

**Programming Lessons 1 – 3:
Comments & Calculations,
Variables,
and
Collecting User Input**

Comments

- Lines of code that are not “read” by the computer
- Used to provide clarification to readers
- Use the # symbol to declare comments

```
salary1 = 15 #dollars per hour
```

```
#Determine their account and print the current balance  
account_number = raw_input("Now, what is your account num
```

Performing Calculations

Operation	Operator Symbol	Example
Addition	+ (plus symbol)	print 16 + 4
Subtraction	- (subtraction symbol)	print 16 - 4
Multiplication	* (asterisk)	print 16 * 4
Division	/ (back-slash)	print 16 / 4
Remainder (Modulus)	% (percent sign)	print 16 % 4
Exponent ("to the power of")	** (double asterisk)	print 16**4

Variables

- a variable is storage location (like a locker)
- variables can be store a variety of “data types”
 - Integers
 - Decimals
 - Letters
 - Words/Phrases
- Variables are “declared” using the equals sign
- Names of variables must be one “word” and cannot be a special python word
 - Can’t use **print** or **import** or **if**, etc.

```
a = 5
favoriteNumber = 12
taxes_paid = 76.25
first_Name = "Mike"
```

Performing Calculations with Variables

- Use symbols for calculations (+ - * / <) same as you would with numbers

```
a = 5
```

```
b = 10
```

```
c = a + b # c would equal 15
```

```
d = a * b # d would equal 50
```

```
b = b + 5 # b would now equal 15
```

```
b += 5 # b would now equal 20
```

```
a = a * 5 # a would now equal 25
```

```
a *= 5 # a would now equal 125
```

Printing Variable Values

- First Way: Using **print** alone

```
print first_Name  
print money_Saved
```

- Second Way: Using Commas

```
print "Welcome to ", bank_Name, "bank today."
```

- Third Way: Using % Symbol

```
print "Hello today %s." % (first_Name)  
print "Wow %s saved $%d!" % (first_Name, money_Saved)
```

Collecting User Input

- Python function: **raw_input()**
 - Function returns something that must be assigned to a variable

```
a = raw_input()
```

```
print "What is your name?"  
my_name = raw_input()
```

```
print "What is your name?"  
my_name = raw_input("> ")
```

```
my_name = raw_input("What's your name? ")
```

Data Types

- **Boolean:** 1 (True) or 0 (False)
- **Integer:** Holds an integer value
- **Float:** Holds a decimal value
- **Char:** Holds a single character
- **String:** Holds many characters/words/
phrases

Collecting User Input – Part II

- `raw_input()` always returns a **string**
- if you want to use it as a number (like an integer or a float), you need to **cast** what is returned

```
print "How much money did you make?"  
payCheck = float(raw_input())
```

```
print "How old are you?"  
years_old = int(raw_input())
```