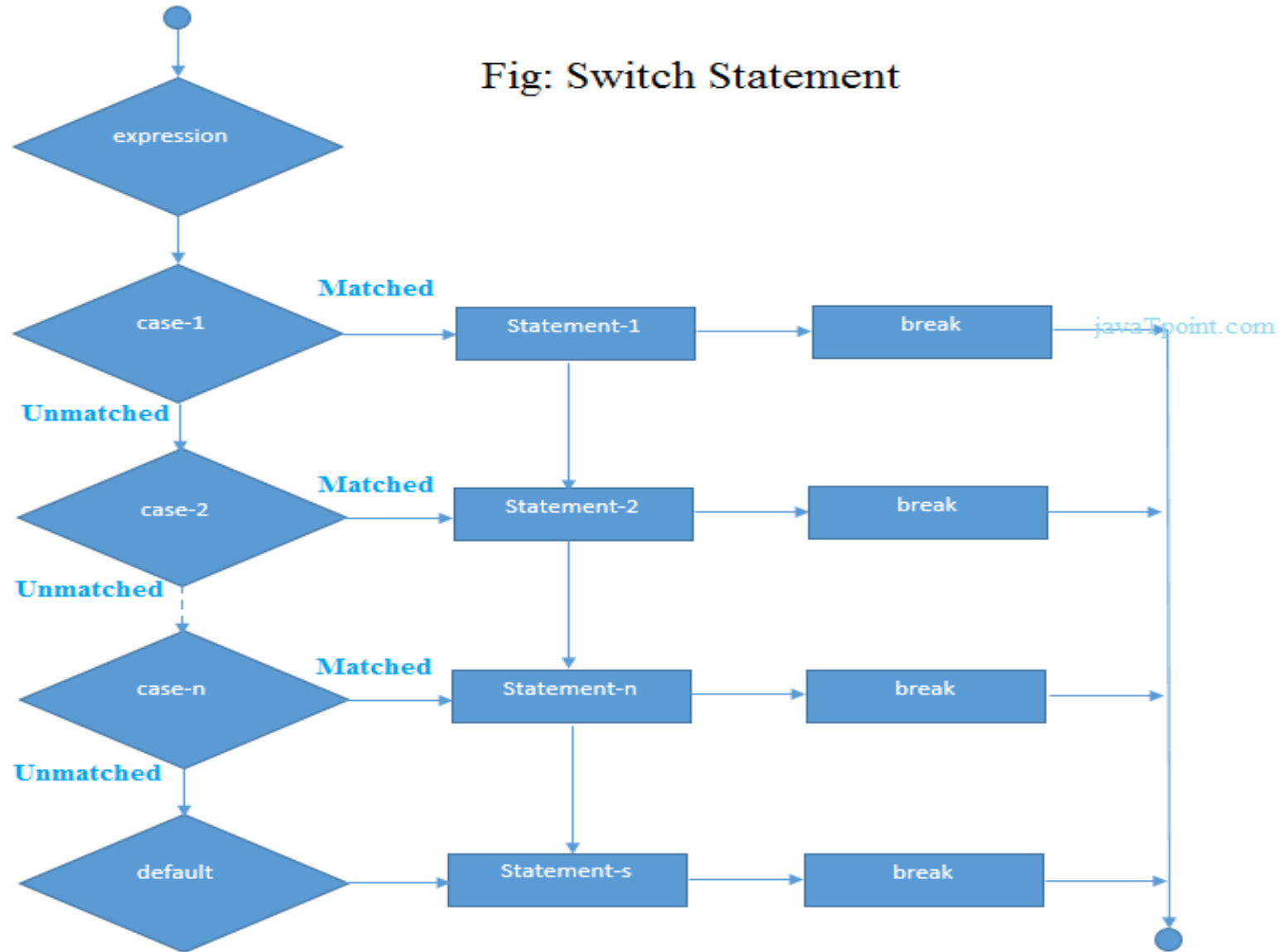# Switch..Case

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Syntax

```
switch(expression){
case value1:
 //code to be executed;
 break;  //optional
case value2:
 //code to be executed;
 break;  //optional
......

default:
 code to be executed if all cases are not
 matched;
}
```

- Alternate to if..else ladder
- Allows to execute multiple operations for different possible values of a single variable → switch variable
- Expression
  - Type: Char or integer
- Multiple Cases
  - Type: Char or Integer
- Break is not mandatory
  - No break statement → Matched? →executed

Fig: Switch Statement

Examples

```c
// Program to create a simple calculator
#include <stdio.h>

int main() {
    char operation;
    double n1, n2;

    printf("Enter an operator (+, -, *, /): ");
    scanf("%c", &operation);
    printf("Enter two operands: ");
    scanf("%lf %lf",&n1, &n2);

    switch(operation)
    {
        case '+':
            printf("%.1lf + %.1lf = %.1lf",n1, n2, n1+n2);
            break;

        case '-':
            printf("%.1lf - %.1lf = %.1lf",n1, n2, n1-n2);
            break;

        case '*':
            printf("%.1lf * %.1lf = %.1lf",n1, n2, n1*n2);
            break;

        case '/':
            printf("%.1lf / %.1lf = %.1lf",n1, n2, n1/n2);
            break;

        // operator doesn't match any case constant +, -, *, /
        default:
            printf("Error! operator is not correct");
    }

    return 0;
}
```

SWITCH PARAMS

Default Keyword

❑ The default keyword specifies some code to run if there is no case match:

```c
int day = 4;

switch (day) {
  case 6:
    printf("Today is Saturday");
    break;
  case 7:
    printf("Today is Sunday");
    break;
  default:
    printf("Looking forward to the Weekend");
}
```

Break Keyword

❑ When C reaches a break keyword, it breaks out of the switch block.

❑ This will stop the execution of more code and case testing inside the block.

❑ When a match is found, and the job is done, it's time for a break. There is no need for more testing.

Problems

1. Write a C program to check whether an alphabet is vowel or consonant using switch case.
2. Write a C program to find maximum between two numbers using switch case
3. C program to print day of week name using switch case
4. Write a C program that finds the root of the following quadratic equation:

$$ax^2 + bx + c = 0$$