

# C Programming Notes (Based on W3Schools)

## 7. Control Structures (if, else, switch, loops)

C uses control structures to manage the flow of execution.

- if / else: Executes code based on conditions
- switch: Multi-way branch
- loops: for, while, do...while for repetition

### 7.1 if-else Statement

```
int age = 18;

if (age >= 18) {
    printf("You are eligible to vote.");
} else {
    printf("Not eligible to vote.");
}
```

### 7.2 switch Statement

```
int day = 4;

switch(day) {
    case 1: printf("Monday"); break;
    case 2: printf("Tuesday"); break;
    default: printf("Other day");
}
```

### 7.3 Loops (for, while, do...while)

```
for(int i=1; i<=5; i++) {
    printf("%d\n", i);
}

int j = 1;

while(j <= 5) {
```

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```
    printf("%d\n", j);

    j++;
}

int k = 1;

do {

    printf("%d\n", k);

    k++;

} while(k <= 5);
```

### 8. Functions in C

Functions are blocks of code that perform a specific task.

Syntax:

```
returnType functionName(parameters) {

    // code

}
```

- main() is a predefined function.
- You can create your own functions too.

```
int add(int a, int b) {

    return a + b;

}

int main() {

    int result = add(5, 10);

    printf("Sum = %d", result);

    return 0;

}
```

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## 9. Arrays

An array is a collection of variables of the same type.

Declaration:

type name[size];

```
int numbers[5] = {1, 2, 3, 4, 5};

for(int i=0; i<5; i++) {
    printf("%d\n", numbers[i]);
}
```

## 10. Strings

Strings are arrays of characters ending with a null character '\0'.

Use double quotes for string literals.

```
char name[] = "Abhay";

printf("Hello %s", name);
```