

# 6. More Migration Guide: From Python to C

## 6.1 Common Syntax Differences

Feature	Python	C
Comments	<code># This is a comment</code>	<code>// This is a comment</code>
Block Comments	<code>"""Multi-line"""</code>	<code>/* Multi-line */</code>
Code Blocks	Indentation	<code>{ }</code> braces
Statement End	Line break	<code>;</code> semicolon
Boolean Values	<code>True</code> , <code>False</code>	<code>1</code> , <code>0</code> (or <code>true</code> , <code>false</code> with <code>&lt;stdbool.h&gt;</code> )

## 6.2 Variable Declaration Migration

### Python to C Translation Examples:

```
# Python
age = 25
height = 5.9
name = "Alice"
is_student = True
```

```
// C
int age = 25;
float height = 5.9f;
char name[] = "Alice";
int is_student = 1; // or use bool with #include <stdbool.h>
```

## 6.3 Function Definition Migration (We will learn more about this on the next module)

### Python:

```
def calculate_area(length, width):
    return length * width

result = calculate_area(5, 3)
print(result)
```

**C:**

```
#include <stdio.h>

// Function declaration (prototype)
int calculate_area(int length, int width);

int main() {
    int result = calculate_area(5, 3);
    printf("%d\n", result);
    return 0;
}

// Function definition
int calculate_area(int length, int width) {
    return length * width;
}
```

## 6.4 Common Pitfalls for Python Programmers

### 1. Forgetting Semicolons:

```
int x = 5 // ERROR: Missing semicolon
int x = 5; // CORRECT
```

### 2. Using = instead of == in conditions:

```
if (x = 5) { ... } // ERROR: Assignment, not comparison
if (x == 5) { ... } // CORRECT: Comparison
```

### 3. Forgetting & in scanf():

```
scanf("%d", x); // ERROR: Missing &
scanf("%d", &x); // CORRECT
```

### 4. Array Index Out of Bounds: (We will learn more about this on the next module)

```
int arr[5];  
arr[5] = 10; // ERROR: Index 5 is out of bounds (valid: 0-4)  
arr[4] = 10; // CORRECT: Last valid index
```

---

Revision #1

Created 2025-09-01 03:36:58 UTC by DS

Updated 2025-09-01 03:37:16 UTC by DS