Metropolitan State University

ICS 140 Computational Thinking with Programming

Class Exercise 5

**Lecture Section**

1. What operator can be used in the conditional evaluation of an if statement to so that both Boolean expressions must be true for the compound expression to be true?

AND

1. Conversely what operator is used so that either Boolean expression can be true for the compound expression to be true?

OR

1. When is the short-circuit evaluation performed for an or statement?

When the first expression is true

1. What are the only possible values available for a Boolean variable?

True or false

1. What operator can be used to reverse the value of a Boolean expression?

Not variable

**Writing iffy statements**

Write the python code for the following situations. I have highlighted variable names in bold.

1. Print “bad weather” if **temperature** is greater than 100 or less than 0.

If temperature > 100 or temperature < 0:

Print(‘bad weather’)

1. Print “Great weather” if **temperature** is between 65 and 75.

If temperature > 65 and temperature <75:

Print(‘great weather’)

1. Print “Class Cancelled” if **severe\_weather** is True and **class\_format** is “On Campus”

If severe\_weather == True and class\_format==’on campus’:

Print(‘class cancelled’)

1. Print “Class as Scheduled” if **class\_format** is not equal to “On Campus” or **severe\_weather** is False.

If class\_format != “on\_campus” or not severe\_weather:

Print(‘class as scheduled’)

1. Print True if variable **x** is greater than **y** and less than **z**. Otherwise print False.

If y< x < z:

Print(‘True’)

Else:

Print(‘False’)

Print(y<x<z)

**Boolean Variables**

For each of the questions in this section, read the code and indicate whether True or False is printed.

1. What is printed for the code below:

a = True

b = False

c = True

d = a or b or c

print(d)

True

1. What is printed for the code below:

a = True

b = True

c = False

d = a and b and c

print(d)

False

1. What is printed for the code below:

a = True

b = True

c = True

d = a and b and c

print(d)

True

1. What is printed for the code below:

a = True

b = True

c = False

d = a and b and c

print(d)

False

1. What is printed for the code below:

a = True

b = not a

print(b)

False

1. What is printed for the code below:

a = False

b = not a

print(b)

True

**Programming Exercise**

For the following exercise, you will be writing a program to calculate rewards for a book club. Serendipity booksellers has a book club that awards points t its customers based on the number of books purchased each month. The points are awarded as follows:

* If a customer purchases 0 books, they earn 0 points.
* If they purchase 2 books, they earn 5 points.
* If they purchase 4 books, they earn 15 points.
* If they purchase 6 books, they earn 30 points.
* If they purchase 8 or more books, they earn 60 points.

The program should ask the user to enter the number of books that they have purchased this month and then displays the number of points awarded.

It should look something like this when run:

Text

Description automatically generated

Copy the python code in the section below.

**Python Code**

A screenshot of a computer

Description automatically generated

Take a screenshot of tests for each point range.

**Test Results**

**A screen shot of a computer program

Description automatically generated**