

Basic Structure

```
#include <iostream> //Header file for input-output
operations
using namespace std; //Allow using standard
namespace
int main()
{
cout << " Hel lo, Wor ld! " << endl; //Prints
output to console
return 0;
}
```

Selection Statements

Statement	Descri- ption	Syntax
If Statement	Executes a statement if a condition is true	if (condi tion) {state men t(s) };
If-else Statement	Executes one block if the condition is true, another if false	if (condi tion) {statement (s);} else{s tat ement (s);}
Ternary Operator	A shorthand for if-else	variable = (condi tion) ? value if true : value if false;
Switch Statement	Selects a case to execute based on a variable's value	switch (ex pre ssion) {case valu e: statement; break; default: st atem ent;}

Loop Control Statements

Statement	Description
break	Exits a loop or switch statement.
continue	Skips the rest of the loop iteration and continues to the next.
exit()	Terminates the program immediately.

IF_ELSE-SWITCH

Input and Output

```
int num;
cout << " Enter a number: ";
cin >> num;
cout << "You entered: " << num << endl;
```

Repetition Statements (Loop)

Loop Type	Description	Syntax
while loop	Repeats a block of code while a condition is true.	while (condi tion) {state me n t(s);}
do- while loop	Executes at least once, then repeats while a condition is true.	do {state men t(s);} while (condi tion);
for Loop	A compact loop with initialization, condition, and increment.	for (int; condition; update) { statem ent(s); }

Types of Loop

Types	Description
Counter-Controlled Loop	Executes a set number of times.
Sentinel-Controlled Loop	Runs until a special value is entered.
Flag-Controlled Loop	Uses a bool flag to control execution.
Nested Loops	A loop inside another loop.

FOR-BREAK

for Loop Example	break Statement Example
<pre>#include <iostream> using namespace std; int main() { for (int i = 1; i <= 10; i++) { cout << i << " "; } cout << "\nLoop finished.\n"; return 0; }</pre>	<pre>#include <iostream> using namespace std; int main() { for (int i = 0; i < 10; i++) { if (i == 5) { cout << "Breaking loop at i = " << i << endl; break; } cout << i << " "; } return 0; }</pre>

CONTINUE-NESTED

continue Statement Example	Nested Loop Example
<pre>#include <iostream> using namespace std; int main() { for (int i = 0; i < 5; i++) { if (i == 2) continue; cout << "Iteration " << i << endl; } return 0; }</pre>	<pre>#include <iostream> using namespace std; int main() { for (int i = 1; i <= 3; i++) { for (int j = 1; j <= 5; j++) { cout << " "; } cout << endl; } return 0; }</pre>

if-else Statement Example	switch Statement Example
<pre>#include <iostream> using namespace std; int main() { int num; cout << "Enter a number: "; cin >> num; if (num % 2 == 0) { cout << "The number is even.\n"; } else { cout << "The number is odd.\n"; } return 0; }</pre>	<pre>#include <iostream> using namespace std; int main() { int day; cout << "Enter a day number (1-7): "; cin >> day; switch (day) { case 1: cout << "Monday\n"; break; case 2: cout << "Tuesday\n"; break; case 3: cout << "Wednesday\n"; break; case 4: cout << "Thursday\n"; break; case 5: cout << "Friday\n"; break; case 6: cout << "Saturday\n"; break; case 7: cout << "Sunday\n"; break; default: cout << "Invalid input\n"; } return 0; }</pre>

WHILE LOOP

while Loop Example	do-while Loop Example
<pre>#include <iostream> using namespace std; int main() { int count = 0; while (count < 5) { cout << "Count: " << count << endl; count++; } return 0; }</pre>	<pre>#include <iostream> using namespace std; int main() { int num; do { cout << "Enter a positive number (-1 to exit): "; cin >> num; } while (num != -1); cout << "Program terminated.\n"; return 0; }</pre>



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