Short-term Hands-on Supplementary Course on C programming

Session 2:
Conditional Statements

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Agenda

1. Flow of Control
2. Sequential Flow
3. Conditional Flow of Control
   a. If statement (nested if)
   b. If-else statement (nested if-else)
   c. if-elseif-.....-else statements
   d. Ternary operator or conditional operator
   e. Switch case
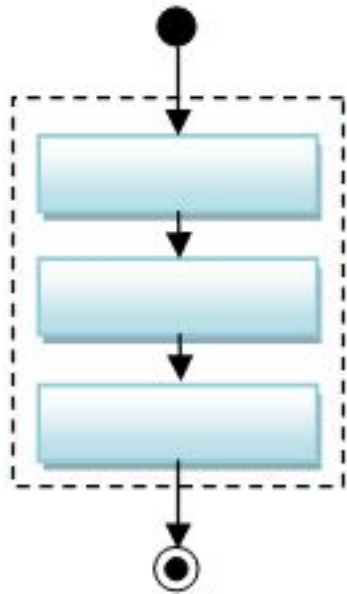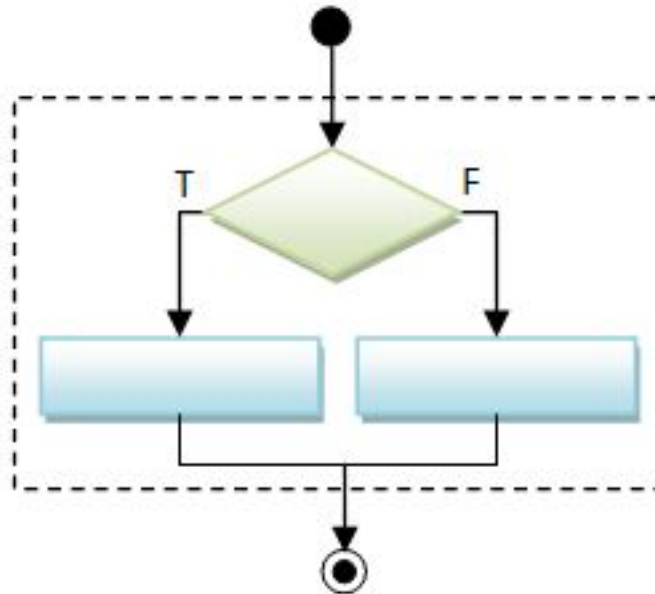4. Tutorial: Simple Calculator

Flow of Control

In C language, the control of the program flows from a given instruction to another. This type of control flow that occurs from any given command to another is known as the sequential control flow. Now, in any C program, a programmer might want to repeat some sets of instructions or even skip the instructions when they are writing logic. Declarations in C, also known as control declarations or decision-making, help them in making such decisions.
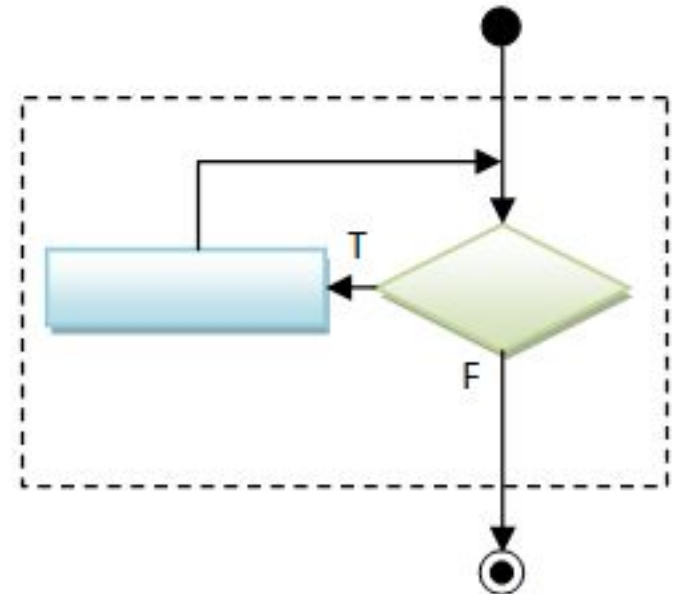
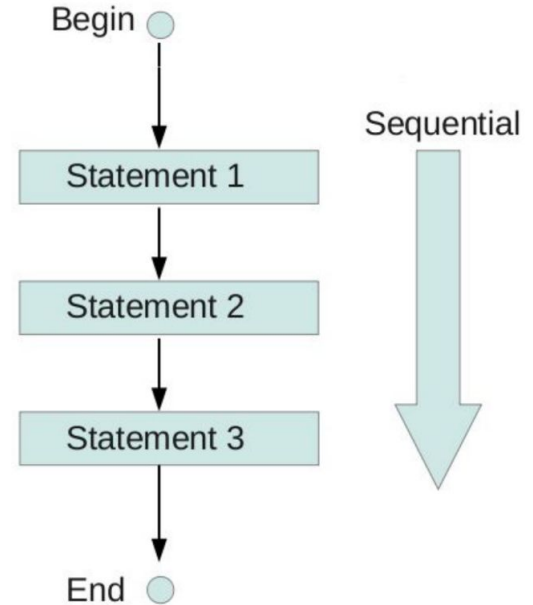# Three main types of control flow in computer program

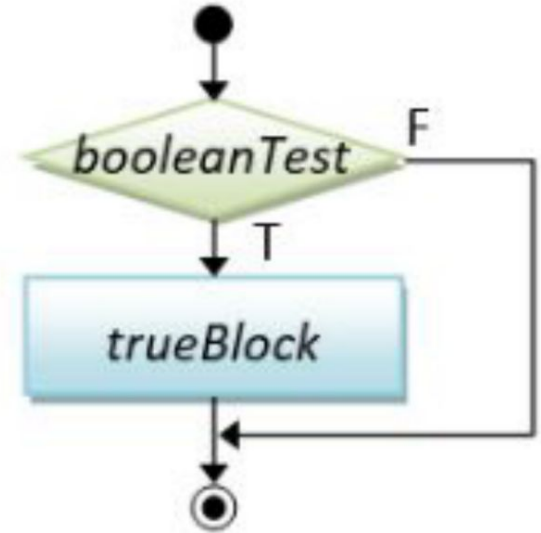Sequential   Conditional (Decision)   Loop (Iteration)

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Sequential Flow

```
int main()
{
    Statement 1;
    Statement 2;
    Statement 3;
    .
    .
    .
    Statement N;
}
```


Begin

Statement 1

Statement 2

Statement 3

End

Sequential

Conditional Flow of Control
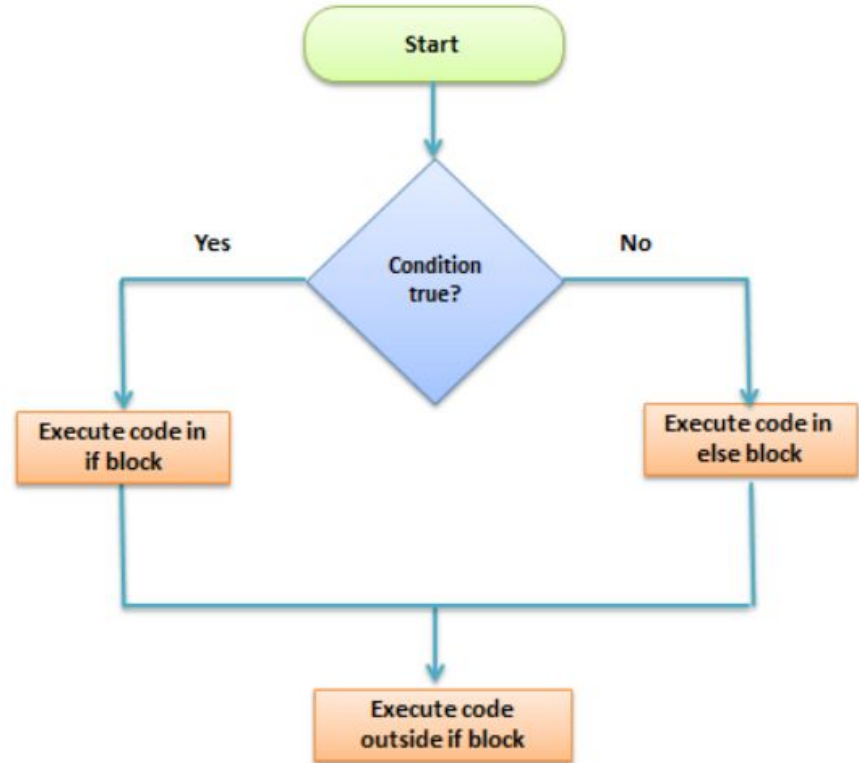
If statement syntax:

```
if (condition){
    // true-block
     Statements;

}
```
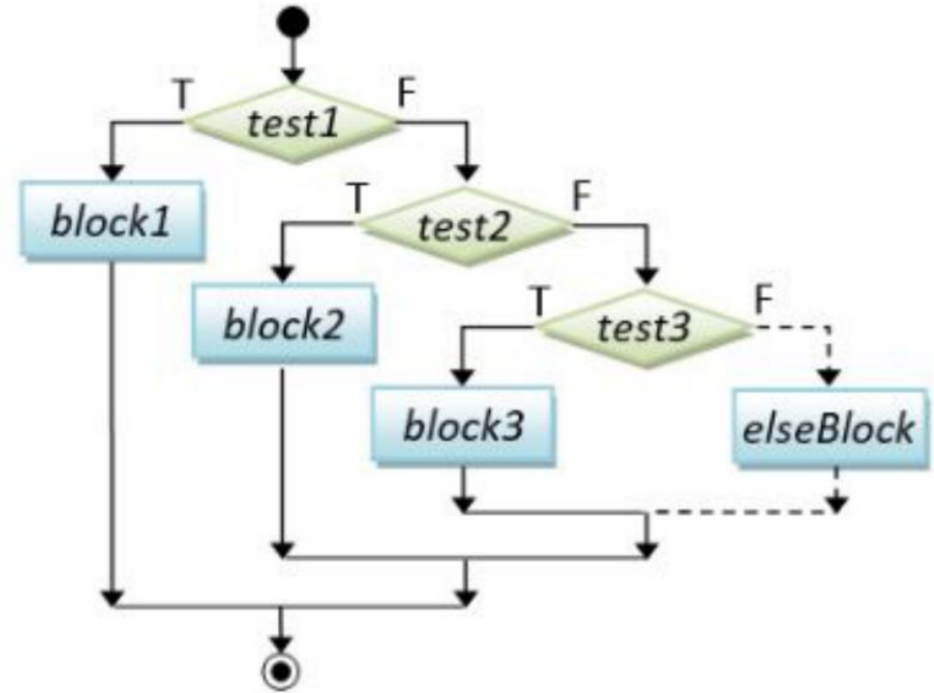
If-else statement syntax:

```
if (condition){

    // true-block
     Statements;

}

else {

    //false block

    Statements;

}
```

If-elseif-.....-else statement syntax:

```
if (test - expression 1) {
    statement1; //block 1
} else if (test - expression 2) {
    statement2; //block 2
} else if (test - expression 3) {
    statement3; //block 3
} else if (test - expression n) {
    Statement n;
} else {
    Statement x; //else block
}
```

Ternary Operator syntax:
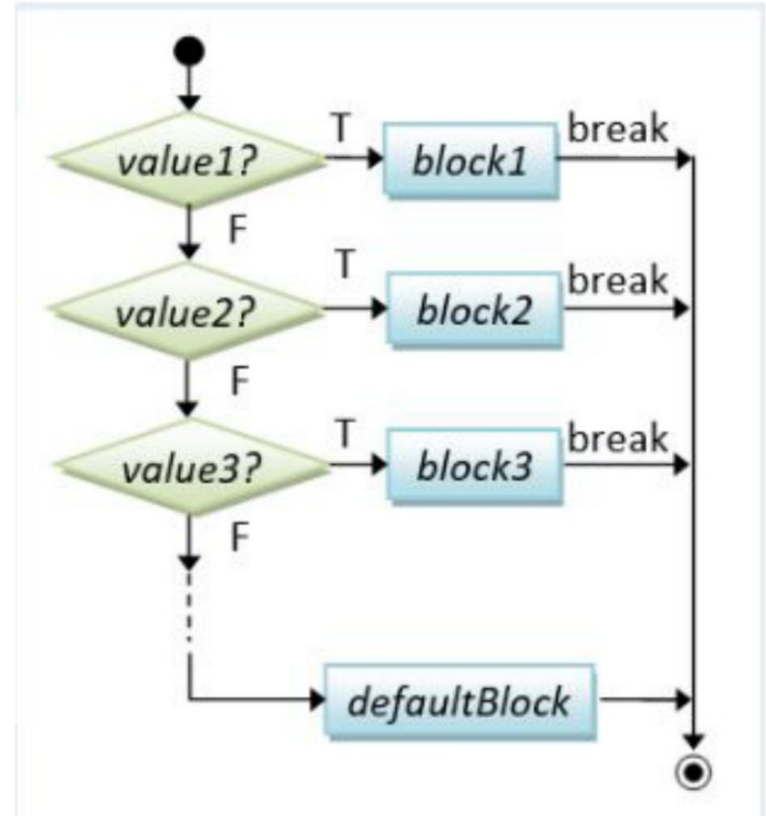
```
Condition ? trueExpr : falseExpr
```

```
Example:
 printf("%s",(marks>=50) ? "PASS" : "FAIL")
// prints pass if marks>=50
 Max = ( x>=y ? x : y ) ;
//RHS returns a or b
```

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Switch case syntax:

```
switch( selector ){
case value1:
          statement_1; break;
case value2:
          statement_2; break;
......
......
......
case value_n:
          statement_n; break;
default:
          default statement;
}
```

Tutorial

Write code to build a simple calculator in C.

Answer the questions to build the code:
- What is input and formatting?
- What is output and formatting?
- Which of the conditional statements is best suitable for this application?
- Are there any edge can which may break the code?

Any Questions?

Thank You for attending!

Contact us regarding any questions through email
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