

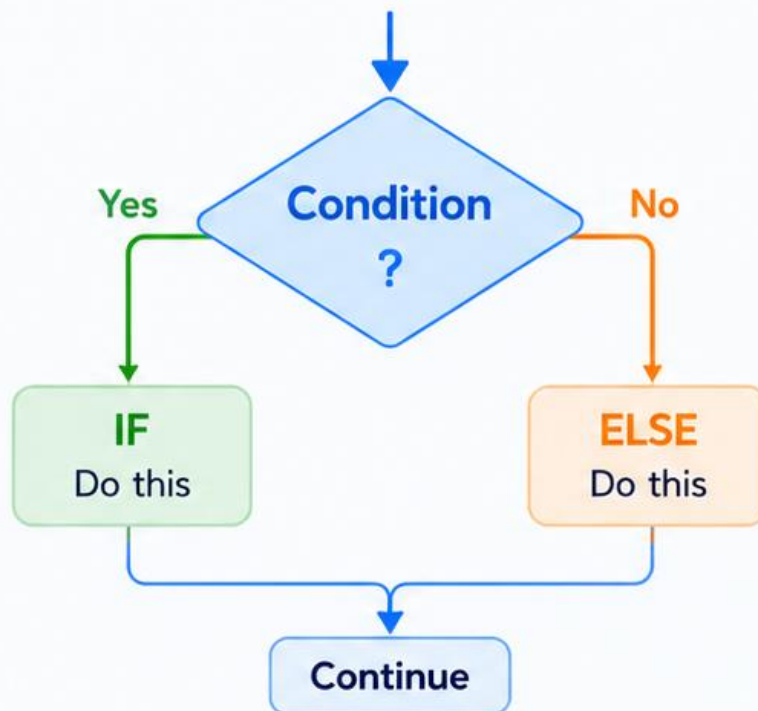
Decisions in Pseudocode

Making choices with IF / ELSE
การตัดสินใจด้วย IF / ELSE



Today's Big Idea

- ✓ Programs can make **choices**.
- ✓ **IF** checks a **condition**.
- ✓ **ELSE** gives another **choice**.



What It Means

- ? A **condition** is checked.
- ✓ If the condition is true, do the **IF** action.
- ✗ If the condition is false, do the **ELSE** action.



Condition → Decision → Action

Condition
Check something



Decision
Choose a path



Action
Do the right step



Tip

Computers follow rules to make smart choices every day!

From Last Lesson



Let's connect what we know to what we'll learn today!



Previous lesson:



This is a straight path – the program follows **one fixed sequence**.



Today:

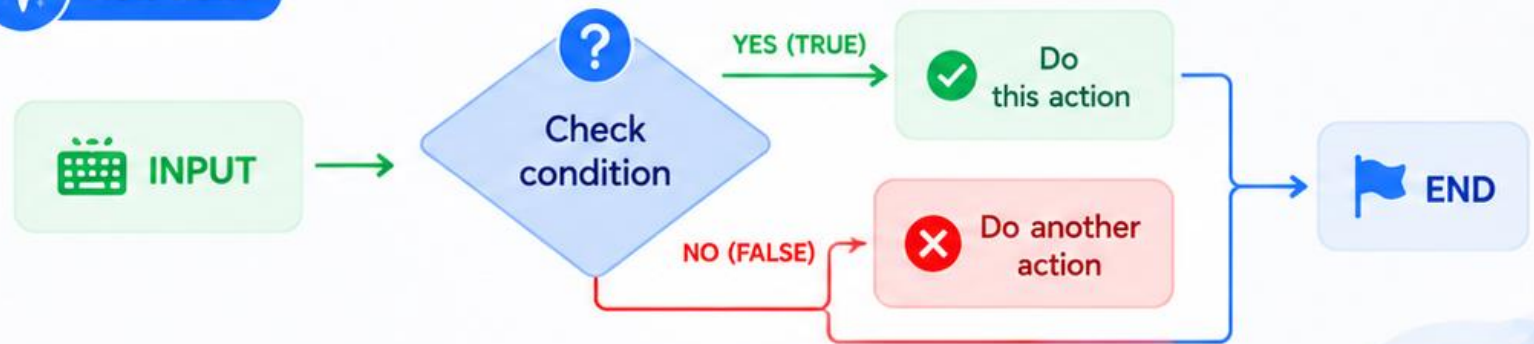
Add decisions using **IF / ELSE**.



Programs sometimes cannot follow only one fixed path.



New flow:



The program checks a **condition** and chooses the **right path**.

Decisions Around Us



We make choices every day!



Examples:

1

IF it rains:



Take an umbrella.

2

IF score is high:



Celebrate!

3

IF battery is low:



Charge phone.



Do computers also make choices?



Yes! Let's see how.



Just like us, computers **follow rules** to make the best choice.

What Is a Condition?



Condition:

A statement that can be **TRUE** or **FALSE**.



TRUE

สิ่งที่เป็นจริง



FALSE

สิ่งที่เป็นเท็จ



เงื่อนไขคือสิ่งที่สามารถเป็นจริงหรือเท็จได้.



Examples:

1

Is score ≥ 50 ?



TRUE
(Yes)



FALSE
(No)

2

Is password correct?



TRUE
(Yes)



FALSE
(No)

3

Is temperature too high?



TRUE
(Too High)



FALSE
(Normal)



A condition helps the program **decide what to do next**.



IF Statement



IF checks a condition.



What is IF?

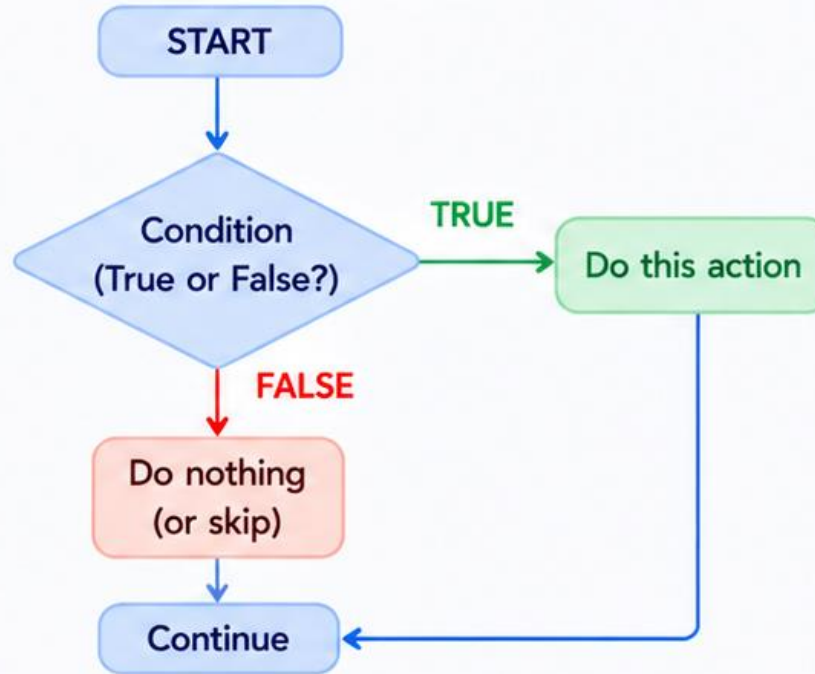
IF is used to check a condition.
If it is **TRUE**,
the program does the action.



Keyword

IF
(short for "If")
means "ถ้า"

How IF works



Example

```
IF score >= 50  
  OUTPUT "Pass"  
END IF
```



Meaning

If the condition is **TRUE**,
do the **action**.



IF is like asking a question. When the answer is **YES (TRUE)**, we do something.



ELSE Statement



ELSE gives another choice when the condition is **FALSE**.



What is ELSE?

ELSE means:
What happens when
the condition is **FALSE**.



Key idea

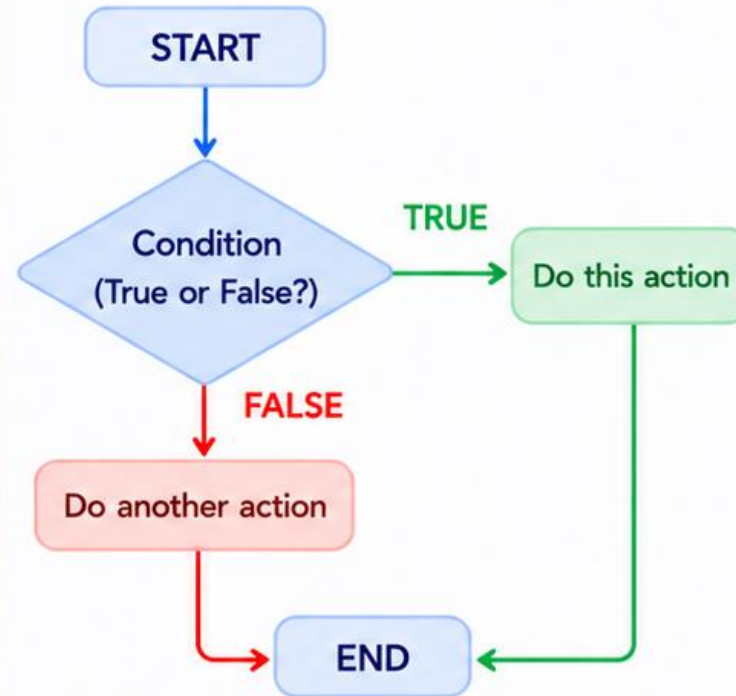


IF = when **TRUE**



ELSE = when **FALSE**

How IF...ELSE works



Example

```
IF score >= 50  
  OUTPUT "Pass"  
ELSE  
  OUTPUT "Fail"  
END IF
```



Tip

Every IF decision can have
two outcomes:
TRUE or **FALSE**.



IF checks the condition. → If **TRUE**, do the first action. → If **FALSE**, do the **ELSE** action.

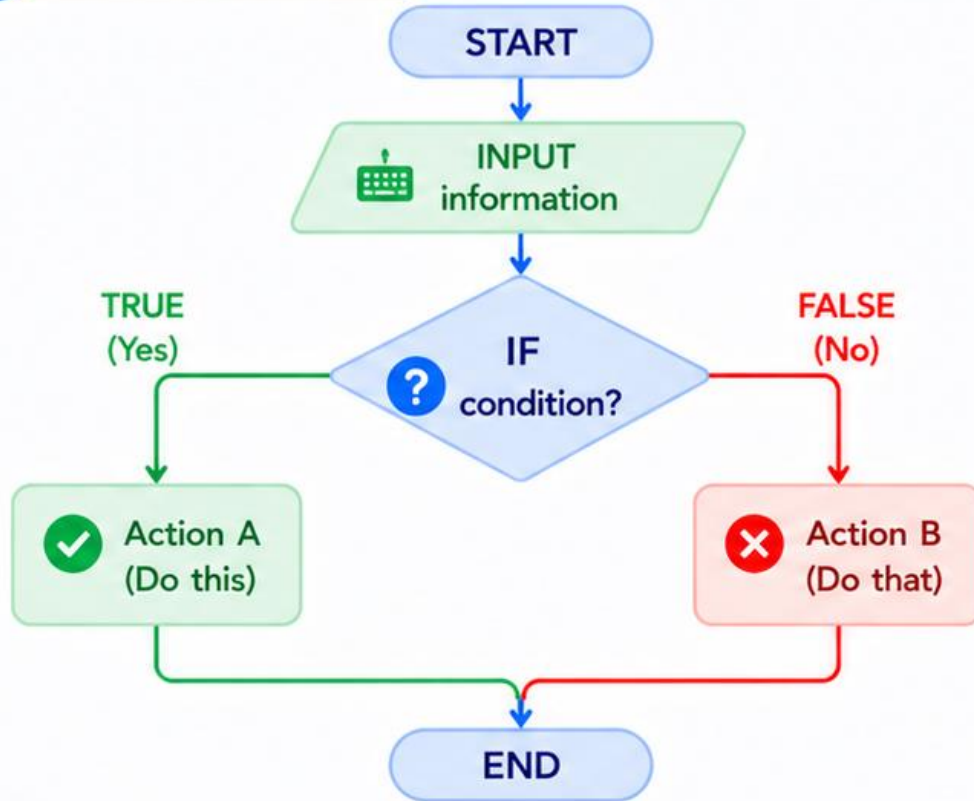
IF / ELSE Structure



A complete **decision structure** in pseudocode.



Flowchart: IF / ELSE



Pseudocode: IF / ELSE

```
START // begin
INPUT information // get input
IF condition // check condition
    OUTPUT Action A // if TRUE
ELSE
    OUTPUT Action B // if FALSE
END IF // end decision
END // finish
```



Key Points

- ✓ The condition is checked.
- ✓ If **TRUE**, do **Action A**.
- ✓ If **FALSE**, do **Action B**.
- ✓ The program follows only **one path**.



IF / ELSE helps programs make **smart choices** based on conditions.

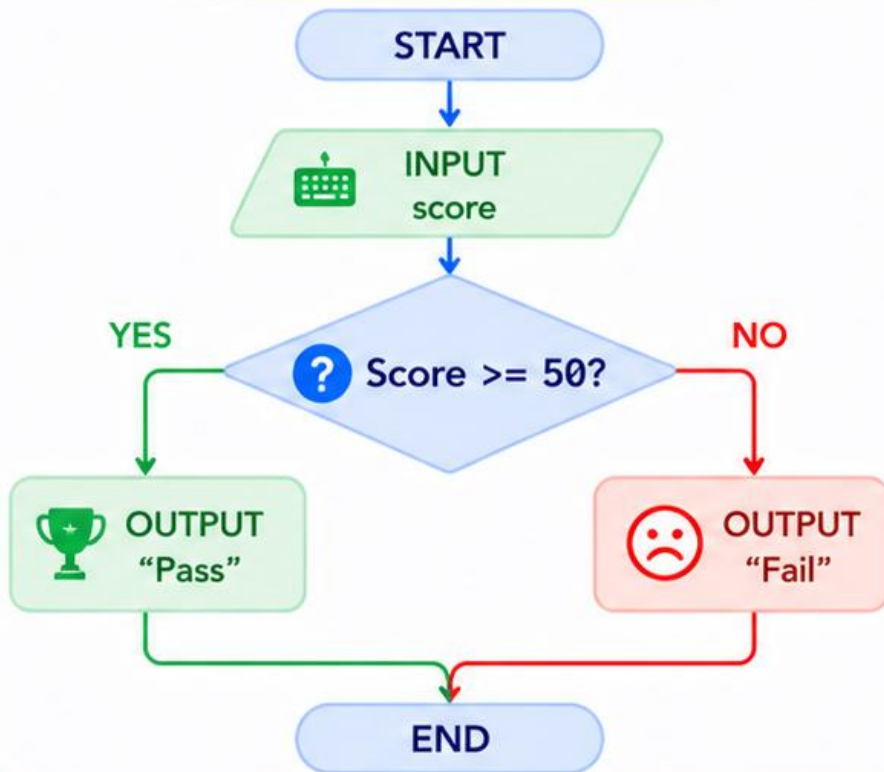
➤ Flowchart to IF / ELSE ➤



The same logic can be written as a **flowchart** or **pseudocode**.



FLOWCHART



PSEUDOCODE

```
1  START                // begin
2  INPUT score          // get score
3  IF score >= 50       // check condition
4      OUTPUT "Pass"    // if TRUE
5  ELSE                 // if FALSE
6      OUTPUT "Fail"
7  END IF              // end decision
8  END                 // finish
```



Flowcharts show the **path** with shapes.

Pseudocode writes the **steps** in text.



Example – Exam Result



Problem: Check if a student passes the exam.



PSEUDOCODE

```
1  START                // begin
2  INPUT score          // get score
3  IF score >= 50        // check condition
4      OUTPUT "Pass"    // if TRUE
5  ELSE                 // if FALSE
6      OUTPUT "Fail"
7  END                  // finish
```



What it means



Get the student's score.



Check if the score is 50 or higher.



If **TRUE (Yes)**:
Show "Pass".



If **FALSE (No)**:
Show "Fail".



This pseudocode helps the program make a **decision** based on the **student's score**.



Example – Temperature Warning



Problem: Check the room temperature and give a warning.



Problem



Check the room temperature.
If the temperature is too high,
show **“Hot”**.
Otherwise,
show **“Normal”**.



Examples



temperature = 38



Output: **Hot** 😡



temperature = 28



Output: **Normal** 😊



PSEUDOCODE

```
1  START                                // begin
2  INPUT temperature                    // get temperature
3  IF temperature > 35                  // check condition
4      OUTPUT “Hot”                     // if TRUE
5  ELSE                                // if FALSE
6      OUTPUT “Normal”
7  END                                  // finish
```



Computers use **IF / ELSE** decisions to react to real-world conditions.



Example – Login System



Problem: Check a password and allow or deny access.



Problem



The system checks the password.

If it is **correct**,
allow access.

If it is **not correct**,
ask the user
to try again.



Examples



Correct password →

Output:

Login successful



Wrong password →

Output:

Try again



PSEUDOCODE

```
1  START                                // begin
2  INPUT password                       // get password
3  IF password is correct               // check condition
4      OUTPUT "Login successful"        // if TRUE
5  ELSE                                // if FALSE
6      OUTPUT "Try again"              // action
7  END                                  // end
```



Login systems use **IF / ELSE** decisions to protect information and make sure only the right users can access the system.



Find the Condition



Task: Look at the pseudocode below.
Which part is the **condition**?



PSEUDOCODE

```
1  START
2  INPUT age
3  IF age >= 15
4      OUTPUT "Can join"
5  ELSE
6      OUTPUT "Cannot join"
7  END
```



Question

Which part is the condition
in this pseudocode?

?



Hint: The condition is the
statement that is checked
to be **TRUE** or **FALSE**.



Think carefully: The condition is what the computer checks
before choosing what to do next.





Unit 4

Pseudocode

Class Practice



Let's write pseudocode together!



Problem



Movie Entry System

A movie is only for students aged
13 or older.



Information

- **INPUT** age
- Condition: **age** $\geq$ 13



Write the pseudocode together

```
1  START
2  INPUT age
3  IF _____
4      OUTPUT _____
5  ELSE
6      OUTPUT _____
7  END
```



**Think Before
You Write**



What information
do we need?



What is the
condition?



What happens
if it is **TRUE**?



What happens
if it is **FALSE**?



Unit 4

Pseudocode

Complete the Missing Part

```
1  START
2  INPUT score
3  IF _____
4      OUTPUT Pass
5  ELSE
6      OUTPUT Fail
7  END
```



Question

What condition is missing?



Think! Use a comparison with the score to decide between Pass or Fail.





Unit 4 Pseudocode

Activity - Create a Decision Program



Choose ONE situation below and write a pseudocode program.



Choose One Situation

1



Pass or Fail

Check if a student's score is passing.

2



Hot or Normal Temperature

Check if the temperature is hot.

3



Correct or Incorrect Password

Check if the entered password is correct.



Write your pseudocode here

1

START

2

INPUT

3

IF

4

OUTPUT

5

ELSE

6

OUTPUT

7

END



Don't forget!

- ✓ START
- ✓ INPUT
- ✓ IF
- ✓ ELSE
- ✓ OUTPUT
- ✓ END



Remember

A decision program checks a condition and chooses the right action.



Challenge Yourself!

Try to make your program clear, correct, and easy to understand.



Unit 4

Pseudocode



Activity Worksheet



Fill in the blanks and write your pseudocode program.



Your Task



Problem: _____



Input: _____



Condition: _____



IF action: _____



ELSE action: _____



Pseudocode:

1

START

2

3

4

5

6

7

END



Tip

Think carefully about the condition and the actions.

Make sure your program has **START**, **INPUT**, **IF**, **ELSE**, **OUTPUT**, and **END**.





Share and Compare



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



Discuss



1

What was your condition?



2

What happens if **TRUE**?



3

What happens if **FALSE**?

Share your ideas with your classmates.



Compare your conditions and actions.



Sentence
Starter



Our program checks _____ .



Remember

Explaining your ideas
helps everyone
understand better!



Quick Review



Let's review what we learned about decisions in programs!

1



What is a condition?

2



What does IF do?

3

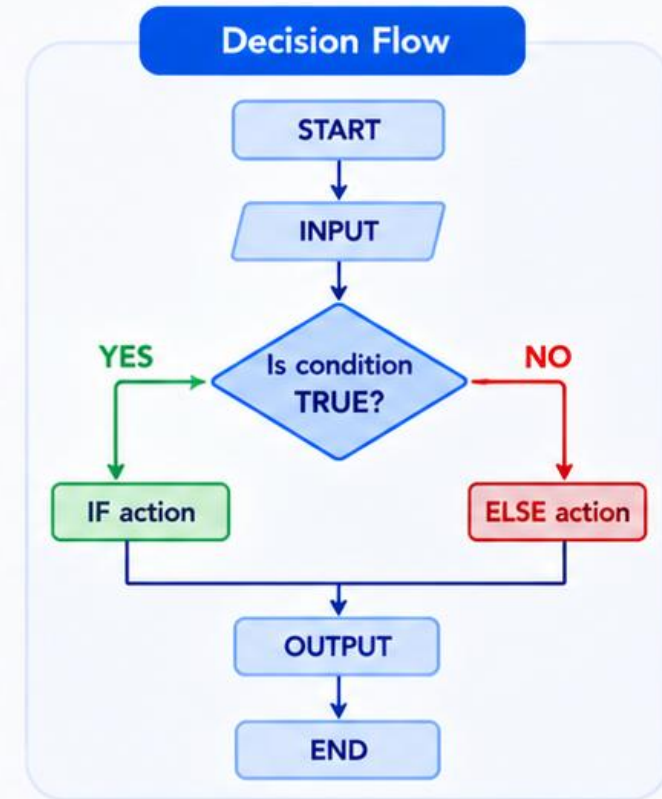


What does ELSE do?

4



Why do programs need decisions?



Key Idea

Decisions help programs choose the right actions based on conditions.





Exit Ticket



Answer the questions below before you leave.

1



IF means:

2

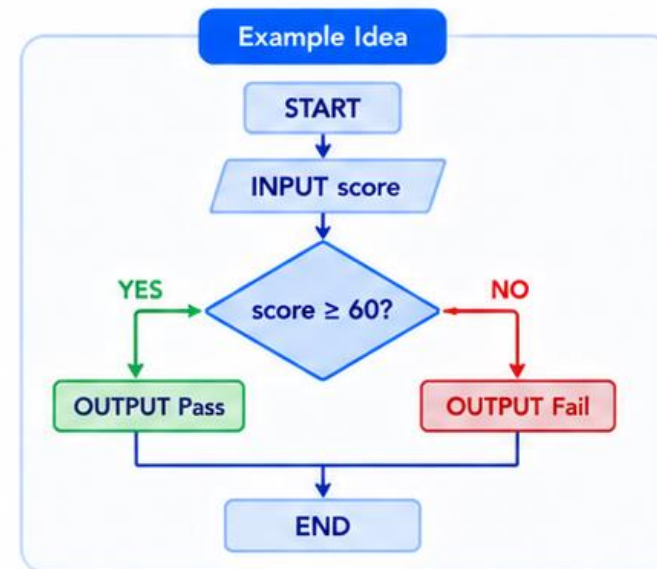


ELSE means:

3



Write one IF / ELSE example.



Remember

Decisions help
our programs
choose the right
actions!



≡ The End! ≡



Great job today! You learned how decisions help programs make smart choices.



Remember:



INPUT

Take data from the user.



Condition

Check a question.



IF / ELSE

Choose the correct path.



OUTPUT

Show the result.

Repeat to solve more problems!



Next lesson:

Pseudocode Practice Challenge



You will combine all your pseudocode skills in a fun challenge!



You did great!

Keep practicing and keep coding!



See you next time!

Let's build amazing programs together!

