Assignment 4
Java - Strings and Classes

Instructions:

- Submit the following:
  <YourASURiteID>-Assignment4.zip This compressed folder should contain the following files:
    1. P1.java
    2. P2.java, Account.java
    3. A readme.txt containing any instructions you want to provide to your instructor
- Make sure your java files compile without any compiler errors. You will not receive any credit for programs with compiler errors.
- If you are unable to complete your program, submit the parts that work with no compiler errors for partial credit.

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1. New String split method 25 points

The **split** method in the **String** class returns an array of strings consisting of the substrings split by the delimiters. However, the delimiters are not returned. Implement the following new method that returns an array of strings consisting of the substrings split by the matches, including the matches.

public static String[] split(String s, String regex)

For example:
split("ab#12#453", "#") returns **ab, #, 12, #, 453** in an array of **String**.
split("a?b?gf#e", "[?#]") returns **a, ?, b, ?, gf, #, e** in an array of **String**.

File name: P1.java

Inputs:
- a String that is to be split
- a String that specifies the delimiters

Output: Print the String array produced by your new **split** method

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2. *The Account Class*   25 points

Design a class named **Account** that contains:
- An **int** data field named **id** for the account (default 0).
- A **double** data field named **balance** for the account (default 0).
- A **double** data field named **annualInterestRate** that stores the current interest rate (default 0).
- A **Date** data field named **dateCreated** that stores the date when the account was created.
- A no-arg constructor that creates a default account.
- A 3-arg constructor that creates an account using a specified account ID, balance, and annual interest rate.
- The accessor(get) and mutator(set) methods for **id, balance, annualInterestRate**.
- The accessor(get) method for **dateCreated**.
- A method named **getMonthlyInterest()** that returns the monthly interest.
- A method named **withdraw** that withdraws a specified amount from the account.
- A method named **deposit** that deposits a specified amount to the account.

File name: Account.java and P2.java (Test program)

Implement the **Account** class. Write a test program (**class named P2**) that does the following:
1. Creates an Account object. Get user inputs for account ID, balance, and annual interest rate to create the Account object (For example: an account ID of 1122, a balance of $20,000, and an annual interest rate of 4.5%).
2. Next get user input for an amount to be withdrawn from the account (for example, $2,500). Use the **withdraw** method to withdraw that amount.
3. Similarly, get user input for an amount to be deposited to the account (for example, $3,000). Use the **deposit** method to deposit that amount.
4. Finally, print the current balance (after withdrawal and deposit), the monthly interest, and the date when this account was created.