

# Practical Portfolio Task 03

## Python / Raspberry Pi Final

### Instructions to the Assessor

<b>Type of Assessment:</b>	Practical Portfolio Task – Graded by: observational checklist
<b>Duration of Assessment:</b>	1 Session (3 hours)
<b>Location of Assessment:</b>	<ul style="list-style-type: none"><li>• Thornlie Campus: Block 8, Room 8G27</li></ul>
<b>Conditions:</b>	<ul style="list-style-type: none"><li>• This assessment is to be completed by individual students.</li><li>• Student must be deemed satisfactory for all listed skills in the <i>observational checklist</i> document.</li><li>• The assessment is “open book” to simulate a practical work environment; “open book” refers, but is not limited to:<ul style="list-style-type: none"><li>◦ Language and API reference documentation</li><li>◦ Manual pages</li><li>◦ Web searches</li><li>◦ Student typed or hand-written notes.</li></ul></li></ul>
<b>Elements and Performance Criteria:</b>	Refer to DAP and Unit Mapping documents.
<b>Required Skills and Knowledge:</b>	Refer to DAP and Unit Mapping documents.

### Instructions to Students

<b>Student Outcomes:</b>	Successful completion of this assessment should demonstrate the following outcomes: <ul style="list-style-type: none"><li>• Have knowledge of and observe OHS policies and procedures when carrying out work</li><li>• Object-oriented programming language features</li><li>• Object-oriented programming language operators</li><li>• Object-oriented language control structures</li><li>• File access</li><li>• Classes and Objects</li><li>• Graphical Output / Graphical Elements</li></ul>
<b>What is Assessed:</b>	Refer to DAP
<b>Duration of Assessment:</b>	1 Session (3 hours)
<b>Materials Allowed:</b>	<ul style="list-style-type: none"><li>• Object-oriented language reference documentation</li><li>• API documentation</li><li>• Hand-written or typed notes</li></ul>
<b>Resources Required:</b>	<ul style="list-style-type: none"><li>• Provided by Assessor:<ul style="list-style-type: none"><li>◦ Raspberry Pi</li><li>◦ Raspberry Pi Sense HAT</li><li>◦ Micro SD Card</li><li>◦ USB Power Brick</li><li>◦ HDMI to DVI-D cable</li><li>◦ Internet-connected Lab PC</li></ul></li></ul>

# Assessment Instructions

For this assessment you will be required to create a basic Python program that reads data from the *env\_data.csv* file (created as part of *Practical Portfolio Task 02*) and generates a line chart using the *pygal* module. You will be required to demonstrate knowledge of established OHS procedures and best practices (e.g. safe handling practices), Python language features, operators, control structures, syntax, Classes, Objects, file access, and generation of graphical elements using a module.

Be sure to read all task requirements carefully before you begin this assessment.

## Task requirements:

You are required to write a Python program that fulfils the following requirements:

- Must read data from the *env\_data.csv* file (either your own or the one provided):
  - The data is to be output as a line chart using the *pygal* module.
  - Each data can be displayed on its own chart or collectively (i.e. one chart each for temperature, humidity and pressure OR all data on one chart).
- The data should be plotted with reference to time.
- Program must contain reasonable documentation. Programs with no documentation will require resubmission.
- Program must be reasonably tested with example or actual data to ensure code functionality.

The above are the **minimum** program requirements. Minimum requirements must be met for you to be deemed competent for this assessment. If **any** requirements are not fulfilled you will be required to resubmit. Extra functionality is permitted but will not be assessed.