Decision-Making Statements

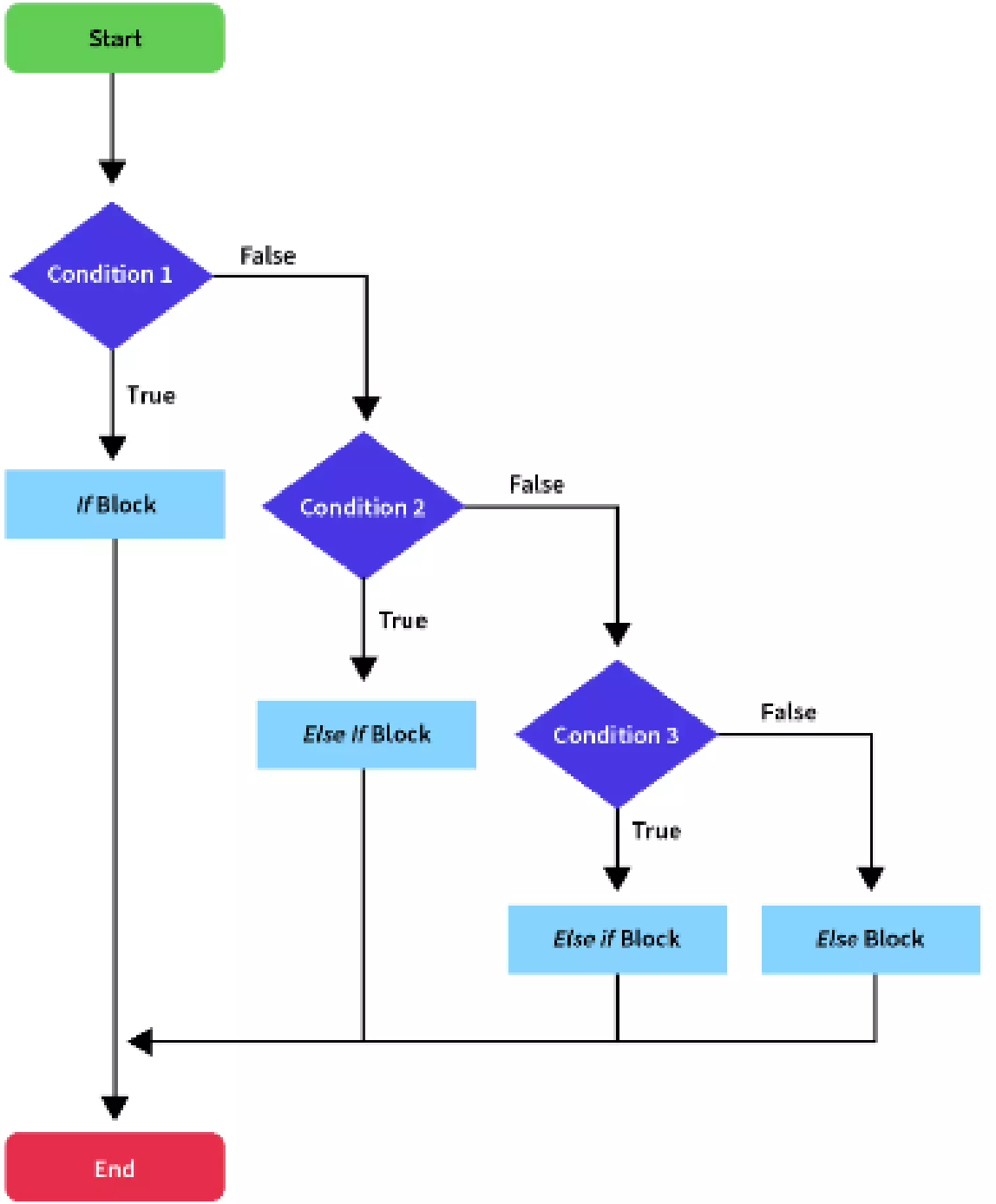
4. if-else-if Ladder

- This structure is used to **check multiple conditions** one after the other.
- As soon as one condition is true, the corresponding block is executed, and the rest are skipped.

Syntax :

```
If  ( condition ){
    ..........
}
else if ( condition ){
    ..........
}
else if( condition ){
    ..........
}
.
.
else{
}
```

Decision-Making Statements



Examples :

```
#include <iostream>
using namespace std;

int main() {
    int score = 72;

    if (score >= 90) {
        cout << "Grade A" << endl;
    } else if (score >= 75) {
        cout << "Grade B" << endl;
    } else if (score >= 60) {
        cout << "Grade C" << endl;
    } else {
        cout << "Grade D" << endl;
    }
    return 0;
}
```

```
#include <iostream>
using namespace std;

int main() {
    int temperature = 15;

    if (temperature > 30) {
        cout << "Hot" << endl;
    } else if (temperature >= 20) {
        cout << "Warm" << endl;
    } else if (temperature >= 10) {
        cout << "Cool" << endl;
    } else {
        cout << "Cold" << endl;
    }
    return 0;
}
```

Decision-Making Statements

5.Switch Statement

- ❖ The switch statement is almost similar to the if-else-if ladder in C++.
- ❖ It is a **multi-branch control statement** that allows us to choose **one block of code to execute out of many options**, based on the result of an expression.

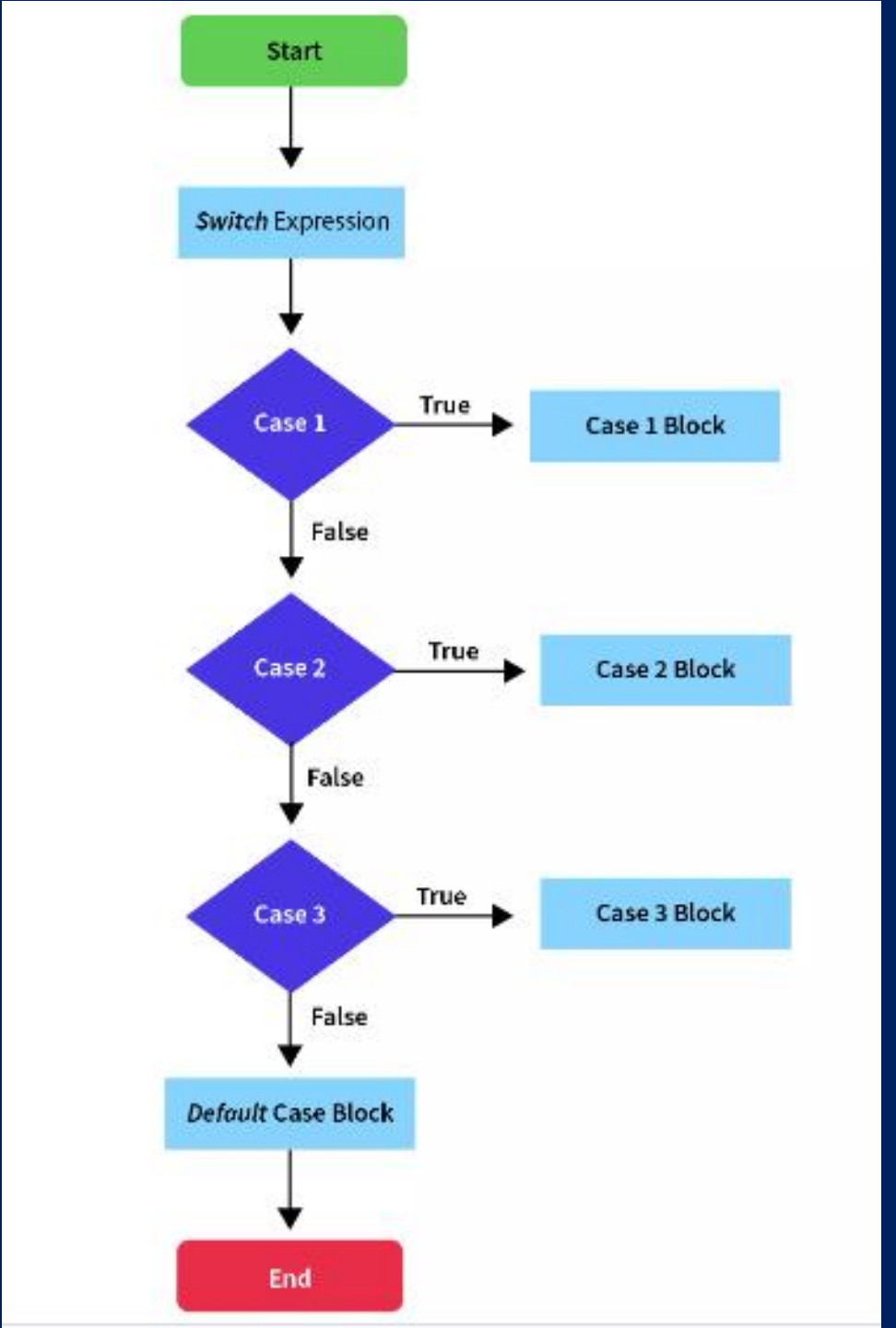
Key Points:

- The switch works with **integers**, **characters**, and **enumerated types**.
- Each block is known as a **case**.
- A **default case** can be added, similar to the else block in if-else.
- **break statements** are used to stop further case execution (prevent fall-through).

Syntax :

```
switch (expression) {
 case value1:
    //code block of case with value1
    break;
 case value2:
    //code block of case with value2
    break;
    …….
 case valueN:
    //code block of case with valueN
    break;
 default:
   //code block of default value
}
```

Decision-Making Statements



Examples :

```
#include <iostream>
using namespace std;

int main() {
   int day = 2;

   switch (day) {
      case 1: cout << "Monday"; break;
      case 2: cout << "Tuesday"; break;
      case 3: cout << "Wednesday"; break;
      default: cout << "Invalid day";
   }

   return 0;
}
```

```
#include <iostream>
using namespace std;

int main() {
   char grade = 'B';

   switch (grade) {
      case 'A': cout << "Excellent"; break;
      case 'B': cout << "Good"; break;
      case 'C': cout << "Average"; break;
      default: cout << "Invalid Grade";
   }

   return 0;
}
```

Questions

1. Write a program to check whether a number is positive.
2. Write a program to check whether age is 18 or above.
3. Write a program to check whether a number is even or odd.
4. Write a program to check whether a number is divisible by 5.
5. Write a program to check if a number is positive and even.
6. Write a program to check result: fail (<40), pass (40–74), distinction (75+).
7. Write a program to display grades based on marks (A, B, C, D).
8. Write a program to find the largest among three numbers.
9. Write a program to print weekday name based on week number (1–7).
10. Write a program to print number of days in a month based on month number.

Thank You