COURSE CODE CSIS280
COURSE NAME Object-Oriented Programming
COURSE Level / Term Level 8 / Fall

FINAL EXAM

Date: XX/XX/2024

Exam duration	3 hours
Materials approved/provided by course instructor:	None
Total points:	100
Percentage of OCG:	50

INSTRUCTIONS:

1. Fill in all information requested on the front page of your Examination Booklet.
2. All answers must be written inside the blue Examination Booklet. Answers on any other material will not be marked.
3. Please read each question carefully before answering.
4. All answers must be written in blue or black ink pen.
5. Cross out all notes that do not constitute your answer.
6. Please write in a clear and tidy manner. Illegible answers will not be marked.
7. You may not in any manner communicate with any other person during the course of the examination. If you need assistance or have a question, please raise your hand and you will be approached by an Invigilator.
8. You may not leave the Examination space during the first 30 minutes or the last 15 minutes of allocated Examination time.
9. Do not bring your completed Examination forward. Raise your hand and your Exam will be collected from you by an Invigilator

PLEASE ANSWER ALL QUESTIONS

Create a computer program in JAVA programming language that will read the content of files, create class instances, and output list of reports based on the data collections that are processed.

1. Create class that accepts file name through constructor, and has method read for processing file line-by-line. **(5 marks)**
2. Create class *SocialMediaPost*, that will be used to store general information about posts on social media. Class should keep information about username, date of post. Create getters and setters for attributes. **(5 marks)**
3. Create class *TwitterPost* that will extend *SocialMediaPost* and will have number of likes and number of retweets in addition to username and date of post. Create getters and setters for new attributes. **(5 marks)**
4. Create class *FacebookPost* that will extend *SocialMediaPost* and will have number of reactions and number of shares in addition to username and date of post. Create getters and setters for new attributes. **(5 marks)**
5. Create class TikTokPost that will extend *SocialMediaPost* and will have number of likes in addition to username and date of post. Create getters and setters for new attributes. **(5 marks)**
6. Create interface *ISocialMediaStatistics* that has one method reactions, that does not accept arguments and return integer. Implement this method in all classes extending from *SocialMediaPost*. **(5 marks)**
   - Twitter formula for reactions is number of likes + number of retweets.
   - *TikTok* number of reactions is equal to number of likes
   - Facebook number of reactions is equal to number of reactions + number of shares * 3,5

In the main program
Use class for reading files from file to process twitter.txt, tiktok.txt and facebook.txt files. And parse lines in those into class instances. Save content of files in a Map, that has key string (social media) and value ArrayList from that social media. **(5 marks)**

1. Calculate average number of reactions per social media and output results into a file. Create a separate fille for each social media, and one for all. **(15 marks)**
2. Find top 10 posts per social media posts based on engagement and output results into a file. **(10 marks)**
3. Find social media posts with most reactions in 2024 and output result into a file. If post has less than 100.000 views don't take it in consideration. **(10 marks)**
4. Create builder design pattern for creating new social media post. **(10 marks)**
5. Find post(s) with most reactions across all social media and save results into a file.
   (i) Solution without threads **(10 marks)**
   (ii) Solution with threads **(20 marks)**