Challenge: Language Basics

Description: Write a Java application using the NetBeans IDE that utilizes primitive data types, operators, expressions, statements, blocks, and control flow.

Purpose: This application provides experience working with the basic language features of Java. It is important when working with a new language to understand how it handles its data types, operators, expressions, statements, blocks, and control flow. A good thing to always do with a new language is to build test applications where you experiment with these language features to make sure you understand how they work.

Requirements:

Project Name: <Pawprint>LanguageBasics

For the Project Name, follow the same naming scheme used in the previous challenges. The Project Name is to be comprised of your pawprint with the first letter capitalized followed by LanguageBasics. For example, if the pawprint is **abcxyz9** the project is to be named **Abcxyz9LanguageBasics**.

Write the code necessary to do the following inside the main() method of the application's Main Class created from Netbeans by default.

Declare the following variables and set their initial values as indicated:
Declare a char, named **`c1`** that has an initial value of 'A'
Declare a char, named **`c2`** that has an initial value of 65
Declare a short, named **`qualityScore`** with an initial value of 70
Declare a float, named **`gravitation`** that has an initial value of 9.8
Declare a float, named **`weight`** that has an initial value of 50
Declare a boolean, named **`sunny`** that has an initial value of true
Declare a boolean, named **`warm`** that has an initial value of false
Declare an int, named **`hour`** with an initial value of the current hour from system clock
Declare an int, named **`minute`** with an initial value of the current minute from the system clock
Create a String, named **`greeting`** that has an initial value of "Bonjour"
Create a String, named **`myPawPrint`** that has an initial value of "*your own Pawprint*"

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Using the variables declared and initialized above, do the following. Where it says "display" it means output a line to standard out. Each displayed item is to be on a separate line. Note: System.out.println() puts a newline character at the end of the line. However, System.out.printf() must have a "\n" at the end of the string to put a newline at the end, so the next element is displayed on a separate line.

Using char variables **`c1`** and **`c2`** compare them to see if they are the same. If they are the same display a line that displays the two characters with the string **" and "** between them followed by **" are the same."** If they are not the same display a line that displays the two characters with the string **" and "** between them followed by **" are NOT the same."** Here are examples of what the two different displayed lines would look like:

d and d are the same.
k and p are NOT the same

If **`qualityScore`** is greater than or equal to 0 and less than or equal to 60 display **"The quality is bad."** Otherwise display **"Good quality."**

Declare a variable called **`force`** that is assigned to the **`weight`** times the **`gravitation`**. The **`force`** variable must be of the same type as the type that results from the multiplication of **`weight`** and **`gravitation`**.

Display the calculated **`force`** proceeded by the string **"Force = "**. The output should look like the following (actual value will be different): **Force = 2.345**

Using **`sunny`** and **`warm`** display these specific outputs: **"Go hiking."** if **`sunny`** and **`warm`** are both true and **"Go barbeque."** if **`sunny`** is false and **`warm`** is true. For any other possibilities, display a message saying **"Stay home."**

Use switch/case and the variable **`hour`** and **`minute`** to display **"The current time is 08:08 in the MORNING."** if **`hour`** is equal to 5-10, **"The current time is 13:10 in the AFTERNOON."** if **`hour`** is equal to 11-16, **"The current time is 20:30 in the EVENING."** if **`hour`** is equal to 17-22, **"The current time is 01:45 in the NIGHT."** if **`hour`** is equal to 23-4, and **" You have the wrong time."** if **`hour`** is something other than 0-23. Note: The hour and minute values will be different since they are dynamic and based on the system clock. Make sure you test your switch for all possible values.

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Using a "for" loop count from 2 to 6 (inclusive) using an integer variable **`count`**. Inside the loop display each value of **`count,`** that is divisible by 3, with a line that is **"`Count:` "** followed by the value of **`count`** as in:

`Count`: 3
`Count`: 6
…

Declare an int variable **`countDown`** with an initial value of 5. Using a "while" loop that continues while **`countDown`** is greater than 0, display the value of **`countDown`** in a line with **"Count Down: "** followed by the value of **`countDown.`** (Example: **Count Down: 5**) After the countdown line is displayed, decrease the value of **`countDown`** by 1 using the post-decrement operator. When **`countDown`** reaches 0, output the following message: "Houston, we have a lift off!".

Using the invokeMe() method from Challenge 2: Hello World, re-develop the method to display a line that contains the **`greeting`** string, followed by comma and space ", " then the **`myPawPrint`** string, followed by " **and today's date is** ", and last call the invokeMe() method in the main. Consider the example below:

Bonjour, my pawprint is wergelesn and today's date is 08/23/2018 11:40

Run your application and make sure everything works as expected. ZIP the project directory and submit it on Canvas.

Things to Submit on Canvas:

- The zip file created after you export your project.
- You may also submit screenshots of your application running for proof (optional). Put all your screenshots in a folder, name the folder "<Pawprint>Screenshots" where you replace <pawprint> with your pawprint, and zip them, even if you only take one. Then submit the zip of screenshots on canvas.

Note: You are only allowed to submit one thing at a time on canvas. You cannot submit a zip file and your screenshots. Therefore, first submit the screenshots, then click "re-submit", and submit your zip file. On your end, it will look like you only submitted the zip file, however, on our end, we will see both.