Review

NMT CSE/IT 107

- Office: Cramer 218
- Office Hours: Tues, Wed 3-5

Things you should know

- Variable assignment - $x = 10$
- Boolean Expressions. $x > 10$, $x == 10$, $x != 10$
- Boolean logic. True and False, True or False, etc
- Conditionals. If, elif, else
- Loops. while, for, continue, break
- Objects have attributes. Accessed by dot operator. str.format, str.split, etc...
- Casting. Convert a variables data type.
- Functions. Defined using **def**. Used with (). e.g dir(1)

```
1   message1 = "Hello"
2   message2 = "World"
3   template = "{} {}"
4   final_message = template.format(message1, message2)
```

```
1   x = 10.0233411234123443624
2   template = 'the value of x is {}"
3   message = template.format(x)
```

```
1   x = 10.0233411234123443624
2   template = 'the value of x is {:0.3f}"
3   message = template.format(x)
```

```
for item in collection:
    body
```

```
1    word = "Python"
2    for character in word:
3        print(character)
```

Reserve Words

```
1  # conditionals
2  if, else, elif, while, for, break, continue, in
3
4  # builtin functions
5  dir, abs, round, print
6
7  # data types. use as a function to cast
8  int, float, str, bool
```

- input. Use the **input** function to prompt user for text input

```
1   password = input('Please enter your password >>>')
```

- import Use the **import** reserve word to gain access to other libraries.

```
1   import math
2   area = math.pi*radius**2
```

Demo in terminal

```
1   def calculate_circle_area():
2       # when testing hard code user input.
3       # Don't waste time always typing input.
4       # The last step should be dealing with user input
5
6       radius = 10
7       # radius = input('Enter the radius: ')
8
9       area = 3.14 * radius ** 2
10      return area
```

- Company XYZ & Co. pays all its employees $12 per hour and time-and-a-half for overtime. A typical employee works between 20 and 65 hours per week. Develop a program that determines the wage of an employee from the number of hours worked.
- XYZ's tax accountants always use programs that compute income taxes even though the tax rate is a solid, never-changing 15%. Modify the previous program to determine the tax on the gross pay and calculate an employee's net pay.

See payroll.py and payroll2.py

- The Circle Company is looking for a program to calculate attributes of a circle. Write a program that allows a user to input a radius and select which attribute to display. Required attributes to display are area, circumference, diameter.