INF1511 Unit 2 Visual Programming I

Decisions (IF… ELIF)

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Primary Lecturer
for INF1511

Define tomorrow.

UNISA college of science, engineering and technology

INF1511 NEWS!!!

- We still have NO appointed e-tutors.
- Please use the additional resources from the safari / o’reiley sources.

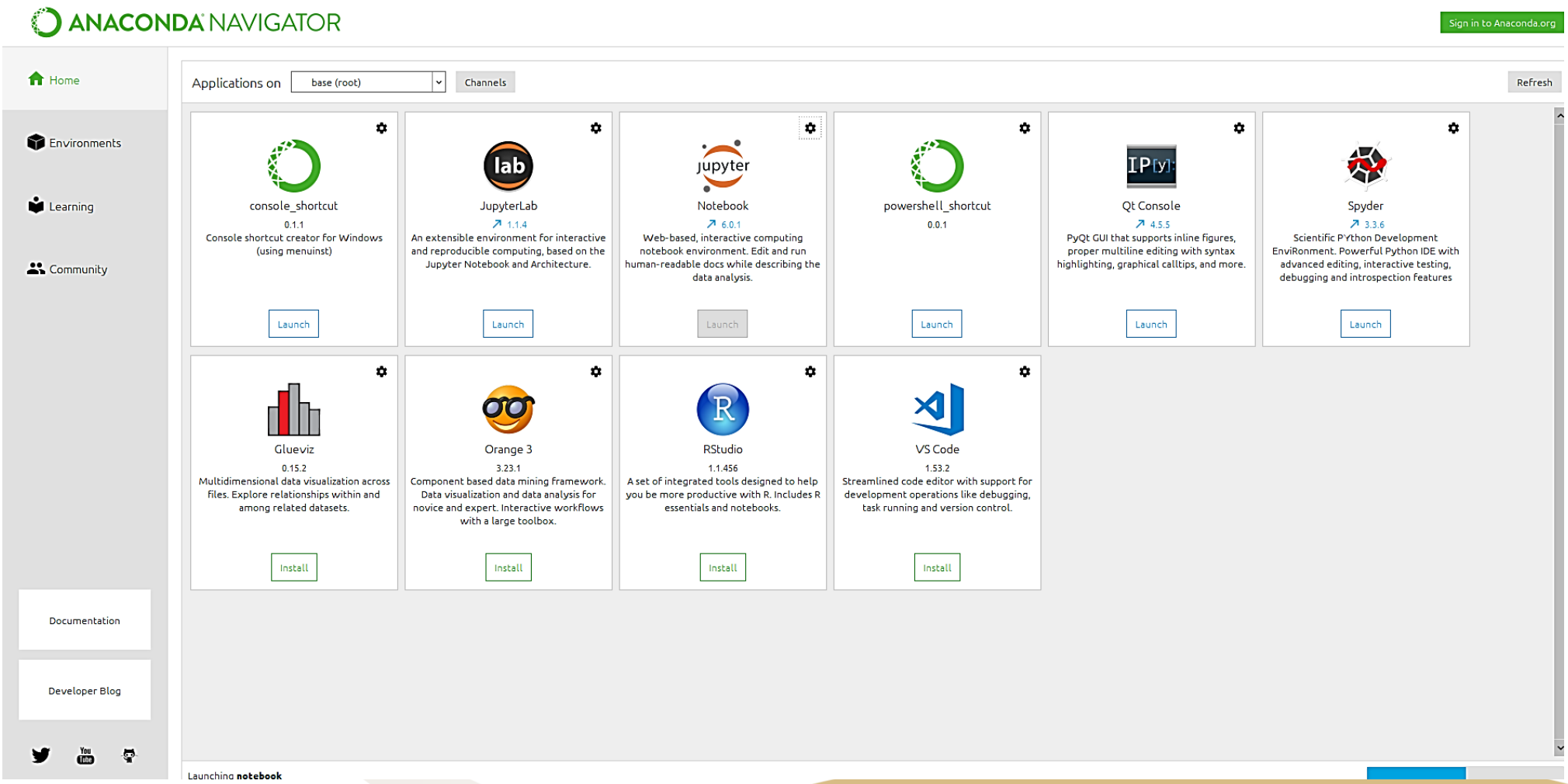
Overview

- Set Up of the programming environment.
- The theory of decisions in programming and the IF … ELIF structure.
- The practical application (and demonstration) of decisions in programming.
- The assessment of learning in this unit.
- The additional resources available for this unit.

Environment Set-Up ***

- Please read the read-me-first document.
- On the internet, find ANACONDA installation.
- Install ANACONDA,

ANACONDA


ANACONDA NAVIGATOR
Sign in to Anaconda.org
Home
Environments
Learning
Community
Documentation
Developer Blog
Applications on
base (root)
Channels
Refresh
console_shortcut
0.1.1
Console shortcut creator for Windows (using menuinst)
Launch
JupyterLab
1.1.4
An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture.
Launch
Notebook
6.0.1
Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis.
Launch
powershell_shortcut
0.0.1
Launch
Qt Console
4.5.5
PyQt GUI that supports inline figures, proper multiline editing with syntax highlighting, graphical calltips, and more.
Launch
Spyder
3.3.6
Scientific PYthon Development EnviRonment. Powerful Python IDE with advanced editing, interactive testing, debugging and introspection features
Launch
Glueviz
0.15.2
Multidimensional data visualization across files. Explore relationships within and among related datasets.
Install
Orange 3
3.23.1
Component based data mining framework. Data visualization and data analysis for novice and expert. Interactive workflows with a large toolbox.
Install
RStudio
1.1.456
A set of integrated tools designed to help you be more productive with R. Includes R essentials and notebooks.
Install
VS Code
1.53.2
Streamlined code editor with support for development operations like debugging, task running and version control.
Install
Launching notebook

Theory – What are decisions in programming?

- Input required to decide.
- *If it is raining, then you use an umbrella!*
- Input from …..
- A system. Input, processing and output.
- Use the input to decide on the processing code execution, which will determine the output

Flow Control in Programming

- Linear ….
- Decisions … select a flow control for execution.
- Repetition … use flow control to execute code multiple times.

Decisions in Programming

- The decision determines the processing, and the processing determines the output of the system.

Programming elements

- Literals - _____
- Variables - _____
- Keywords (30 in Python … and else elif exec …)
- Comments #

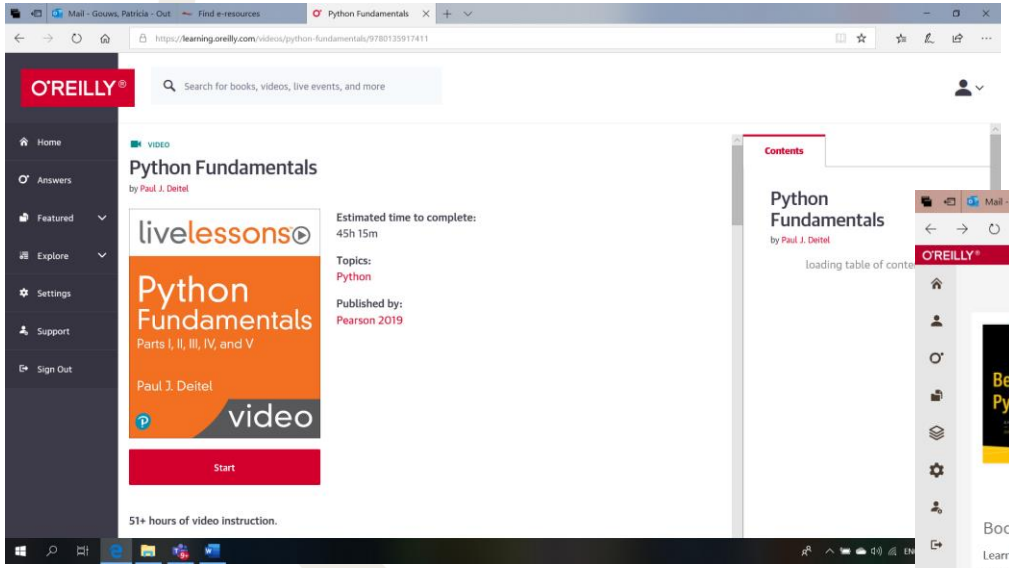
- A keyword is IF and ELIF

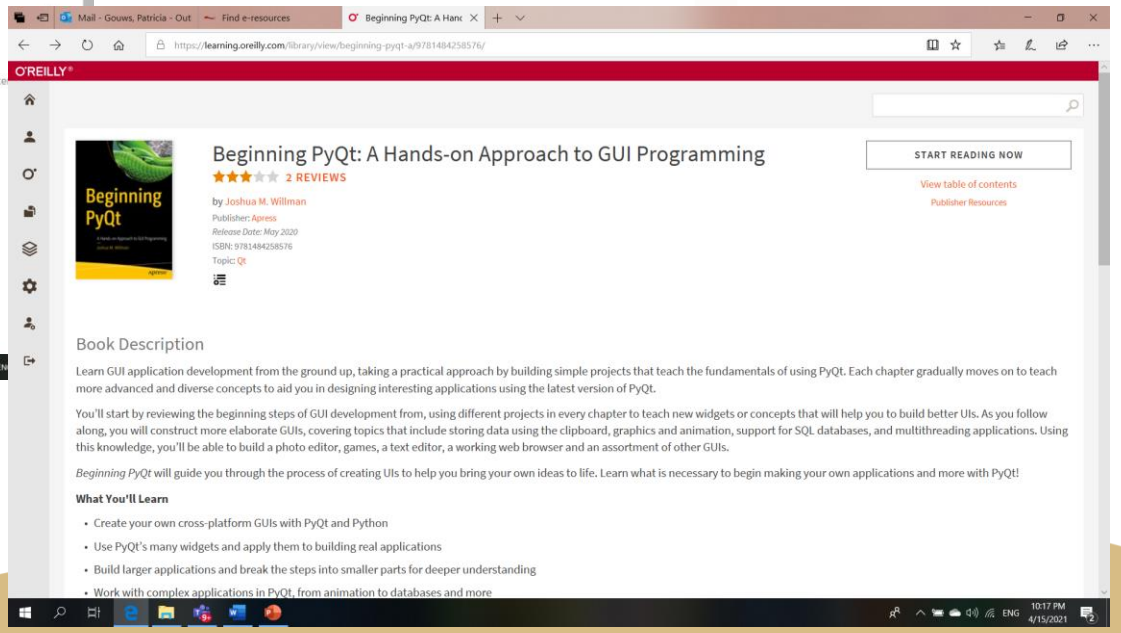
Assessment for Unit 2

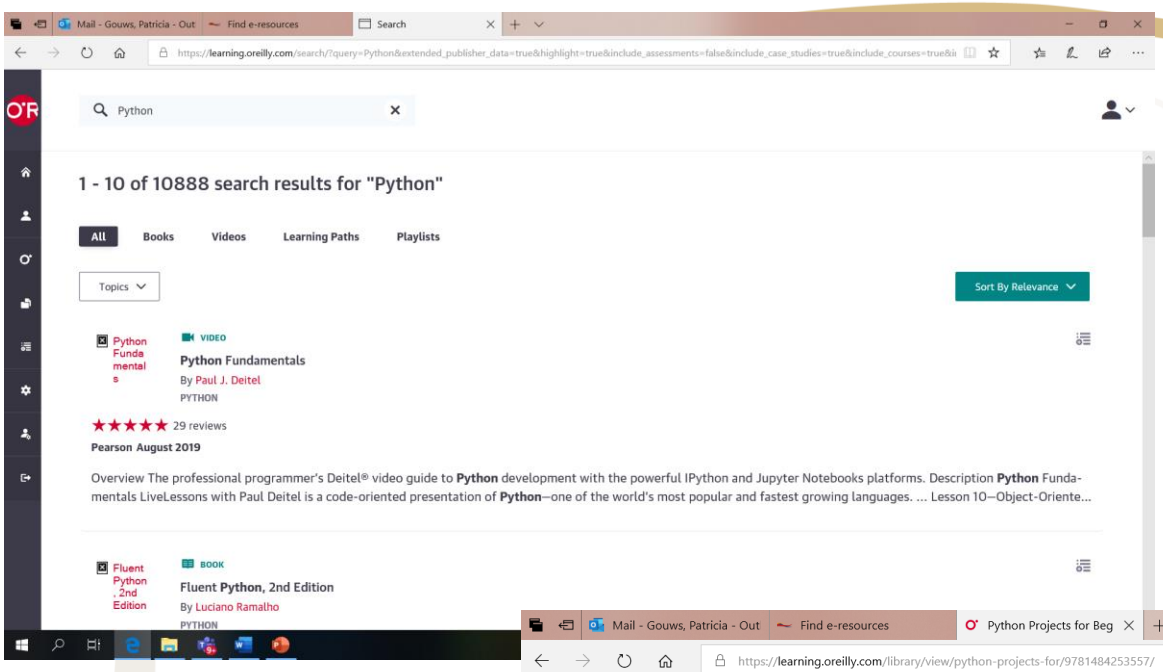
- **Theory MCQ quiz is** available. 3 attempts. Available until 9 October 2023.
- **Programming activities** on Jupyter Notebook page. Available today. Practise! Use this to complete Assignment 2.
- **Practical MCQ quiz** (Assignment 2) is available. One attempt. Available until 9 October 2023.

Additional Resources and Information

- See Safari Additional Books (document on MS Teams)



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VIDEO
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29 reviews
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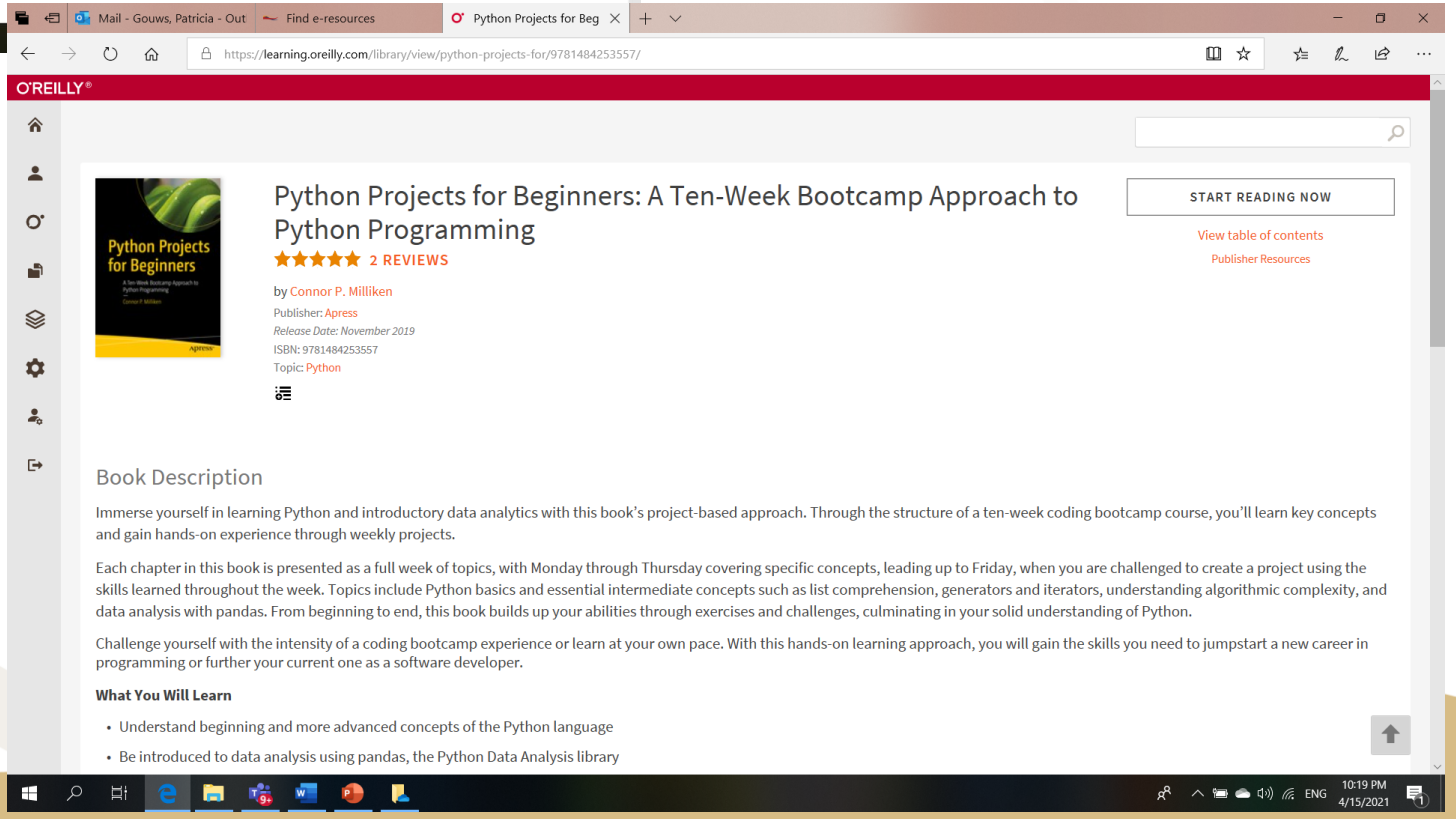
BOOK
Fluent Python, 2nd Edition
By Luciano Ramalho
PYTHON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Python Projects for Beg
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O'REILLY®
Python Projects for Beginners: A Ten-Week Bootcamp Approach to Python Programming
2 REVIEWS
by Connor P. Milliken
Publisher: Apress
Release Date: November 2019
ISBN: 9781484253557
Topic: Python
START READING NOW
View table of contents
Publisher Resources
Book Description
Immerse yourself in learning Python and introductory data analytics with this book's project-based approach. Through the structure of a ten-week coding bootcamp course, you'll learn key concepts and gain hands-on experience through weekly projects.
Each chapter in this book is presented as a full week of topics, with Monday through Thursday covering specific concepts, leading up to Friday, when you are challenged to create a project using the skills learned throughout the week. Topics include Python basics and essential intermediate concepts such as list comprehension, generators and iterators, understanding algorithmic complexity, and data analysis with pandas. From beginning to end, this book builds up your abilities through exercises and challenges, culminating in your solid understanding of Python.
Challenge yourself with the intensity of a coding bootcamp experience or learn at your own pace. With this hands-on learning approach, you will gain the skills you need to jumpstart a new career in programming or further your current one as a software developer.
What You Will Learn
• Understand beginning and more advanced concepts of the Python language
• Be introduced to data analysis using pandas, the Python Data Analysis library
ENG
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Summary

Unit 2 - Decisions. The implementation of decisions in programming uses the IF ELSE programming structure.

The value of the decision determines the code that will be executed.

Assessment Criteria for Unit 2:

2.1 The if-else statement is used for decision-making.
2.2 A problem is solved by the application of decision-structure.
2.3 Logical and Membership operators are being used.

Thank you