6 Lecture - CS304

Important Subjective

1. **What is class compatibility, and why is it important in object-oriented programming?**
Answer: Class compatibility refers to the ability of one class to use objects of another class without errors. It is important in object-oriented programming because it allows classes to work together effectively and reduces the likelihood of errors and bugs.

    What is the difference between static and dynamic class compatibility?
Answer: Static class compatibility is checked at compile time, while dynamic class compatibility is checked at runtime.

    How can inheritance affect class compatibility?
Answer: Inheritance can affect class compatibility by allowing subclasses to use objects of their parent classes.

    How can interfaces affect class compatibility?
Answer: Interfaces can affect class compatibility by allowing objects of different classes to be used interchangeably if they implement the same interface.

    What is type checking, and how is it related to class compatibility?
Answer: Type checking is the process of checking if a variable or object is of a specific type, and it is related to class compatibility because it ensures that objects are compatible before they are used.

    What is casting, and how is it related to class compatibility?
Answer: Casting is the process of converting an object to a different type, and it is related to class compatibility because it allows objects to be used in contexts where they would not normally be compatible.

    What happens if an object is cast to an incompatible type?
Answer: If an object is cast to an incompatible type, an exception is thrown at runtime.

    How can method signatures affect class compatibility?
Answer: Method signatures can affect class compatibility by requiring that objects used in certain contexts have specific methods.

    Can class compatibility be affected by the names of classes or methods?
Answer: No, class compatibility is not affected by the names of classes or methods.

    How can class compatibility be ensured in software development?
Answer: Class compatibility can be ensured in software development by following good design principles, such as using inheritance and interfaces appropriately, and by testing software thoroughly before it is released.