

# PYTHON PROGRAMMING / PSEUDOCODE WORKBOOK

Handwritten Alternative Assessment Worksheet

Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Instructions:** Use this sheet to write down your solutions by hand using either standard Python syntax or clear Pseudocode (e.g., using keywords like OUTPUT, USERINPUT, IF, FOR, WHILE). Ensure proper indentation for block structures!

## 1. OUTPUT TO THE SCREEN

### Task 1a & 1b: Basic Screen Print

Write code to display "Hello World!" and then a custom welcome message on the next line.

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### Task 1c: Multi-line Block Output

Write a segment that displays a structured paragraph across three distinct lines.

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## 2. STORING DATA IN VARIABLES

### Task 2a & 2b: String Variables & Concatenation

Create a variable named 'language' and assign it a value, then output a full sentence joining that variable.

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### Task 2c: Multi-Variable Sentence Assembly

Assign words to five separate variables (word1 to word5) and print them together spaced out cleanly as a unified statement.

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### 3. INPUTTING DATA

#### Task 3a & 3b: Text Capture & User Greet

Prompt the user to enter their first and last name separately, store them, and output a dynamic hello message.

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#### Task 3c: Input Multiplication

Prompt for a name, then output that name repeated 5 times horizontally with explicit gaps.

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### 4 & 5. CALCULATIONS & DATA TYPE CASTING

#### Task 5a: The Type Concatenation Correction

Write the program that safely inputs two independent numbers, casts them to integers, sums them, and explicitly outputs the total as text.

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#### Task 5b: Geometric Area Tool

Capture width and height parameters from a user, compute the area, and display the numerical product.

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#### Task 5c: Advanced Float Calculations

Input a decimal radius and height. Calculate and display the volume of a cylinder (Use value: 3.14159).

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Formula hint: Volume = 3.14159 \* (radius squared) \* height

## 6. SELECTION (CONDITIONAL BRANCHES)

### Task 6a: Multi-choice Knowledge Quiz

Ask the user for the capital of England. Evaluate if it's correct ('London'), conditionally close ('Manchester'), or completely wrong.

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### Task 6b: Logical Match Checker (SNAP)

Write a code snippet using a single logical compound condition to check if three separate variables hold an identical match.

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### Task 6c: Score Boundary Evaluator

Input a dynamic integer mark and cascade down standard multi-tier grade boundaries ( $A \geq 70$ ,  $B \geq 60$ ,  $C \geq 50$ ,  $D \geq 40$ , otherwise U).

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## 8 & 9. ITERATION (LOOPS)

### Task 8c: Arithmetic Table Generator

Write a count-controlled loop (FOR) that captures an input integer and loops exactly 10 times to display its multiplication chart.

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### Task 9a & 9b: Validation & Sequence Constraints

Write a conditional loop (WHILE) that forces a user to keep guessing a gateway string entry until it precisely matches 'apple'.

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### Task 9c: 'Higher or Lower' Game Engine

Write a complete routine that tracks a target number, increments guess counters, and tells the user whether to look 'Higher' or 'Lower'.

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## 10 & 11. SUBROUTINES & COLLECTION LISTS

### Task 10a & 10c: Defined Functions & Structural Output

Define a subroutine named 'triangle' taking a parameter 'height' that prints rows of expanding '\*' characters sequentially.

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### Task 11a: Active List Collector

Initialize an empty array. Loop infinitely to append input names to it until the string 'END' is caught, then display total array length.

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## 13. PERSISTENT FILE ARCHITECTURE

### Task 13a & 13b: Sequential Data I/O Stream

Write pseudocode to safely open a file named 'names.txt', loop through and print out every stored value line by line.

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