

Calendar program

Assignment

Part 1: Class Substring

Create a class named **Substring** that will expect the first command line argument to be a string, and the second two command line arguments to be integers, the first will be used as an index and the second as a length. The output should be the substring of string starting at the index and of the specified length. Examples:

```
> java Substring Jello 1 3
ell
> java Substring "Hello World" 0 5
Hello
> java Substring OneTwoThree 5 1
o
```

Notes:

As you can see from the examples, an index of 0 refers to the first character in the string. To figure out how to extract a substring from a String, check out the API documentation for the class **String** which can be found in **java.lang**

Assignment

Part 2: Calendar generating program

Write a java program named **cal** (the **main()** should be in a class named "**cal**") that will print out to standard output the calendar for any month. Your program should look at the command line arguments for a numeric month and year, and print the calendar for that month in the format displayed below. If there are no command line arguments, or if the command line arguments are not a valid month and year, your program must print the calendar for the current month. This program is a java version of the Unix "**cal**" command. Sample usage of your program is shown below:

```
> java cal 4 2025
April 2025
Su Mo Tu We Th Fr Sa
    1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30
```

As the above example show, the program should print out the month and year, followed by the days of the week (using the same abbreviation as shown above) and the dates in the month. Your program must produce a tabular output exactly like the above examples, the only difference should be the exact position of the dates (which depend on the specific month asked for). It is required that the columns of the calendar line up just like the above examples!

Notes:

- You probably want to use a `java.util.Calendar` object!
 - The code may be helpful, specifically the [Tomorrow](#) and [BetterTomorrow](#) programs.
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Assignment

Part 3: **BankSystem**

Design **BankSystem** class. You need to design more than one class. For example: You need to design a class **BankAccount** to model users' bank accounts. Probably different bank accounts (**CashAccount**, **CreditAccount**, ...). The account should keep a user's name and balance, accurate to the nearest cent... The user should be able to make deposits and withdrawals on his/her account, as well as changing the account's name at any time. Also, the system needs to be able to find out how many **BankAccounts** have been created in total. For each account, only the last 6 **Transactions** should be able to store in ascending order and be printed.

Note: The following part should be done after Exception chapter.

1. Add the **CheckingAccount** class of **BankSystem**, Designing and Using Classes to throw an **IllegalArgumentException** in any of the following circumstances:
 - when the account is constructed with a negative balance,
 - when a negative amount is deposited, or
 - when the account is overdrawn (when the amount withdrawn exceeds the current balance).
2. An **IllegalArgumentException** is an unchecked exception that is thrown to indicate that a method has been passed an illegal or inappropriate argument. Instructions:
 - Add (modify if you've already finished) the **CheckingAccount** class to handle errors and write a test program as indicated above.

For All Assignments

How To Submit

Electronic Submission Only!

Submission of your homework is via huaweicloud Classroom and the general idea is to upload your files as attachments. For this Homework you should submit your .java files (remain your src directories) with a readme description inside very beginning of block comment.

The name of attachment (zip or rar file) of your message should include your **student#_HW#_fullname**. Anything else you want to tell us should be included in a **readme.txt** file. Make sure your submission includes your full name, student No and Email address in every single source file, we can't record your grade unless we know your name or student No.

Don't submit compiled code (.class files)!

Multiple Submissions: You can resubmit for each project following the huawei Classroom instructions, we will always grade the last submission received.