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## CSCB07: A3 Report

In this assignment, I have incorporated the iterator, builder, and incremental design patterns.

Beginning with the iterator design pattern, this can be seen in my assignment in OutputToConsole class located in the output package. In the findAndprintMostSimilarPairOfUsers method, the iterator design pattern can be seen from lines 95 - 107. I also make use of this design pattern in the method findAndprintMostDissimilarPairOfUsers on lines 138 - 150. I decided to use the iterator design pattern to ensure I was able to iterate over the list of users retrieved from the userUserMatrix without exposing the underlying representation.

Furthermore, I have also used the builder design pattern in my assignment. I have replaced the constructors Abbas had initially provided in the Cfiltering class with the builder design pattern. This can be seen in the Cfiltering class located in the populateMatrix package from lines 27 - 49. The reason I did this was to make sure the user was forced to enter to the number of columns and the number of rows. Using builder, I was also able to remove unnecessary constructors while making sure the necessary conditions on the number of users and movies were being met.

I have utilized the incremental development pattern as well. I took some time planning my assignment and did chunks of the program in one go. I would take some time of and come back to test my code and make sure it all made sense before doing the same thing again. This way I was making sure to achieve the basic needs of the program and not going overboard adding new flexibility.

In this assignment I have also followed the single responsibility principle which can be seen as one looks over the classes. I have made use of an interface called PrintMatrixAndScores, located in the output package. I have followed Liskov's substitution principle (LSP) by making sure I was not directly inheriting from classes. I have performed unit testing and have error checked using exceptions.