step 6 all in one stream statement. You can stream back to back, you just must remember to collect appropriately the result of each stream prior starting the next one. The values in the first stream will be passed into the second stream. The second stream will then filter the data further and pass it onto the third stream which will print each remaining item.