

# Class 3: Decisions

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## Warm-Up

*If you don't remember how to open up your text editor, look back to Worksheet 2! Or, just raise your hand.*

Once you have your computer all set up, try your best to create a program that prompts the user to type in a name, then lets us know that person is selling seashells!



`Who is selling seashells by the seashore?`

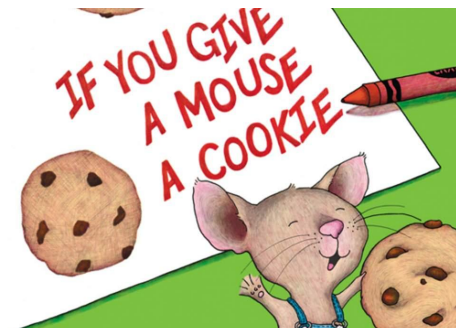
`Sally`

`Sally sells seashells by the seashore.`

## If/Then

***\*\*Even if you already did this exercise for homework, please read through this section again!\*\****

This week, we'll take a look at how to use If/Then statements to create a computer program that can make decisions. In programming, a **decision** is an action that the computer will do if certain conditions are met (of course, you get to choose what these conditions are!). Let's just start out by typing the following code:



```
print("How are you today?")  
myMood = input()  
if ("good" in myMood):  
    print("How nice!")
```

Let's take a look at what exactly this program is doing. In the first line, the computer prints the phrase, "How are you today?" On the line after that, it creates a variable ("container") called `myMood`, waits for the person using the computer to type something in, and then saves that new input in the `myMood` variable.

On the third line, we use an `if` statement. Here's what that does: the stuff in the parentheses (`"good" in myMood`) tells the computer to check and see if it can find the word "good" in the variable `myMood`. If it does, then the program will execute the list of indented actions after the colon. In other words, it will print the phrase "How nice!" for us. Let's run it now:

```
How are you today?  
good  
How nice!
```

However, if you respond to the computer saying something other than "good," you'll find that this will happen:

```
How are you today?  
bad
```

This is because the `if` condition is not satisfied. The computer can't find the phrase "good" in the variable `myMood`, so it skips over the second `print()` statement entirely.

Check out this example. Here, I combined the If/Then statements we learned today with the `input()` function. Try it out!

```
cool_kid = "Bella"

print("I heard that " + cool_kid + " is the coolest. Is
this correct?")

answer = input()

if ("no" in answer):

    print("Who is the coolest?")

    cool_kid = input()

print("OK, " + cool_kid + " is the coolest.")
```

In this program, we actually have two “then” statements, as we can tell by the two indented lines. If the computer finds the word “no” in the variable `answer`, then it prints out for us “Who is the coolest?” and also prompts the user to input the name of the new cool-kid. Try running the program:

```
I heard that Bella is the coolest. Is this correct?

no

Who is the coolest?

Christian

OK, Christian is the coolest.
```

Think about what happens when you respond “yes” instead of “no” in this program!

```
if allowed(request.querystring("startFolder"),session("username")) then
    dim filename : filename = request.querystring("filename")
    dim objFile : Set objFile = objFSO.GetFile(getPath(null,filename))
    dim currentAttr : currentAttr = objFile.Attributes
    if request("Submit") = "Save" then
        if request("attr") <> "" then objFile.Attributes = cint(request("attr"))
        set objFile = nothing
        response.write( filename & " has been saved")
    else if request("Submit") = "Cancel" then
        response.write("<form class='msgbox' method='post' />")
    else
        response.write("<form class='msgbox' method='post' />")
        response.write("<input type='text' name='filename' value='&{filename}' />")
        response.write("<input type='hidden' name='filename' value='&{filename}' />")
        response.write("<input type='hidden' name='startFolder' value='&{startFolder}' />")
        response.write("<input type='radio' name='attr' value='0' />")
        if (currentAttr AND 0) = 0 or currentAttr="" then response.write(" checked='checked' ")
        response.write("<input type='radio' value='1' />")
        if (currentAttr AND 1) = 1 then response.write(" checked='checked' ")
        response.write("<input type='radio' value='2' />")
        if (currentAttr AND 2) = 2 then response.write(" checked='checked' ")
        response.write("<input type='radio' value='32' />")
    end if
end if
```

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## If/Else

Think you got the hang of working with simple If/Then statements? Great! If you're ready, we're going to take a look at an extension of If/Then statements: the `else` statement. Let's start out by writing the following code:

```
print("What color is the sky?")
sky_color = input()
if ("blue" in sky_color):
    print("That's right!")
else:
    print("That's not quite right...")
```

Now, let's look at this program a little closer to understand what's happening. First, the computer asks the user what color the sky is, then stores their answer in the variable `sky_color`. Next, the computer tests to see if the phrase "blue" is in the variable `sky_color`. If it is, then the computer will print "That's right!"

```
What color is the sky?
blue
That's right!
```

Otherwise, if the computer does not find the phrase "blue" in `sky_color`, then it will skip over the indented "then" statement, and move along to the `else` statement instead:

```
What color is the sky?
green
That's not quite right...
```

Basically, the `else` statement is really just the programmer's way of saying "otherwise." In the above program, the computer expects the user to answer with the word "blue." *Otherwise*, it'll tell you "that's not quite right!"

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## If/Else: Additional Notes

Finally, today, we're going to look at the `elif` statement. Really, the statement `elif` is just a shorter way of combining the phrase `else if`. In other words, it's the programmer's way of saying "Otherwise, if..."

Check out the 5th and 6th lines of the program below to see the `elif` statement in action!

```
print("What color is the sky?")
sky_color = input()
if ("blue" in sky_color):
    print("That's right!")
elif ("black" in sky_color):
    print("Wow, it's night time already?")
else:
    print("That's not quite right...")
```

Here's what the above program does: after you tell it the color of the sky, it first checks if you said that the sky is "blue." If this is the case, it'll tell you that "that's right!" Otherwise, if this is not the case, then it will check for the word "black" next (and if it finds that word, it'll tell you that it's nighttime). Otherwise, if the sky is neither blue NOR black, then it'll let you know that "that's not quite right."

## Homework

Congratulations, you've made it halfway through the course! You now have all of the knowledge you need to build your own basic *Choose Your Own Adventure* game. In the next few weeks, we'll learn a few other concepts and neat tricks that will help to make your *Adventure* game more interesting, more organized, and more efficient! But for now, your homework is to work on your story using everything we've learned so far.

Experiment, have fun, and be creative!

**\*\*There will be no Extra Learning exercises this week. Take your time practicing with If/Else statements for homework. This is a very important unit!\*\***