Chapter 6

# Shell Scripting: User Prompts

**In this chapter, you will learn the following to World Class standards:**

1. **Adding Comments**
2. **Defining the Program**
3. **Prompting the User**
4. **Computing the Formula**
5. **Displaying the Answer**
6. **Creating an Executable File**

## An Interactive Shell Script

In this chapter we will look at a program that is much more advanced than the simple math operation programs we learned in the previous lesson. The program we will be working with is still very simple in programming standards, but it has many aspects that will carry over to more advanced programming we will visit later. The program looks like this:

```
# ctof.exe is a Celsius to Fahrenheit conversion program
echo “This program converts Celsius to Fahrenheit”          # program definition
echo “ “                                                    # space
echo -n "what is the temperature in Celsius? ”              # user prompt
read c                                                      # reads input
let f=$c*9/5+32                                             # Fahrenheit conversion
echo "Celsius temperature $c converts to $f Fahrenheit“     # shows the answer
```

**Figure 6.1 – Celsius to Fahrenheit Shell Script**

## Adding Comments

Let’s look at the first line of the program. As you can see, it starts with a pound sign #. This is how we can add comments to our program inside the script without affecting the operations of the program. A few spaces past each line after the first has a pound sign with a short description of the purpose of the line of code. We can also input copyright information using a comment. The first comment usually defines the program.

```
# ctof.exe is a Celsius to Fahrenheit conversion program
echo “This program converts Celsius to Fahrenheit”          # program definition
echo “ “                                                    # space
echo -n "what is the temperature in Celsius? ”              # user prompt
read c                                                      # reads input
let f=$c*9/5+32                                             # Fahrenheit conversion
echo "Celsius temperature $c converts to $f Fahrenheit“     # shows the answer
```

**Figure 6.2 – Adding Comments to Define the Program and Lines of Code**

## Defining the Program

The second line of code displays the purpose of the program for the user. This is considered proper programming etiquette, and is especially useful if there are more than one executable shell files in a single directory. Use the **echo** command and enter the text in quotation marks as shown below.

```
# ctof.exe is a Celsius to Fahrenheit conversion program
echo “This program converts Celsius to Fahrenheit”          # program definition
echo “ “                                                    # space
echo -n "what is the temperature in Celsius? ”              # user prompt
read c                                                      # reads input
let f=$c*9/5+32                                             # Fahrenheit conversion
echo "Celsius temperature $c converts to $f Fahrenheit“     # shows the answer
```

**Figure 6.3 – Outputting the Program Definition**

## Prompting the User

Next we will prompt the user to supply the original data to be converted by the program. Type **echo –n** and then in quotation marks we ask the user for the data. The next line of code contains the Read command. Type **read c** to record the data received from the user as variable **c**. Notice again that after each line of code there is a comment describing its purpose.

```
# ctof.exe is a Celsius to Fahrenheit conversion program
echo “This program converts Celsius to Fahrenheit”          # program definition
echo “ “                                                    # space
echo -n "what is the temperature in Celsius? ”              # user prompt
read c                                                      # reads input
let f=$c*9/5+32                                             # Fahrenheit conversion
echo "Celsius temperature $c converts to $f Fahrenheit“     # shows the answer
```

**Figure 6.4 – Prompting the User**

## Computing the Formula

Now that we have captured the value of the Celsius temperature from the program user, we can code our program to compute the conversion formula. You can see the conversion formula to the right. To convert it to fit our program, first define **f** as the new variable, then add **c*9/5+32**. This will take the user input value, convert it to Fahrenheit, and store the value as variable **f**.

$$F = \frac{9}{5}C + 32$$

```
# ctof.exe is a Celsius to Fahrenheit conversion program
echo “This program converts Celsius to Fahrenheit”          # program definition
echo “ “                                                    # space
echo -n "what is the temperature in Celsius? ”              # user prompt
read c                                                      # reads input
let f=$c*9/5+32                                             # Fahrenheit conversion
echo "Celsius temperature $c converts to $f Fahrenheit“     # shows the answer
```

**Figure 6.5 – Computing the Formula**

## Displaying the Answer

Now that we have computed the Fahrenheit value, the only thing left to do is display the new value for the program user. To do this we'll just display a text string in quotation marks, using the commands **$c** and **$f** inside of the string to display the values of both variables.

```
# ctof.exe is a Celsius to Fahrenheit conversion program
echo “This program converts Celsius to Fahrenheit”          # program definition
echo “ “                                                    # space
echo -n "what is the temperature in Celsius? ”              # user prompt
read c                                                      # reads input
let f=$c*9/5+32                                             # Fahrenheit conversion
echo "Celsius temperature $c converts to $f Fahrenheit“     # shows the answer
```

**Figure 6.6 – Computing the Formula**

## Making the Shell Script an Executable File

Now that we are done coding in the text editor, we can save the file as **ctof.exe** or just **ctof**. If we save the file as **ctof**, we can convert it to an executable file by typing in the Bash command **chmod ugo+x ctof**. To run the program, type **sh ctof.** When prompted for the Celsius temperature, we can type 100 and the answer will return as 212 Fahrenheit.

*** World Class CAD Challenge 44-6 * - Write a Script that displays two message boxes, the first will contain the script name, copyright date and author. The second message will display information from the computer.**

**Continue this drill four times using some other messages, each time completing the VBScript in less than 30 minutes to maintain your World Class ranking.**