

CMSC 131 Quiz 3 Worksheet

The third quiz for the course will be on Thursday, March 25. The following list provides additional information about the quiz:

- The quiz will be posted on Thursday, March 25, 8 AM (morning), and due the same day, Thursday, March 25, at 4 PM (afternoon).
- It is designed to be completed in less than 1 hour, but I am making it available for 8 hours since people have different schedules.
- You will not have lab on Thursday March 25, so that should free up 1 hour for everyone to work on the quiz.
- We will have normal office hours on Thursday March 25, but TAs cannot answer any questions about the quiz in OH (They can help you submit if you have submit server issues).
- Did you install the correct version of Eclipse, Java 15, and course management software on your computer at the start of the semester? See here: <http://www.cs.umd.edu/eclipse/install/>

If you don't have this exact setup and you are not able to submit the quiz, that will not be a valid reason for an extension.

- The quiz will be posted similar to a class project. You will write code in an Eclipse project and submit as usual.
- You can only post clarification questions in Piazza on quiz day and a CMSC 131 staff member will reply. **You should post as a private post and we will make it public or update the FAQ if others can benefit from the answer. As a student, do not answer any piazza post on quiz day.** Debugging questions, why code is not compiling, why is code not passing a test, are invalid questions to post in Piazza.
- Posting of any kind of code in Piazza (or other public platforms), during the quiz period, represents an academic integrity violation and will be reported as such.
- The quiz will be graded based on submit server tests (release and secret) and code inspection (e.g. style, following rules, etc.). The exact rubric will not be available before the quiz. Just follow all the rules to avoid point deductions
- **You must work by yourself.** Sharing of quiz solutions represents an academic integrity violation and will be reported as such. Submissions can be checked with cheating detection software.
- You can use class resources (lecture notes, lecture/lab examples, videos, etc.), but no other resources (e.g., code from the web).
- All submissions must be done via the submit server (no e-mail). The highest scoring submission on the submit server will be downloaded for manual TA grading purposes (you can submit as many times as you want before the deadline).
- There will be a 1-hour late submission period, therefore you need to submit often and before Thursday, March 25, at 4 PM (afternoon) for your quiz to count on time. If you turn it in between 4 and 5 PM, it will be marked late and there will be a 5-point deduction. Questions will not be answered on piazza during the late period.
- If you are student with an extended time accommodation from ADS, the time frame provided takes into consideration your time allocation. If you need any other assistance or still have concerns to finish the quiz, contact me via email before the quiz day.
- The quiz will cover concepts covered in lecture and lab during Week 1 to Week 6 (The main focus will be on designing a class and exceptions).
- It is in your best interest to complete this work by yourself, and following the guidelines provided above. You need to identify which topics you understand and which ones you don't, so you can be successful in CMSC132 and future CS courses. The following exercises gives you practice with concepts that may show up on the quiz. Solutions to these exercises will not be provided, but you are welcome to discuss your solutions with the TAs during office hours or on Piazza.

Exercises

1. Define a class Telephone according to the following information:

Instance Variables (all private)

- a. area code → integer value
- b. three digit value → integer value
- c. four digit value → integer value
- d. user's name → String reference

Instance Methods

- a. **Constructor** - Allows you to initialize all the instance variables of the class. Name the parameters after the instance variables (i.e., you must use the **this** reference).
- b. **Default constructor** – Initializes the object to the number 555-555-5555 and the name to null. This constructor relies on the previous constructor for the object initialization (i.e., you must use the **this** reference).
- c. **Copy constructor**
- d. **Get/Set methods** – Define get/set methods for all instance variables of the class.
- e. **equals** – Two numbers are considered the same if they have the same area code, three and four digit values. Define the equals methods as described in class examples.
- f. **toString** – Returns a string with the user name followed by the phone number of the person.

Static Variable (private)

- a. **count** – keeps track of how many Telephone objects has been created.

Static Methods

- a. **getCount** – Returns the count value.
 - b. **getDigits** – If you look at your phone's numeric keypad, you will see letters underneath the numbers (e.g., for 2 you will see ABC). The getDigits method takes a string reference as a parameter, and returns the number associated with the string by mapping each character of the string to a number. For example, if the string has the value "CAR" the method will return the integer 227.
2. What is an exception?
 3. Modify the Telephone constructor so the exception IllegalArgumentException is thrown if the user's name is null.
 4. Define a try catch block that handles the IllegalArgumentException when creating a Telephone object. The catch clause should print the message "Invalid argument" when the exception takes place. You can assume the values used to create a Telephone are provided by the user (using the Scanner class).

Below is an old quiz. I am just making this old quiz available for further practice, but remember the format of your quiz in Spring 2021 will be different than what we did in the past. Therefore, to make sure you do well on the quiz you need to be comfortable with **the material covered in our class**, not just the solution to this sample quiz. You will find our quiz much more difficult if you only study this quiz that was designed to be done in 20 minutes with no book, notes, or computer.

http://www.cs.umd.edu/class/spring2021/cmsc131-01XX/quizzes/Quiz1_133_Spring2020.pdf

http://www.cs.umd.edu/class/spring2021/cmsc131-01XX/quizzes/Quiz1_133_Spring2020_Soln.pdf