

what you can expect from this ?

Object Oriented Programming
CheatSheet - by Love Babbar

- Resources: C++ Java

- Overview
 - What is Object Oriented programming ? Object-oriented programming is about creating objects that contain both data and functions.
 - how Object Oriented programming is related to the real world ? Example ?
 - Why to study OOPS ?
 - Limitation of OOPS
 - When we say that "X" language is object oriented programming language, then what does we mean by that ? Your Homework

- What is a Class ?
- What is an Object ? Class vs Object
- Real world analogy of Class and Object ?
- Important Keywords:
 - Static keyword Why it is used ?
 - Virtual Keyword Why it is used ?
 - Abstract Keyword Why it is used ?
 - Final Keyword Why it is used ?
 - Explicit keyword Why it is used ?
 - this keyword Why it is used ?
 - new keyword Why it is used ?
 - const keyword Why it is used ?
 - super keyword Why it is used ?

- Polymorphism
 - what ?
 - Need ?
 - categorisation
 - Function/Operator Overloading Compile-time Polymorphism
 - what function cannot be overloaded in C++ ?
 - What are all the operators that cannot be overloaded?
 - Function Overriding Runtime Polymorphism
 - Virtual Function
 - Virtual Class
 - Derived Class
 - Can Virtual Function be set "Private" ?
 - Inline Virtual Function
 - Abstract Class
 - Pure Virtual Function
 - Pure Virtual Destructor

- Inheritance
 - What is inheritance ? Sub Class Super Class Reusability
 - why/ Need of Inheritance ?
 - Can Object Oriented Programming exist without Inheritance ?
 - Types of Inheritance
 - Single Inheritance.
 - Multiple Inheritance.
 - Hierarchical Inheritance.
 - Multilevel Inheritance.
 - Hybrid/Virtual Inheritance
 - Real Life Example of Multiple Inheritance.
 - What are the limitations of inheritance?
 - What is Sealed Modifier ?
 - How can we call the base method without creating an instance?
 - What is the difference between new and override?
 - Why Java Does not support Multiple Inheritance ?
 - What is diamond problem in case of multiple inheritance in java?
 - If Class A inherits from Class B, then what all is inherited from Parent class ? Explore Every Combination HOMEWORK
 - Object Slicing
 - how to hide base class methods/functions ?
 - Friend Function/ Friend Class/ Inline Function Examples Homework
 - Local Class/ Nested Class/ Simulating Final Class Homework
 - Does Overloading works with Inheritance ?
 - Difference Between Polymorphism & Inheritance
 - Generalisation vs Aggregation vs Composition

- Encapsulation
 - what ? Combo of Data-hiding & Abstraction
 - Advantages/Need ?
 - how to achieve ?
 - Code/implementation Example
 - Real World Example
- Abstraction:
 - what? Implementation hiding
 - When to use ?
 - How to achieve ?
 - C++
 - Access Specifiers
 - header Files
 - Java
 - Interfaces
 - Abstract Classes
 - Encapsulation vs Abstraction Example
 - What are the differences between interfaces and abstract classes?

- Dynamic Binding
- Message Passing
- Object-oriented design interview questions
 - Design a hash map
 - Design an LRU cache
 - Design a call center
 - Design a deck of cards
 - Design a parking lot
 - Design an online chat

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