

# Assignment 41: Explain the following conditional directives along with their syntax?

Sure, here's an explanation of each conditional directive along with its syntax:

## 1. ``#ifndef``:

- Syntax: ``#ifndef macro_name``
- This directive checks if the specified macro is defined.
- If the macro ``macro_name`` is defined, the code block following ``#ifndef`` is included in the compilation.
- If the macro ``macro_name`` is not defined, the code block following ``#ifndef`` is skipped.

## 2. ``#if``:

- Syntax: ``#if constant_expression``
- This directive evaluates the constant expression.
- If the expression evaluates to a non-zero value, the code block following ``#if`` is included in the compilation.
- If the expression evaluates to zero, the code block following ``#if`` is skipped.

## 3. ``#defined``:

- Syntax: ``#defined macro_name``
- This directive checks if the specified macro is defined.
- It is used in conditional expressions to check if a macro is defined.
- Unlike ``#ifndef``, it is used within conditional expressions, not at the beginning of a line.

## 4. ``#else``:

- Syntax: ``#else``
- This directive is used in conjunction with ``#ifndef``, ``#if``, or ``#elif``.
- It specifies the alternative code block to be compiled if the condition specified in the preceding ``#ifndef``, ``#if``, or ``#elif`` directive is false.

## 5. ``#elif``:

- Syntax: ``#elif constant_expression``
- This directive is used in conjunction with ``#if``.
- It specifies an additional condition to be evaluated if the condition specified in the preceding ``#if`` directive is false.

- If the expression evaluates to a non-zero value, the code block following `#elif` is included in the compilation.
- `#elif` can be used multiple times within a conditional block, and it is evaluated sequentially after each `#if` or `#elif` directive until a true condition is found or an `#else` directive is encountered.

These conditional directives allow for conditional compilation in C, enabling parts of the code to be selectively included or excluded based on specified conditions.