

Lesson 3 Student Workbook

Input and Decisions

Today your program will ask for information, check it, and choose a message. This is one of the first steps toward robot code that reacts to sensors and driver choices.

Key Words

Word	Meaning
input	Information you type into the program.
cin	Reads input from the terminal.
condition	A true or false question.
if	Runs code when a condition is true.
else	Runs code when a condition is false.
comparison	A check such as $\geq$ or $<$.

A Battery Check Program

```
#include <iostream>

using namespace std;

int main() {
    int batteryPercent = 0;

    cout << "Enter battery percent: ";
    cin >> batteryPercent;

    if (batteryPercent >= 50) {
        cout << "Battery check passed." << endl;
    } else {
        cout << "Charge the battery before driving." << endl;
    }

    return 0;
}
```

Reading the Decision

Code	Meaning
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<code>cin >> batteryPercent;</code>	Read a number from the keyboard.
<code>batteryPercent >= 50</code>	Ask whether the number is at least 50.
<code>if (...)</code>	Run the first block when the condition is true.
<code>else</code>	Run the second block when the condition is false.

Try It

1. Create a folder named Lesson03_Input_Decisions.
2. Create or open main.cpp.
3. Type or open the starter program.
4. Compile with `g++ main.cpp -o decisions.exe`.
5. Run with `.\decisions.exe`.
6. Test with 80, then test with 20.

Prediction Table

Input	Prediction	Actual Result
80		
50		
49		
0		

Reflection

What input made the program print the first message? _____

What input made the program print the else message? _____

Why should you test both branches of an if else statement? _____