Computer Exercise: Programming

If you have time left: A menu in Matlab

Simple menu dialog box in Matlab

In Matlab you can in create a simple dialog box with buttons for different user options. It can be done using the command menu. In this exercise you will try this command out, and also use the switch statement (you can see it as a different version of the if statement). Use help to read about menu and switch and to learn how to use them.

1. First, write two functions Fahr2Cels och Cels2Fahr for conversion between degrees Celsius and degrees Fahrenheit and vice versa. The conversion formulas to use are:
   \[ F = \frac{9}{5}C + 32 \]
   \[ C = \frac{5}{9}(F-32) \]

2. Write a script tempconv.m where a menu dialog box similar to the one shown in the image. Also, the script must contain the calls for the conversion functions (from 1). Which conversion function that is called for, depend on which menu button the user push. This choice should be handled by a switch statement (an if statement would be an option, but switch is simpler in this case).
   To make it simple, the input of temperature and the converted temperature can be done in the Command window, and not in the dialog box. The switch statement must also contain code for input and display of temperatures.

Exemple:
Pushing the button Fahrenheit => Celsius yields the following text in the Command window (the user input in this example is 25 degrees Fahrenheit):
   Give temperature in Fahrenheit: 25
   25 degrees Fahrenheit is -3.889 degrees Celsius

   and the equivalent if pushing the button Celsius => Fahrenheit:
   Give temperature in Celsius: 25
   25 degrees Celsius is 77 degrees Fahrenheit

3. Let the program also deal with the case when the user done something wrong, like closing the dialog box instead of pushing any button. To do that, add an otherwise branch (block) to the switch statement. Let the program display You have not chosen any conversion’ when that is happening. Run the program and see if it works. The output text should be displayed in the command window if you close the dialog box.