THE UNIVERSITY OF WESTERN AUSTRALIA

CITS1401
Computational Thinking with Python

THE UNIVERSITY OF WESTERN AUSTRALIA

Lecture 0
Introduction

My introduction

- Unit Coordinator: Dr. Ghulam **Mubashar** Hassan
- Consultation time : 2 – 3 PM TUESDAYS
- My research areas: Artificial Intelligence, Machine Learning interdisciplinary problems & Engineering Education
- Website: www.csse.uwa.edu.au/~00080148/
- Office: **CSSE Room: 2.12**

Teaching team

- **Laboratory demonstrators**
  - ***Naeha** Sharif*
  - ***Saqib Ejaz Awan***
  - ***Nayyer Aafaq***
  - ***Daniel Cowen***

- **Admin/enrolments/labs/etc.**
  - *CSSE Reception (**Rosie Kriskans**) or admin-csse@uwa.edu.au*

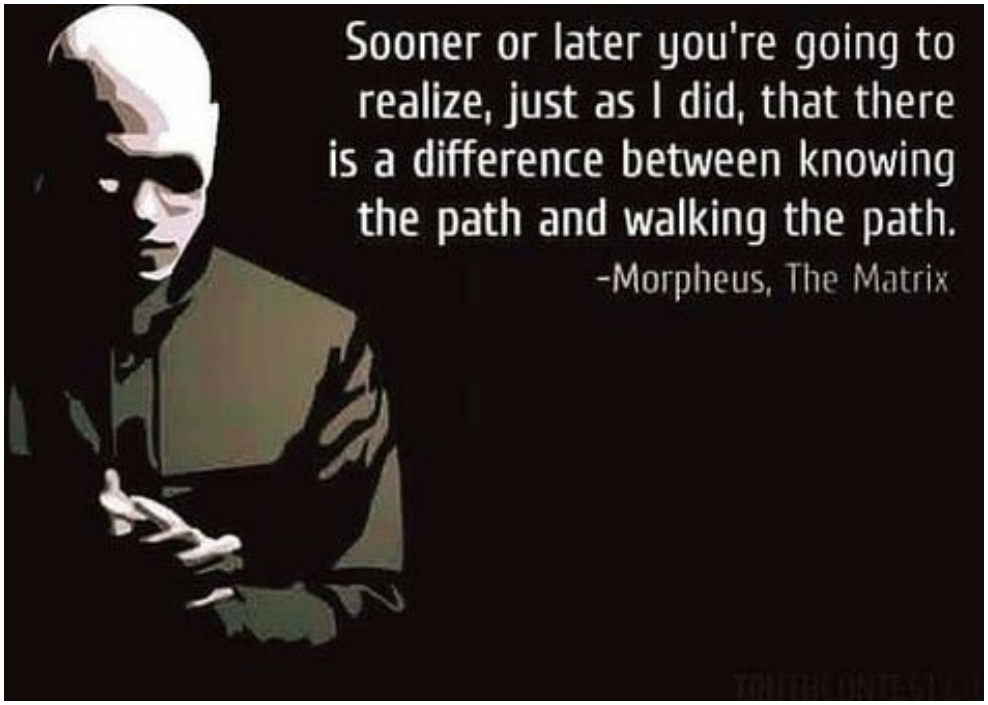
What is CITS1401 About?

- CITS1401 is about computer-based problem solving
  - *How to formulate the problem in a computer language as series of steps*
- Will say a little about computers and how they work, and also about how to solve problems using programs
- Shall be using Python 3 as our computer language
  - *Please do not use Python 2. Related dialect, but incompatible*

Course Outcomes

- Understand how a computer works
- Understand how to express a problem in computational terms
- Be able to write a program in Python 3 to:
  - *Solve small problems*
  - *Automate repetitive computational tasks*

Teaching Strategy



Textbook and Resources

- "Python Programming: An Introduction to Computer Science (3e)", *John Zelle, Franklin Beedle.*
- All CITS1401 resources (including PDFs of the lectures) can be found on the LMS page for the unit
  - *You need to be enrolled in the unit to see the page*
- All submissions will be made by LMS
- *Few students need to rely on LMS due to travel ban.*

Organisation

- 2 x 1hr lectures a week and 1 x 1hr Workshop
  - *Both lectures and workshop slots will be treated in similar manner. The contents of workshop are embedded in the lectures to make them more interactive.*
  - *They are recorded and available on LCS*
  - *The lectures slides you find on LMS do not necessarily correspond to timetabled lecture/workshop slots.*
  - *Slots are, in fact 45 mins, starting on the hour*

Organisation

- 1 programming lab per week (2 hrs)
  - *Lab demonstrator is available*
  - *Starts Week 2*

- Check your Timetable
  - *multiple time slots across the week*
  - *Feel free to drop in any session if you can find a space*

Labs - Expectations

- Five labs are **assessed** and rest non-assessed
- If you want to do well in the unit you should attend at least one lab session per week
  - *Some learning in the unit, particular related to problem solving, will only take in labs*
- If you cannot finish the lab in time then you can take it home or come to another session. Students are encouraged to work on their own pace.
- You are welcome to attend as many lab sessions as you want
  - *preference to those timetabled to be there*

Labs - Expectations

- You are welcome and encouraged to bring your own laptop with Thonny installed. (You may also bring them in lectures/workshops)
- **This is your time to work on relevant exercises from labsheets with help at hand**
- *The contents covered in labs are part of the course and it may be more than you have covered in the lectures*

Programming Environments

- In the lab you will use Python 3.5 (or above) via the Thonny IDE
  - *An integrated software development environment where you can write, edit, execute and debug programs*
- Thonny is student oriented. It is a free software available for all major operating systems such as Windows, OS, Linux. Python 3.5 or above is built in
  - *Not phones (Android or iOS)*
- You can download Thonny from http://www.thonny.org

Assessment

- Assessment is based on both
  - *Understanding of fundamental concepts*
  - *Practical problem-solving and programming skills*
- Two exams:
  - *Mid-semester Exam : **Wed. in Week 8** (worth 15%)*
  - *Final Exam (worth 50%)*
- Two programming projects
  - *Project 1 due **Mon. 8:00 am of Week 8** (worth 13%)*
  - *Project 2 due **Fri. 5:00 pm of Week 12** (worth 17%)*
- Five lab sheets due ***Fri. 5:00 pm of Week 11*** *(worth 5%)*

Getting Help

- Discussion Forum on LMS
- Labs
- Textbook

- Above all, seek help early

Svengraph, WikiMedia

Do Something Useful in Week 1

- Get your pheme login and password
- Organize your UWA email account
- Obtain your timetable (online)
- Get familiar with the CITS1401 LMS website
- Install Thonny (it comes with recent version of Python)

Other Stuff

- Interesting Things page
  - *Feel free to share interesting things. Email them to me*
- Studiosity help link
- I have set slides in Century Schoolbook font (with some Courier and Arial for computer code and meta–language). If you have trouble reading it, please let me know
  - *Accessibility is important*

Other Stuff

- "10 Signs You Will Suck at Programming"
  - *Article linked to Interesting Things page*
  - *Has really great advice about what you need to succeed at programming*
  - *READ IT*
- Engage with the unit!!!
  - *Good data to show that if you turn up to lectures and generally engage with the unit, you will do better (Drouin, 2014, Edwards & Clinton 2018) – see Interesting Stuff*

PheobeA - Redbubble

Acknowledgements

- It is important to acknowledge the PPT slides for this unit are based on a slide deck supplied by *John Zelle* (textbook author), though modified, augmented and reordered by *Michael Wise* and *Ghulam Mubashar Hassan*