

## **## About**

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**Github :** <https://github.com/HENRY-2016>

**Languages:** Python, C, C++, Javascript, PHP, Web Technologies and more

### **Worked On Projects:**

#### **Mobile Application**

##### **dr kg beddings App**

<https://play.google.com/store/apps/details?id=com.mogahenze.drkgbeddings1>

##### **biva organic**

<https://play.google.com/store/apps/details?id=com.mogahenze.bivaOrganic>

## **WHAT WILL BE COVERED**

**Link ::** [https://www.tutorialspoint.com/cplusplus/cpp\\_operators.htm](https://www.tutorialspoint.com/cplusplus/cpp_operators.htm)

### **1. OVERVIEW**

- Object-Oriented Programming
- Standard Libraries
- The ANSI Standard
- Learning C++

### **2. ENVIRONMENT SETUP**

- Windows

### **3. BASIC SYNTAX**

C++ Program Structure  
Compile & Execute C++ Program  
Semicolons & Blocks in C++  
C++ Keywords

#### **4. COMMENTS IN C++**

#### **5. DATA TYPES**

Primitive Built-in Types  
typedef Declarations  
Enumerated Types

#### **6. VARIABLE TYPES**

Variable Definition in C++  
Variable Declaration in C++  
Lvalues and Rvalues

#### **7. VARIABLE SCOPE**

Local Variables  
Global Variables  
Initializing Local and Global Variables

#### **8. CONSTANTS/LITERALS**

Integer Literals  
Floating-point Literals  
Boolean Literals  
Character Literals  
String Literals  
Defining Constants

#### **9. MODIFIER TYPES**

Type Qualifiers in C++

#### **10. STORAGE CLASSES**

The auto Storage Class  
The register Storage Class  
The static Storage Class  
The extern Storage Class  
The mutable Storage Class

#### **11. OPERATORS**

- Arithmetic Operators
- Relational Operators
- Logical Operators
- Bitwise Operators
- Assignment Operators
- Misc Operators
- Operators Precedence in C++

## **12. LOOP TYPES**

- While Loop
- Loop Control Statements
- The Infinite Loop

## **13. DECISION-MAKING STATEMENTS**

- If Statement
- if...else Statement
- if...else if...else Statement
- Switch Statement
- Nested if Statement
- The ? : Operator

## **14. FUNCTIONS**

- Defining a Function
- Function Declarations
- Calling a Function
- Function Arguments

## **15. NUMBERS**

- Defining Numbers in C++
- Math Operations in C++
- Random Numbers in C++

## **16. ARRAYS**

- Declaring Arrays
- Initializing Arrays
- Accessing Array Elements
- Arrays in C++
- Passing Arrays to Functions

## **17. STRINGS**

- The C-Style Character String

The String Class in C++

## **18. POINTERS**

What are Pointers?

Using Pointers in C++

Pointers in C++

Null Pointers

Pointer Arithmetic

Pointers vs Arrays

Array of Pointers

Pointer to a Pointer

Passing Pointers to Functions

Return Pointer from Functions

## **19. REFERENCES**

References vs Pointers

Creating References in C++

References as Parameters

Reference as Return Value

## **20. DATE AND TIME**

Current Date and Time

Format Time using struct tm

## **20. DATE AND TIME**

Current Date and Time

Format Time using struct tm

## **21. BASIC INPUT/OUTPUT**

I/O Library Header Files

The Standard Output Stream (cout)

The Standard Input Stream (cin)

The Standard Error Stream (cerr)

The Standard Log Stream (clog)

## **22. DATA STRUCTURES**

Defining a Structure

Accessing Structure Members

Structures as Function Arguments

Pointers to Structures

## **23. CLASSES AND OBJECTS**

- C++ Class Definitions
- Define C++ Objects
- Classes & Objects in Detail
- Class Access Modifiers
- The public Members
- The private Members
- The protected Members
- Constructor & Destructor
- Friend Functions
- Inline Functions
- this Pointer
- Pointer to C++ Classes
- Static Members of a Class
- Static Function Members

## **24. INHERITANCE**

- Base & Derived Classes
- Access Control and Inheritance
- Type of Inheritance
- Multiple Inheritance

## **25. OVERLOADING (OPERATOR & FUNCTION)**

- Function Overloading in C++
- Overloadable/Non-overloadable Operators
- Operator Overloading Examples
- Unary Operators Overloading
- Increment (++) and Decrement (- -) Operators
- Binary Operators Overloading
- Relational Operators Overloading
- Input/Output Operators Overloading
- ++ and - - Operators Overloading
- Assignment Operators Overloading
- Function Call () Operator Overloading
- Subscripting [ ] Operator Overloading
- Class Member Access Operator - > Overloading

## **26. POLYMORPHISM**

- Virtual Function

## **27. DATA ABSTRACTION**

Access Labels Enforce Abstraction

## **28. DATA ENCAPSULATION**

## **29. INTERFACES**

## **30. FILES AND STREAMS**

Opening a File

Closing a File

Writing to a File

File Position Pointers

## **31. EXCEPTION HANDLING**

Throwing Exceptions

Catching Exceptions

C++ Standard Exceptions

Define New Exceptions

## **32. DYNAMIC MEMORY**

The new and delete Operators

Dynamic Memory Allocation for Arrays

Dynamic Memory Allocation for Objects

## **33. NAMESPACES**

Defining a Namespace

The using directive

Discontiguous Namespaces

Nested Namespaces

## **34. TEMPLATES**

Function Template

Class Template

## **35. PREPROCESSOR**

The #define Preprocessor

Function-Like Macros

Conditional Compilation

The # and ## Operators

Predefined C++ Macros

## **36. SIGNAL HANDLING**

The signal() Function

The raise() Function

## **37. MULTITHREADING**

Creating Threads

Terminating Threads  
Passing Arguments to Threads  
Joining and Detaching Threads

### **38. WEB PROGRAMMING**

What is CGI?  
Web Browsing  
CGI Architecture Diagram  
Web Server Configuration  
HTTP Header  
CGI Environment Variables  
C++ CGI Library  
GET and POST Methods  
Using Cookies in CGI

### **39. STL TUTORIAL**

### **40. STANDARD LIBRARY**

The Standard Function Library .  
The Object Oriented Class Library

## **## OOP Fundamentals**

Class :: E.g class {Fruits } Objects { Apple, Banana }

Objects ::

Method :: Methods are functions that belongs to the class

Two definition mthds

Inside class definition

Outside class definition

Constructor || Destructor

Is a special method that is automatically called when an object of a class is created

Access Specifiers

3 access specifiers

public - members are accessible from outside the class

private - members cannot be accessed (or viewed) from outside the class

protected - members cannot be accessed from outside the class, however, they can be accessed in inherited classes

Exceptions

```
try {  
    // Block of code to try  
    throw exception; // Throw an exception when a problem arise  
}  
catch () {  
    // Block of code to handle errors  
}
```

## **Pillars of OOPS**

### **Inheritance**

Inheritance is the procedure in which one class inherits the attributes and methods of another class.

### **Encapsulation**

The word, “encapsulate,” means to enclose something we encapsulate by binding the data and functions

### **Polymorphism**

It describes the concept that you can access objects of different types through the same interface

### **Abstraction**

Hiding the internal details or implementations of a function and showing its functionalities only