

WJEC GCSE Computer Science

Approved by Qualifications Wales

Pre-released Materials Sample

Unit 2: Computer Programming

Teaching from 2025

For award from 2027



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Pre-released materials sample

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SAMPLE

PRE-RELEASE MATERIAL

BRIEF:

Pentre Bach Pre-School (**PBPS**)



Original Requirements

Pentre Bach Pre-School (PBPS) serves the village of Parkwood Vale in South Wales and has the capacity to care for up to 150 pupils.

PBPS currently stores details about staff and pupils using a paper-based system. Its office manager would like to begin storing data on a computerised system. Whilst the pre-school could buy an off-the-shelf package, he has decided to develop a bespoke solution and has requested your expertise in planning and developing this system.

Main Menu and Navigation

Most of PBPS's staff are non-specialist computer users. They have requested that the system be user friendly and therefore, require you to develop a Graphical User Interface (GUI) for intuitive navigation.

PBPS has stated that they require a main menu containing options that allow users to carry out tasks in separate windows. It must also provide access to a window for adding new usernames and passwords.

Authentication

Data security is an essential legal requirement. The system must have a login screen that requires a username and a password for authentication of multiple users to access its system. The system must display a message stating whether login was successful or unsuccessful and only allow access to the main menu if the login is successful.

Adding Staff

PBPS requires the following staff details to be stored:

- Staff ID
- First name
- Surname
- Address 1
- Address 2
- Postcode.

The GUI window should also include buttons that:

- save the staff details to a file called **StaffDetails.txt**
- return to the main menu.

Below, PBPS has provided an initial design of the GUI window they would like developed:

Add staff Record

StaffID	<input type="text"/>
Firstname	<input type="text"/>
Surname	<input type="text"/>
Address 1	<input type="text"/>
Address 2	<input type="text"/>
Postcode	<input type="text"/>

Back Save

Payroll

PBPS pays staff for the hours worked and requires accurate calculations of the amount of pay for each staff member.

Users will enter the monthly salary (gross pay) and the system will calculate and display deductions, and the correct amount of take-home pay (net pay).

The following calculations should be used for the prototype software:

Tax	19% of gross pay
National insurance	8.5% of gross pay
Pension contribution	10% of gross pay
Deductions	tax + national insurance + pension contribution
Net pay	gross pay – deductions

An initial design for the GUI window has been provided:

The diagram shows a window titled "Payroll". On the left side, there is a vertical list of labels: "Gross Pay", "Tax", "National Insurance", "Pension Contribution", "Deductions", and "Net Pay". To the right of each label is a rectangular input field. In the center of the window is a rounded rectangle labeled "Calculate". At the bottom of the window is another rounded rectangle labeled "Back".

PBPS would like the system developed using the Python programming language.