**ITEC 3150**

**HW 2**

In this assignment we will be working with a video library.

First, we want to read the binary file. You should run VideoBuilder to build the binary file for this assignment. You will need to modify Video for this to run.

You will need to read the binary file you created using VideoBuilder. The class Video is provided to enable you to read objects from this file. Note, available() may not work so plan on catching EOFException to determine when you reach the end of the file. The available method returns the number of bytes that can be read without blocking so this may not work with ObjectInputStream. When you read the binary file, you will need to store the objects for later use. I used an ArrayList<Video> to hold the data for further processing.

The first thing your program needs to do is print a complete list of all of the videos in the file.

After printing the contents of the file, we need to get a count of the unique videos. If a video is included more than once, we should not include it in our count. You must use the appropriate data structure that eliminates duplicates and stores them in sorted order.

Traverse the list read from the binary file and insert the names of the Videos into the appropriate set. You should have eight entries in the set once you finish processing the list. Print this set.

Now create a TreeMap<String, TreeSet<String>>. This will contain the name and a set that contains all of the categories for each video. This must be done using an iterator over the video names set. Loop through this set and create a TreeSet<String> to hold the categories. You will need a loop to go through the list from the binary file, mine was an ArrayList. Add the categories to the set. After the inner loop completes, put the name and set into a map. Return the map.

Print the contents of the map. Again, I used a method. Create an Iterator on the map you built in the previous step. This one is a little tricky. You can’t create this directly from the map, you have to go through the Entry. I called my TreeMap<String, TreeSet<String> map. To create the iterator, map.entrySet().iterator(); Get the item returned by next() And use the key and value for each to print the name and the categories.

Sample output:

Original videos:

Video: name: Aquaman, minutes: 143, category: Science Fiction

Video: name: No Time to Die, minutes: 182, category: Action

Video: name: Aquaman, minutes: 143, category: Fantasy

Video: name: Aquaman, minutes: 143, category: Comic Book

Video: name: No Time to Die, minutes: 182, category: Bond

Video: name: A Star is Born, minutes: 140, category: Rock

Video: name: A Star is Born, minutes: 140, category: Romance

Video: name: Star Trek, minutes: 126, category: Science Fiction

Video: name: Rogue One, minutes: 133, category: Science Fiction

Video: name: Rogue One, minutes: 133, category: Adventure

Video: name: Top Gun, minutes: 105, category: Action

Video: name: Top Gun, minutes: 105, category: Military

Video: name: Top Gun, minutes: 105, category: Drama

Video: name: Top Gun Maverick, minutes: 130, category: Action

Video: name: Top Gun Maverick, minutes: 130, category: Drama

Video: name: Top Gun Maverick, minutes: 130, category: Military

Video: name: Dune, minutes: 155, category: Action

Video: name: Dune, minutes: 155, category: Adventure

Video: name: Dune, minutes: 155, category: Science Fiction

Video names:

A Star is Born

Aquaman

Dune

No Time to Die

Rogue One

Star Trek

Top Gun

Top Gun Maverick

Video Counts

A Star is Born 2

Aquaman 3

Dune 3

No Time to Die 2

Rogue One 2

Star Trek 1

Top Gun 3

Top Gun Maverick 3

Name Categories

A Star is Born Rock Romance

Aquaman Comic Book Fantasy Science Fiction

Dune Action Adventure Science Fiction

No Time to Die Action Bond

Rogue One Adventure Science Fiction

Star Trek Science Fiction

Top Gun Action Drama Military

Top Gun Maverick Action Drama Military