

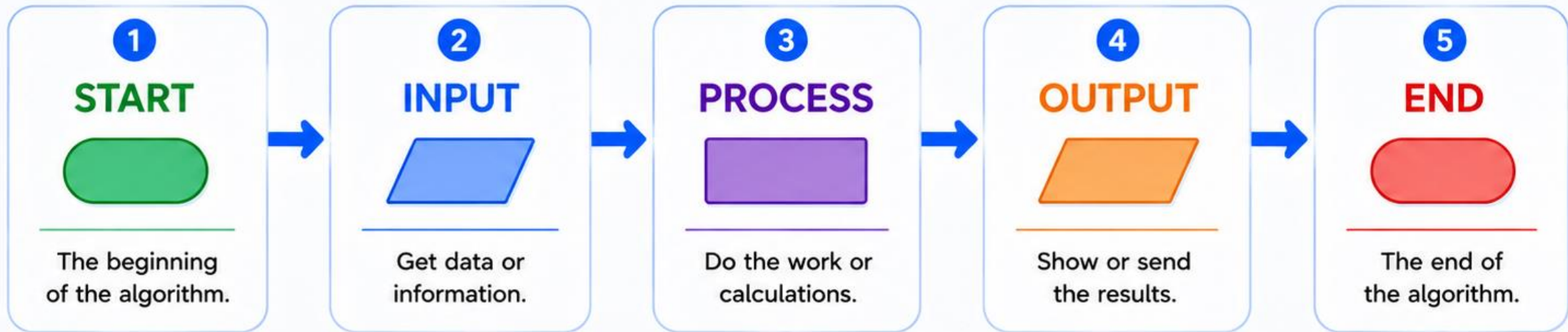
Pseudocode Elements

The building blocks of instructions
ส่วนประกอบพื้นฐานของคำสั่ง



Today's big idea:

Good pseudocode uses **clear elements**.



These five elements help us organize instructions clearly,
just like parts of a sentence help us communicate.



From Last Lesson



Last lesson:

Pseudocode =
written algorithm steps.



Today:

We learn the **parts**
that make pseudocode
easier to read.



1. ALGORITHM



Plan the steps
to solve a problem.

2. PSEUDOCODE



Write the steps
in words.

3. ELEMENTS

START

Begin the task

INPUT

Get data or information

PROCESS

Do the work or calculations

OUTPUT

Show or send the results

END

Finish the task



Today we focus on the **building blocks** of pseudocode!



Why Do We Need Elements?



Elements help us **organize** steps so others can **understand** and **follow** easily.



Without structure

The steps are mixed and **hard to understand**.

```
1 Ask name
2 Show result
3 Calculate score
```



It's difficult to know what happens first or next.



With elements

The steps are **clear** and **easy to follow**.

```
1 INPUT name
2 PROCESS calculate score
3 OUTPUT result
```

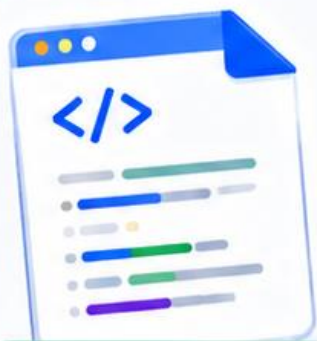
INPUT

Get the name from the user.

START and END



เริ่มต้น และ จบการทำงาน



START

START:

The first line
of pseudocode.



END

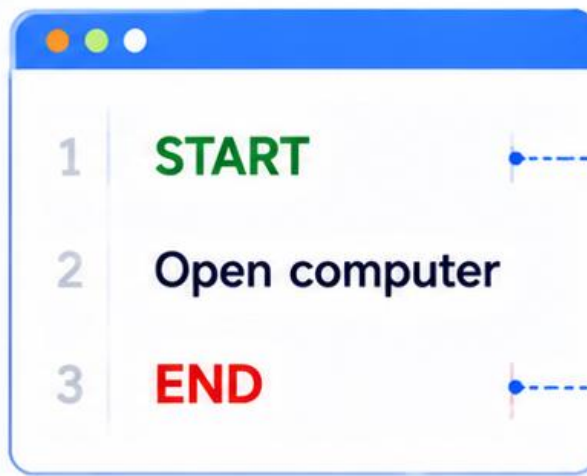
END:

The last line
of pseudocode.



Example

Example of pseudocode



First line
เริ่มต้นการทำงาน

Last line
จบการทำงาน



Every algorithm needs a beginning and an end.

START tells us where to begin, and END tells us where to stop.



INPUT



Receive information from the user



INPUT means:
Get information
from the user.



Real life:
Asking a question
and receiving an answer.

What is your name?

My name is Alex.



Examples

1

INPUT name

2

INPUT score



INPUT is the step where the program
gets data or information from the user.





OUTPUT



Display information or a result.



OUTPUT means:
Display information
or a result.



Real life:
Giving information
back.

Your total score is 85.



Examples

1

OUTPUT Hello



2

OUTPUT total score



OUTPUT is the step where the program
shows or sends information to the user.





PROCESS



Do something or change information.



PROCESS means:
Do something or
change information.



It can:

- Perform calculations
- Make changes
- Apply rules or formulas



Real life:

Working on the information
to get a new result.



Examples

1

PROCESS Calculate total

```
# Find the total price  
total = price × quantity
```



Result: 250

2

PROCESS Add numbers

```
# Add two numbers  
sum = a + b
```



Result: 20



PROCESS is the step where the program
works with the information to get a new result.



Putting Elements Together



All elements **work together** to create a complete instruction.



Example: Simple Greeting Program

- | | | | |
|---|----------------|--------------------------------------|--|
| 1 | START | Begin the program | |
| 2 | INPUT | name Get name from user | |
| 3 | PROCESS | create greeting Make a greeting | |
| 4 | OUTPUT | greeting Show the greeting | |
| 5 | END | End the program | |



Pseudocode Example

```
1  START
2  INPUT  name
3  PROCESS create greeting
4  OUTPUT greeting
5  END
```



Explain:
A program usually follows this pattern.



Good pseudocode uses elements in the **right order** to make instructions **clear** and **easy to follow**.



Example – Greeting Program

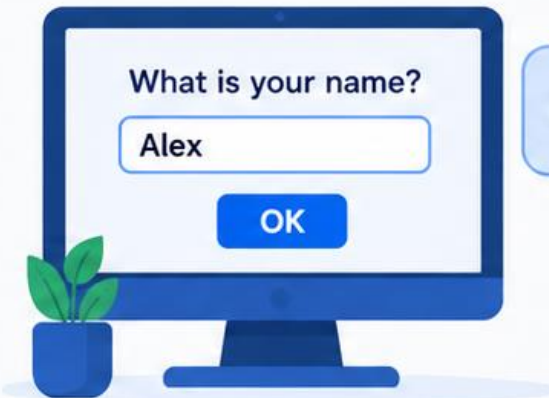


Let's apply the elements to create a simple program.



Problem

Create a greeting.



Example Output

Hello Alex!



Pseudocode

1 **START**

2 **INPUT** 

3 **OUTPUT** 

4

5 **END**



This program asks for a name
and then gives a greeting.



Example – Calculate Age



Let's use **input** and **process** to solve a real problem.



Problem

Calculate a person's age from their birth year.



Your age is
16 years old.



Example

- Current year: 2024
- Birth year: 2008 → Age = $2024 - 2008 = 16$



Pseudocode

1

START

2

INPUT



3

PROCESS



4

OUTPUT



+

5

END



Process detail

age = current year
- birth year

Example:

age = $2024 - 2008$
age = 16



This example shows how we use **INPUT** to get data, **PROCESS** to do a calculation, and **OUTPUT** to show the result.



Find the Element



Match each action with the correct pseudocode element.



Actions

1

Enter password



2

Show message



3

Calculate score



4

Start program



Elements

PROCESS



INPUT



START



OUTPUT



Tip

Remember:

INPUT = get data

OUTPUT = show data

PROCESS = do something

START = begin



Knowing the elements helps us write **clear pseudocode**.



Element Sorting Activity



Sort each example instruction into the correct element.



Your task: Classify each instruction by dragging it to the correct category.



Tip

Think about what each instruction does:

- **START** = begin
- **INPUT** = get data
- **PROCESS** = do something
- **OUTPUT** = show data
- **END** = finish

START

INPUT

PROCESS

OUTPUT

END

Instructions

Display welcome message

Read user name

Calculate total price

Start program

Show results

Get user choice

Add numbers

End program

Input password

Check answer

Guided Practice

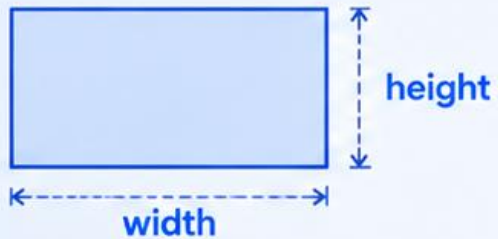


Let's create pseudocode together!



Problem

Calculate rectangle area.



$$\text{Area} = \text{width} \times \text{height}$$



Tip

Follow the steps we learned:

START → INPUT → PROCESS → OUTPUT → END



Information

1 Need width



2 Need height



3 Calculate area



4 Show answer



Pseudocode

Write the pseudocode here.

1 START

2 INPUT

3 PROCESS

4 OUTPUT

5 END



Work together and build the pseudocode step by step.



Complete the Missing Element



Look at the pseudocode below and answer the question.

1



START



2



INPUT score



3



_____ calculate result



4



OUTPUT result



5



END



Question

Which element is missing?

A

INPUT



B

PROCESS



C

OUTPUT



D

END



Tip: Remember the order: START → INPUT → PROCESS → OUTPUT → END



Activity – Build Your Pseudocode



Create your own pseudocode for one of the tasks below.



Choose one task

1



Calculate average score

or

2



Make greeting message

or

3



Calculate shopping price



Build your pseudocode

Write your pseudocode here.



Use these elements

Use all of the elements in the correct order.



START



INPUT



PROCESS



OUTPUT



END



Tip: Plan your steps first, then write them clearly in order.



Activity Worksheet



Use this worksheet to plan your pseudocode.



Problem:



Input:



Process:



Output:



Tip: Think about what data you need, what to do with it, and what to show.



Pseudocode

Write your pseudocode below.

1

START

2

3

4

5

⋮

N

END

Share and Compare



Share your work with your partner or group and compare your ideas.



Share your pseudocode

Example:

- 1 **START**
- 2 **INPUT** score
- 3 **PROCESS** calculate result
- 4 **OUTPUT** result
- 5 **END**



Discussion Questions

- 1 Which **INPUT** did you use?
- 2 What **PROCESS** happened?
- 3 What **OUTPUT** was created?



Listen, ask questions, and learn from each other!



Different ideas can help improve your solution.



Quick Review



Let's check what you've learned!



Answer the questions below.

1

What does
INPUT do?



2

What does
OUTPUT do?



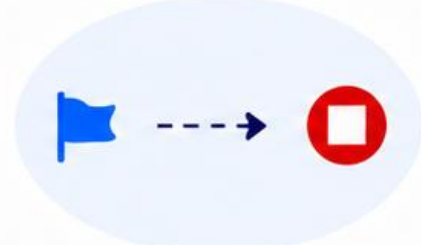
3

What is
PROCESS?



4

Why do we use
START and **END**?





Tip: Pseudocode is like a recipe.

INPUT the ingredients, **PROCESS** the steps, **OUTPUT** the result!



Exit Ticket



Show what you've learned before you go!

1 Match the element:



INPUT

=



OUTPUT

=



PROCESS

=

Choices to use:

Get data /
Receive data

Show data /
Give result

Calculate /
Do something

2 Write one example of pseudocode.

Example:

START



END



Tip:

Use the words **START**, **INPUT**, **PROCESS**, **OUTPUT**, and **END** to build a correct pseudocode!



The End



Great work today! You did awesome!



Remember:



Next lesson:

Decisions in Pseudocode



We'll learn how to make decisions and choose different actions!



Keep practicing and keep coding. You're doing great!

