



AMA COMPUTER ACADEMY C++ PROGRAMMING



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(Certificate in C++ Programming)

Turbo

C



Skills: Pre-requisite Knowledge and Skills, Inspire with C Programming, Checklist for Installation, The Programming Languages, The main Function, Understanding Header Files, Typology, Operator Precedence, Character I/O Functions, Standard I/O Functions, String I/O Functions, Understanding Arrays, Reading Array Elements, Copying and Finding Length of a String, Understanding and Comparing Strings, String Reverse and Concatenation, String Conversion and Searching a String, Using return Keyword, Function with Return Type and Arguments, Command Line Arguments, External Variables, The static and register Variables, Arrays in Pointers, Function Pointers, Call by Value and Call by Reference, Macro Expansion

Outputs: C Programming, Decision and Control Flow Statements

A screenshot of the Turbo C IDE. The window title is "Welcome To". The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The main editing area shows a C program for calculating a discount. The code is as follows:

```
Line 14 Col 1 Insert Indent Tab Fill Unindent * C:NONAME.C
#include <stdio.h>
float price, discount;
main()
{
    clrscr();
    printf("Enter value for price:");
    scanf("%f", &price);
    if (price > 1000)
    {
        discount = price * 0.10;
        printf("Discount is %.2f", discount);
    }
    getch();
}
```

The status bar at the bottom of the IDE shows keyboard shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, and F10-Menu.

C

Programming

Detailed Syllabus:

C++ Programming

Getting Started

- Audience for this Course
- Job Roles and Job Opportunities
- Prerequisite Knowledge and Skills
- Inspire with C++
- The History of C++
- What is C++?
- Why we learn C++?
- Course Objective
- Checklist for Installation
- Step by step Installation Process
- Hello World Program

Fundamentals of C++ Language

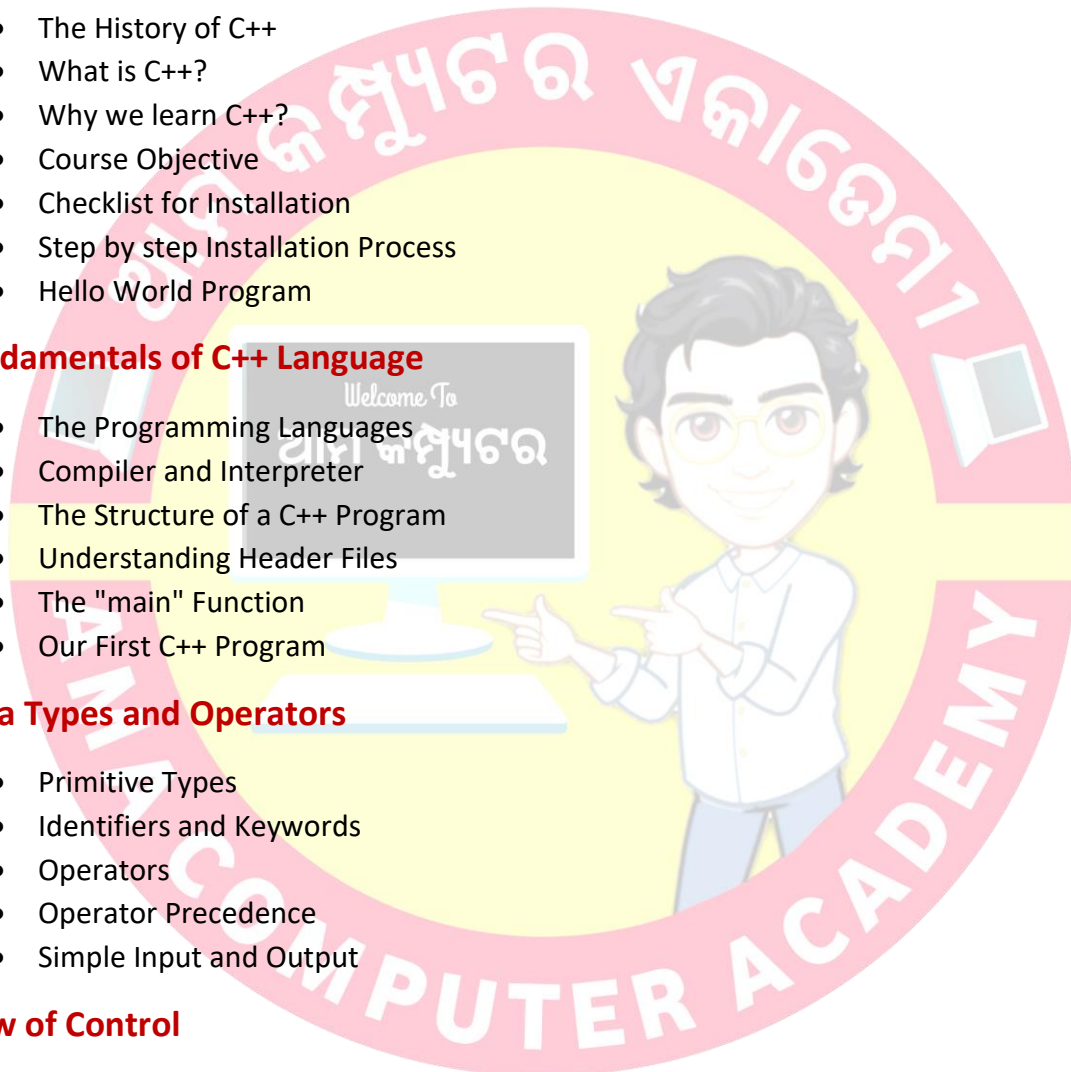
- The Programming Languages
- Compiler and Interpreter
- The Structure of a C++ Program
- Understanding Header Files
- The "main" Function
- Our First C++ Program

Data Types and Operators

- Primitive Types
- Identifiers and Keywords
- Operators
- Operator Precedence
- Simple Input and Output

Flow of Control

- IF Statements
- The Nested "if" Statements
- The "switch case" and "goto" Statements
- The "for" Loop
- The "while" Loop
- The Do While Loop
- Working with "break" and "continue" Statements



Handling Arrays

- Understanding Array
- Declaring Arrays
- Passing Arrays to Functions

Pointers

- Understanding Pointers
- Arrays in Pointers
- Pointing Pointers
- Call by Value and Call by Reference
- Advanced Pointers

Manipulators and Default Arguments

- The “setw” and “setfill” Manipulators
- The “setprecision” and “endl” Manipulators
- Understanding Default Arguments
- Using Inline Function

Object Oriented Programming

- An Overview of Object Oriented Programming
- Understanding Class
- Working with Objects
- Array of Objects

Constructors and Destructors

- What is Constructor?
- Understanding Dynamic Constructors
- What is Copy Constructor?
- Understanding Destructors

Behaviors and Properties

- Understanding Members and Methods
- Nesting of Member Functions
- What is Scope Resolution Operator?
- Method Overloading

Static Members and Methods

- What are Static Members?
- Understanding Static Member Function
- Using “this” Pointer



Inheritance and 'friend' Keyword

- Understanding Inheritance
- Working with Single Inheritance
- What is the Friend Function?
- Understanding Friend Class

Inheritances Revisited

- Understanding Multiple Inheritances
- Multi-level Inheritance
- Working with Hybrid Inheritance
- Using Hierarchical Inheritance
- Understanding Overriding

Polymorphism

- What is Polymorphism?
- Virtual Functions
- Virtual Base Classes
- Pure 'virtual' Function
- Virtual Constructors and Destructors
- Data Binding

Operator Overloading and Encapsulation

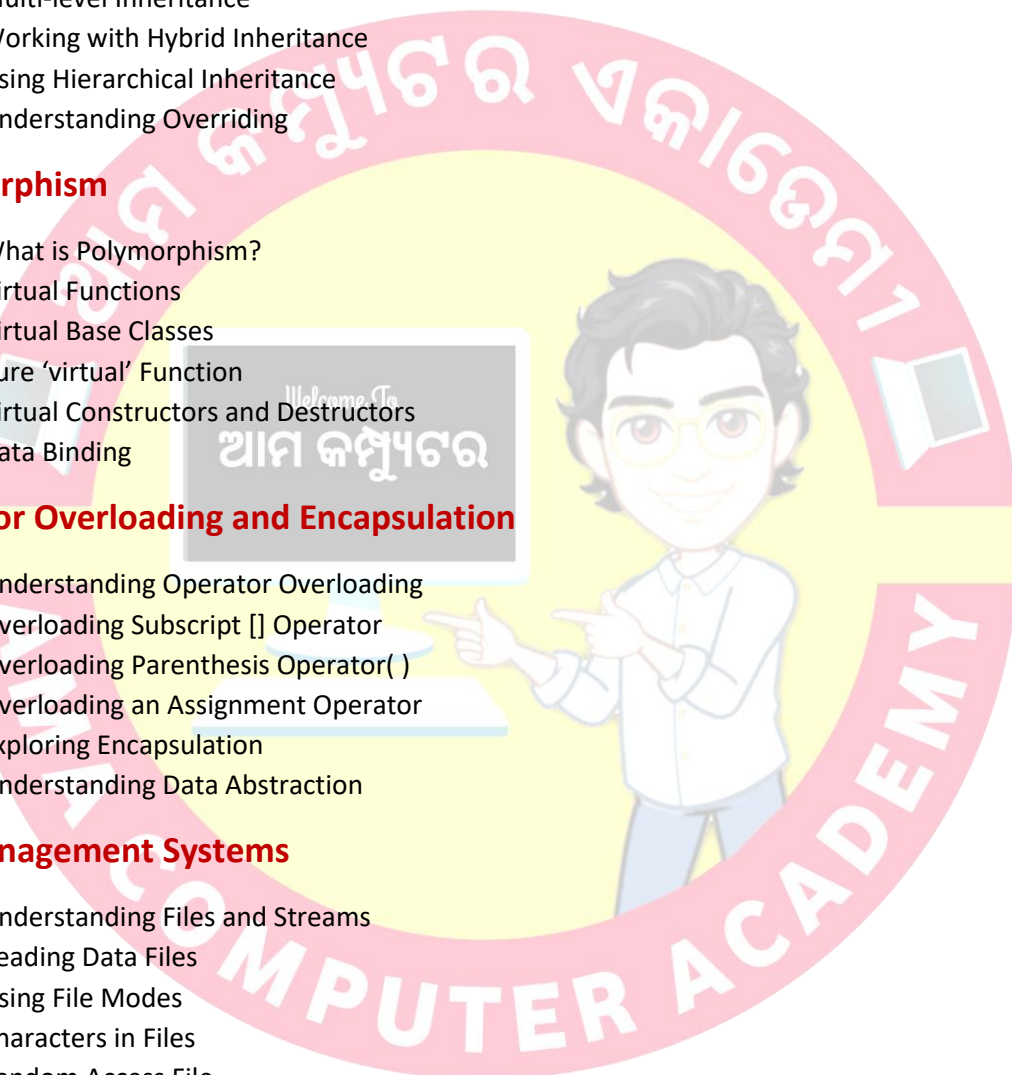
- Understanding Operator Overloading
- Overloading Subscript [] Operator
- Overloading Parenthesis Operator ()
- Overloading an Assignment Operator
- Exploring Encapsulation
- Understanding Data Abstraction

File Management Systems

- Understanding Files and Streams
- Reading Data Files
- Using File Modes
- Characters in Files
- Random Access File
- Lab

Templates

- Understanding Templates
- Function Templates
- Function Overloading using Templates
- Class Templates

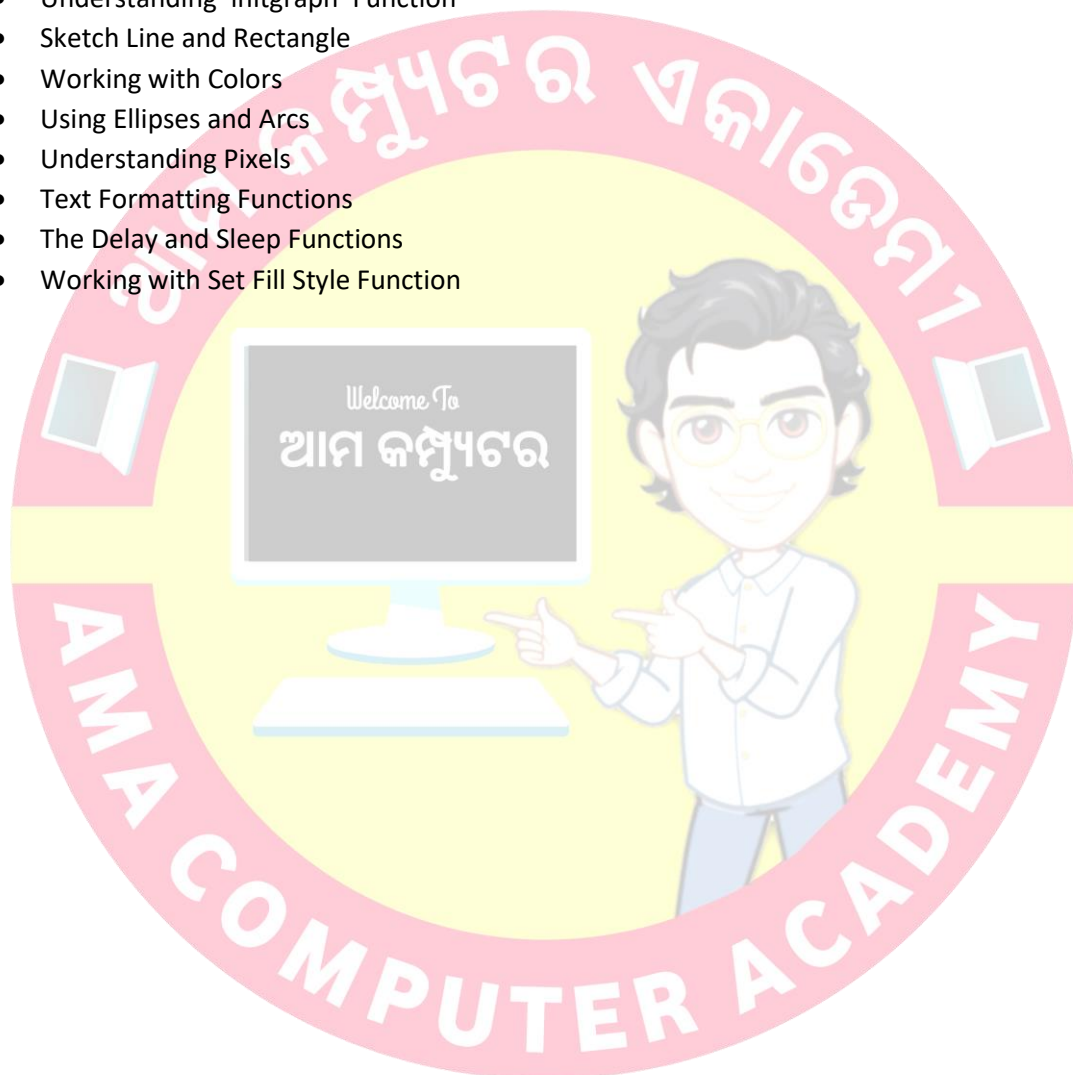


Exception Handling and Enumeration Graphics

- Understanding Exception
- Exception Specifications
- Catchable Types
- Understanding Enumerations
- Type Casting

Graphics

- Understanding 'initgraph' Function
- Sketch Line and Rectangle
- Working with Colors
- Using Ellipses and Arcs
- Understanding Pixels
- Text Formatting Functions
- The Delay and Sleep Functions
- Working with Set Fill Style Function



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