# CS202: PROGRAMMING PARADIGMS & PRAGMATICS

Semester II, 2020 – 2021

Lab 5: Introduction to Python

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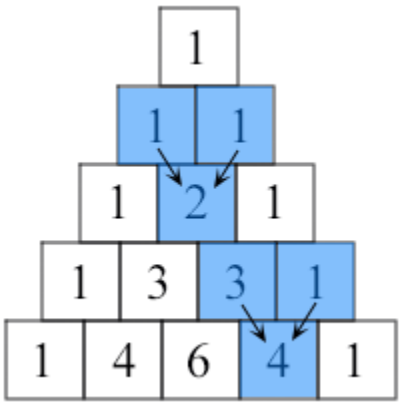
**Aim**: Introduce you to programming in Python quickly!

- **Let's get started!**
  - Create a directory structure to hold your work for this course and all the subsequent labs:
    - Suggestion: `CS202/Lab5`
- **Python Basics**
  - For this part, refer to `Python Basics.pdf`
  - Note: This part has been adapted from : https://www3.ntu.edu.sg/home/ehchua/programming/webprogramming/Python1_Basics.html
  - Considering that you all have decent amount of experience with programming in C, C++ and now in Java and Perl, you are only expected to run through the above document quickly. Try to focus on differences from other languages!
  - Once you are comfortable with the basics, attempt the following exercises.
- **Exercise 1:**
  - Write a program (using functions!) that asks the user for a long string containing multiple words. Print back to the user the same string, except with the words in backwards order. For example, say I type the string: *My name is Michele* Then I would see the string: *Michele is name My* shown back to me.
  - Create and save this program in a file named `ReverseString.py`
- **Exercise 2:**
  - Write a Python function that prints out the first 'n' rows of Pascal's triangle. Sample Pascal's triangle is shown below:




  - Create and save this program in a file named `PascalTriangle.py`

- **Exercises 3:**
  - Write a program (function!) that takes a list and returns a new list that contains all the elements of the first list minus all the duplicates.
    - Write two different functions to do this - one using a loop and constructing a list, and another using sets (call these functions `RemDupLoop` and `RemDupSet`)
  - Create and save this program in a file named `RemoveDuplicates.py`

- **Submitting your work:**
  - All source files as one tar-gzipped archive.
    - When unzipped, it should create a directory with your ID. Example: **2008CSB1001** (NO OTHER FORMAT IS ACCEPTABLE!!! Case sensitive!!!)
    - ***Negative marks if the TA has to manually change this to run his/her scripts!!***
  - Source files should include the following: (Case-Sensitive file names!!)
    - `ReverseString.py` [5 Points]
    - `RemoveDuplicates.py` [5 Points]
    - `PascalTriangle.py` [5 Points]
  - ***Negative marks for any problems/errors in running your programs***
  - Submit/Upload it to Google Classroom