

Introduction to Pseudocode

Writing instructions before coding / เขียนคำสั่งก่อนเขียนโปรแกรม

Today's big idea:



Pseudocode helps us write
algorithm steps before
creating a program.

รหัสจำลองช่วยให้เราเขียนขั้นตอนวิธี
ก่อนสร้างโปรแกรม



Problem



What is the task?

Algorithm



Step-by-step plan

Pseudocode

```
START —  
INPUT ...  
IF ... THEN ...  
PROCESS ...  
OUTPUT ...  
END
```

Write instructions
in simple words

Program



Turn into real code

From Last Lesson

Let's review what we learned and see what's next!

Last lesson:

Algorithm =
clear steps to solve
a problem.

ขั้นตอนวิธี =
ขั้นตอนที่ชัดเจนในการ
แก้ปัญหา



Today:

We write those
steps in a
programming-style
format.

PSEUDOCODE

START ____
INPUT ... ____
IF ... THEN ... ____
PROCESS ... ____
OUTPUT ... ____
END



Big idea: Pseudocode is the bridge between our algorithm and the program we will build.



> Why Do We Need Pseudocode? <



A problem solution can be difficult to explain.



Problem
How do we
find the largest
number in a list?
...



Pseudocode helps us:



1. Organize ideas
ช่วยจัดความคิด



2. Explain solutions
อธิบายวิธีแก้



3. Prepare for coding
เตรียมก่อนเขียนโปรแกรม

PSEUDOCODE
START
INPUT numbers
SET max = first number
FOR each number
 IF number > max
 SET max = number
OUTPUT max
END

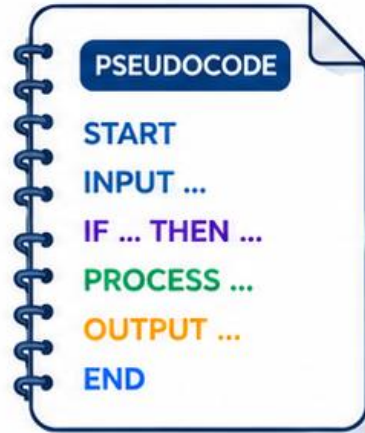


In short: Pseudocode turns complicated thoughts into clear, easy-to-understand steps.

โดยสรุป: รหัสจำลองช่วยเปลี่ยนความคิดที่ยุ่งยากให้เป็นขั้นตอนที่ชัดเจนและเข้าใจง่าย

What Is Pseudocode?

Definition



Pseudocode is a **simple** way to write instructions **before programming**.

รหัสจำลองคือการเขียนคำสั่งอย่างง่าย
ก่อนการเขียนโปรแกรม



Important



1. Easy for humans to read

อ่านและเข้าใจง่าย
สำหรับมนุษย์



2. Focuses on logic

เน้นที่ตรรกะ
และขั้นตอนวิธี



3. Not a real programming language

ไม่ใช่ภาษาคอมพิวเตอร์
ที่ใช้จริง



In short: Pseudocode is a planning tool that helps us think clearly and prepare before we turn ideas into code.



Pseudocode Is Not Real Code



Pseudocode helps us plan — but it is **NOT** the program itself.

Pseudocode

START

Open browser

Search

END

- ✓ Simple words
- ✓ Easy to understand
- ✓ Focus on steps and logic



Message:
Think first.
Code later.

Real code

```
1 print("START")
2 open_browser()
3 search("computer science")
4 print("END")
```

- ✓ Uses programming rules
- ✓ Has strict syntax
- ✓ Computer can execute



Remember: Pseudocode is for humans to plan. Real code is for computers to run.



Why Programmers Use Pseudocode

★ Pseudocode helps programmers think clearly before they code.

Pseudocode helps programmers:

1



Plan solutions
วางแผน

It helps break the problem down and plan the right steps.

2



Find mistakes
หาข้อผิดพลาด

It makes it easier to spot and fix problems early.

3



Explain ideas
อธิบายแนวคิด

It helps explain the solution in a simple and clear way.

4



Work together
ทำงานร่วมกัน

It helps teams share and understand ideas better.



Big idea: Pseudocode is a powerful thinking tool that makes programming easier and more successful.



Algorithm or Pseudocode?



They are related, but not the same!

Algorithm

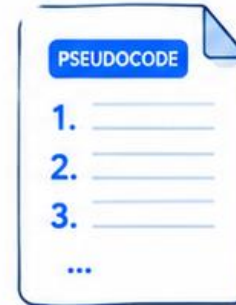


The **idea** and
order of steps.

- ✓ Explains what to do
- ✓ In your own words
- ✓ Focus on the logic and sequence



Pseudocode



The **written version**
of those steps.

- ✓ Uses simple programming-style words
- ✓ Clear and structured
- ✓ Helps prepare for real code



Activity

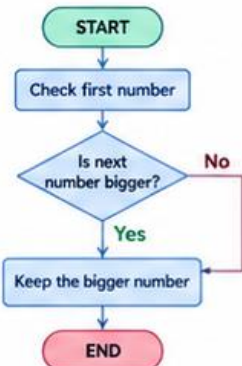
Which example is algorithm? Which is pseudocode?

Look carefully and decide!

A

Find the largest number.

1. Look at the first number.
2. Compare it with the next number.
3. Keep the bigger number.
4. Repeat until all numbers are checked.
5. The biggest number is the answer.



VS

B

PSEUDOCODE

```
START
INPUT n
SET max = first number
FOR i = 2 TO n
    IF number[i] > max
        SET max = number[i]
OUTPUT max
END
```



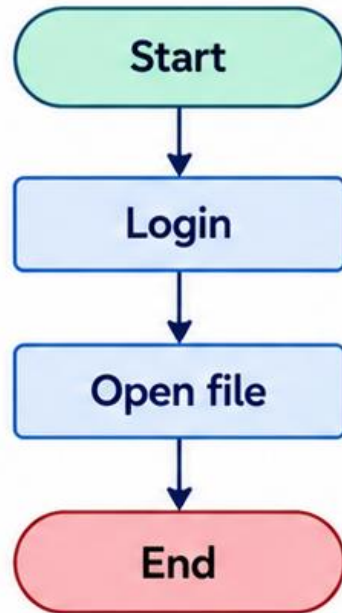
Algorithm
or
Pseudocode?

⇒ Flowchart to Pseudocode ⇒



Different look, same solution!

Flowchart

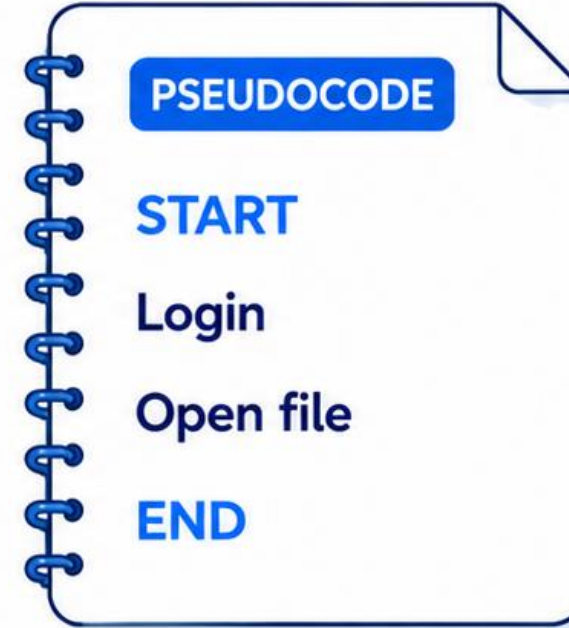


=



Both show the
same steps in
the same order.

Pseudocode



Key idea:

A flowchart and pseudocode describe the same solution in different ways.



Guided Example - Making Toast



Let's turn a daily activity into pseudocode!

Algorithm



The idea and order of steps.

1



Prepare bread

2

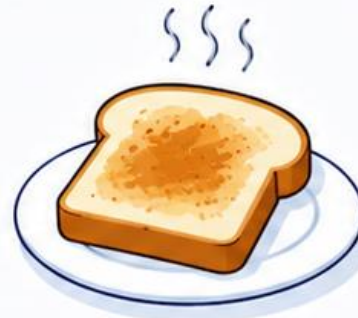


Add ingredients

3



Toast bread



Same steps,
different way
to write!

Pseudocode

PSEUDOCODE

START

Prepare bread

Add ingredients

Toast bread

END



Big idea: Pseudocode helps us write down the steps clearly before we do the real coding.



Guided Example - Login System



Let's turn a computer task into pseudocode!

Problem



Login to
a computer.

Steps (Algorithm Idea)

- 1  Open computer
- 2  Enter username
- 3  Enter password



Your Turn!

Work with your partner
or group.

Convert the steps
into pseudocode.



Pseudocode (You write!)

PSEUDOCODE

1. _____
2. _____
3. _____
4. _____
- ⋮
- END _____



Goal: Write clear steps so a computer (or a person) can follow them.



Clear or Unclear Instructions?



Clear steps help others understand and follow your instructions.

UNCLEAR INSTRUCTION

Do homework.



Why it's unclear:

- Too short
- Not specific
- Hard for others to understand

VS

CLEAR INSTRUCTIONS

1



Open notebook.

2



Read questions.

3



Answer problems.



QUESTION:

Which instruction can another person follow?
A clear instruction or an unclear instruction?



Rules of Good Pseudocode



Good pseudocode helps everyone understand and follow your ideas.

GOOD PSEUDOCODE SHOULD BE:



Clear

Easy to read and easy to understand.



Ordered

Steps are in the correct sequence.



Simple

Use simple words and short sentences.



Complete

Includes all important steps from start to end.

AVOID THESE:



Missing steps

Leaving out steps makes the instructions incomplete.



Confusing words

Using unclear or complicated words makes it hard to follow.



REMEMBER:

Good pseudocode is **clear, ordered, simple, and complete**.
Avoid missing steps and confusing words.



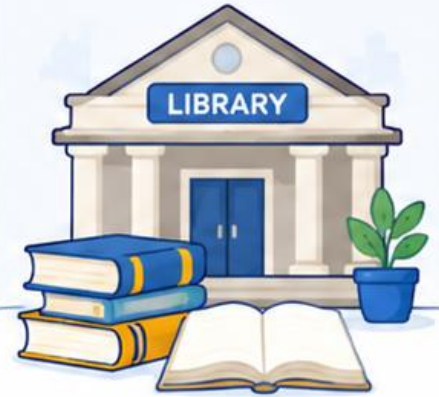
Guided Class Practice



Let's solve this problem together and write pseudocode!

PROBLEM

Borrow a library book.



STEPS (ALGORITHM IDEA)

1



Find a book.

2



Show student card.

3



Borrow book.



TASK

Convert the steps above into pseudocode.

PSEUDOCODE

1. _____
2. _____
3. _____
⋮
END _____



Remember:

Write the steps in order and use clear, simple words so anyone can follow them.



Check Your Pseudocode



Use this checklist to review your pseudocode.

WHY CHECK?



Good pseudocode is easy to read, complete, and easy to follow.



TIP

A few minutes of checking can save a lot of problems later!

PSEUDOCODE CHECKLIST

☐

Has **START**

☐

Has **END**

☐

Steps are clear

☐

Order makes sense

☐

Another person can follow it

GOOD PSEUDOCODE



Begins and ends correctly



Uses **clear** and **simple** words



Is in the **right** order



Can be **understood** by others



GOAL: Write pseudocode that is correct, clear, and easy for anyone to follow.



Activity – Write Your First Pseudocode



Choose one activity and write it as pseudocode.

1. CHOOSE ONE ACTIVITY

1 Brush teeth



2 Pack school bag



3 Login to computer



TIP:

Break the activity into small steps that are clear and in the right order.

2. WRITE YOUR PSEUDOCODE

START

1. _____
2. _____
3. _____
4. _____
- ...

END



Remember:

- ✓ Use clear words
- ✓ Write steps in order
- ✓ Include START and END



GOAL: Write clear and ordered pseudocode that someone else can follow.



Activity Worksheet



Complete each part to create your own pseudocode.

1



Problem:

What is the problem or task?

2



Goal:

What is the goal or outcome?

3



Algorithm Steps:

1. _____
2. _____
3. _____
4. _____
5. _____
- ...

Write the important steps in order.

4



Notes (Optional):



TIP:

Use clear words and write steps in the correct order so anyone can follow your pseudocode.



Pseudocode

START

1. _____
2. _____
3. _____
4. _____
5. _____
- ...

END



CHECK BEFORE YOU FINISH!

- ☐ Has **START**
- ☐ Has **END**
- ☐ Steps are clear and in order
- ☐ Another person can follow it



Share and Compare



Let's share our work and learn from each other!



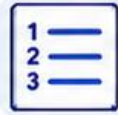
DISCUSS IN YOUR GROUP

1



What problem did you choose?

2



How many steps did you write?

3



Are the instructions clear and easy to follow?



TIP:

Listen to your friends.
Give feedback. Learn together!



GOAL: Explain your pseudocode and learn from others.



SENTENCE STARTER

“

Our pseudocode solves _____.

”



Quick Review



Let's review what we learned about pseudocode.



ANSWER THESE QUESTIONS

1



What is pseudocode?

Describe in your own words.

2



Is pseudocode real code?

Yes or No? Why?

3



Why do programmers use pseudocode?

Give one or two reasons.

4



Why does order matter in pseudocode?

Explain with an example.

THINK BACK!



Pseudocode helps us think step-by-step before we code.



Goal: Understand pseudocode and why it is an important first step in solving problems.



Exit Ticket



Answer these questions to show what you learned today.

Your learning,
your reflection! ★



Answer

1 Pseudocode means _____.

2 One benefit of using pseudocode is _____.

3 Write 3 steps for making a drink.

- 1 _____
- 2 _____
- 3 _____



Thai Support



อธิบายความเข้าใจของคุณ
(Explain your understanding)

ให้นักเรียนเขียนสั้น ๆ ว่า
วันนี้คุณเข้าใจเรื่อง "Pseudocode"
อย่างไร และจะนำไปใช้ประโยชน์
อะไรได้บ้าง
(เขียนเป็นภาษาไทย)



Do your best!

This helps your teacher know how well you understand.



Hand in your exit ticket before you leave.

