

新年快乐 / 新年快樂
Xīnnián kuàile

Cung Chúc Tân Xuân



Bon
Nouvel An
Chinois!

Selamat
Tahun
Baru!

Happy Lunar New Year!

Chúc Mừng Năm Mới

过年好 / 過年好
Guò nián hǎo

새해 복 많이 받으세요
saehae bog manh-i bad-euseyo

I just got fired from my job
at the keyboard factory.

Thank you Steve!

They told me I wasn't
putting in enough shifts.

Source: TYPECASTING, <https://www.rd.com/jokes/computer/>

CMPT 120

Lecture 14 – Unit 2 – Cryptography and Encryption –

The realm of secret codes

Python – A closer look at functions

Last Lecture

- Introduced **functions**
- Restructured our **OddEvenEncryption** program by adding two **functions**:
 - **encrypt(...)** and **decrypt(...)**
- We looked at another iterative statement:
 - **while** loop
- Lasted **OddEvenEncryption** program now posted on our course website!

Today's Menu

- Investigating different kinds of **functions**
- Looking at the execution flow when Python executes our functions

Different kinds of functions?

- **Problem Statement:**
 - Create a function that prints “*” 5 times in a row

Different kinds of functions?

- **Problem Statement:**

- Create a function that returns the sum of the first 10 integral numbers

Different kinds of functions?

- **Problem Statement:**

- Create a function that asks the user for her/his name and prints the given greeting

- **Requirement:**

- We must incorporate the user's name within the greeting

Different kinds of functions?

- **Problem Statement:**

- Create a function that returns the largest number out of 3 numbers

- **Requirement:**

- We cannot use the `max ( )` built-in function
- We cannot use the word `max` to name your function

Different kinds of functions

Activity: Fill this table using functions we have used so far!

	Function that takes argument(s)	Function that does not take argument(s)
Function that returns a result (i.e., a returned value)		
Function that does not return a result (i.e., a returned value)		

Execution Flow with Functions

- Let's first examine what happens to the **execution flow** when we call functions
 - using the **Python code visualizer**

Guidelines to follow!

- When creating a **function**, ask yourself these **3 questions**:
 1. What does the function do?
 - **Tip:** The answer should be used to name the function
 2. Does the function needs data to operate i.e., data from the other functions or the main part of our program?
 - If so, the function must have parameters and the function must be called with arguments
 3. Must the function return a value?
 - If the function produces a result then it must return it to the caller (not same as printing the result!)

Your turn!

- **Problem Statement:**
 - Create a function that prints a character x number of times in a row
- **Requirement:**
 - Let's not forget about the **Generalization Principle**

Next lecture

- We shall introduce another field of Computing Science:
 - **Graphics and Animation**
- We shall introduce a fun Python module:
 - **Turtle**