

OOPS

Lecture-37

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What is OOP?

Object Oriented Programming is a methodology or paradigm to design a program using classes and objects.

- 1. Data Abstraction
- 2. Data Encapsulation
- 3. Inheritance
- 4. Polymorphism



What are classes?

Class is a user-defined datatype.

```
class Player {
   int health;
   int score;
   String name;
}
```

Blueprint



What are Objects?

Object is an instance of the class.

```
class Player {
   int health;
   int score;
   String name;
}
Player harsh;
```



Why Classes?

Classes enables us to apply OOP concepts.

- 1. Data Abstraction
- 2. Data Encapsulation
- 3. Inheritance
- 4. Polymorphism

```
Access modifiers:

Private

Protected

Problic

public
```



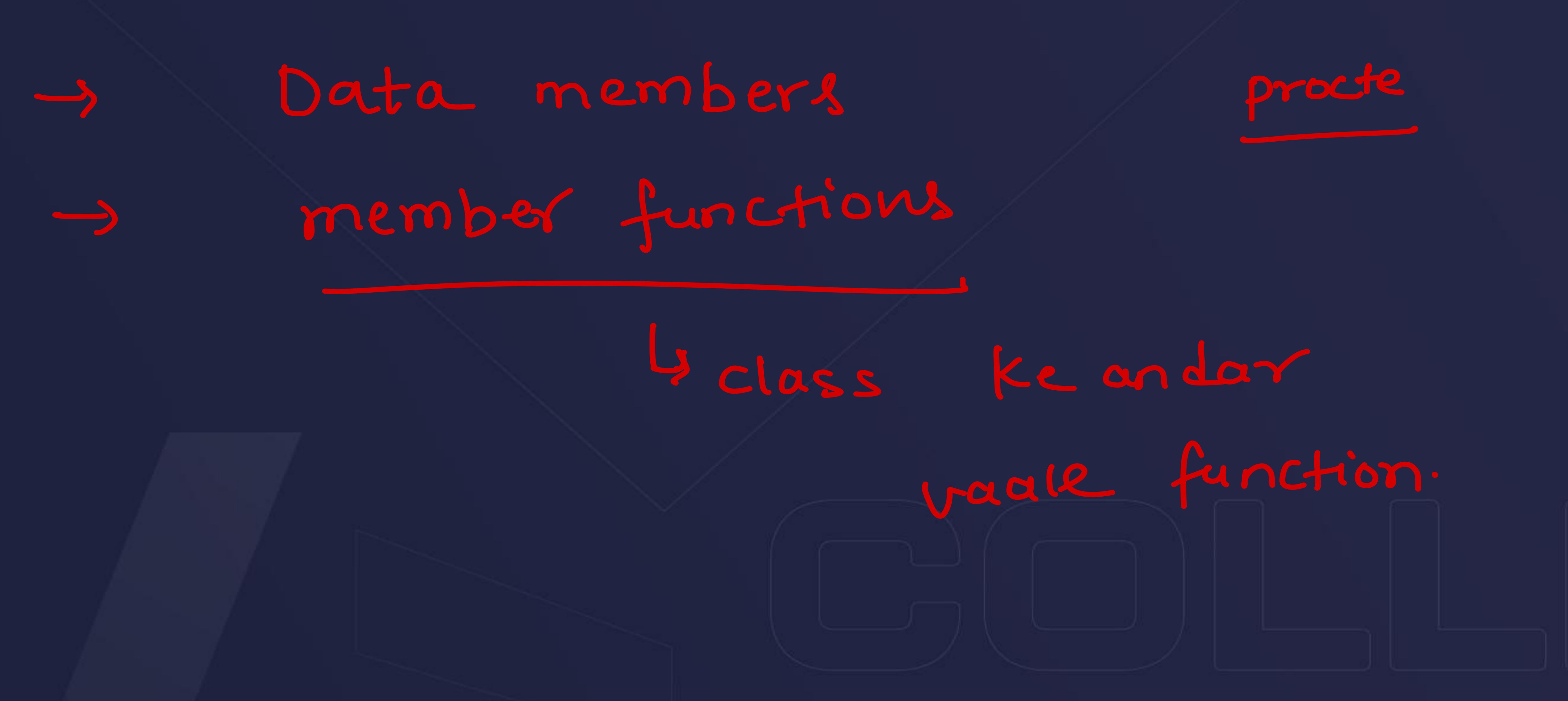
Array approach Vs Class





Class variables

Declaration, Initialization and Accessing





Access specifiers Private, Public and Protected





Getters and setters





Ques: Create a class 'book' with name, price and number of pages as its attributes. The class should contain following member functions:

- countBooks(int price): This function will return count of all the books that have a price less than the given price.
- isBookPresent(string title): This will return a boolean value indicating whether any book with the given title exists or not.



Ques: Find the error

```
class emp{
   int ecode;
   class emp e;
}
```



Passing class objects to functions





SKILLS

Whys





Array of Class objects'

Declaration and Access





Ques: Create a class "cricketer" that contains name of cricketer, his age, number of test matches that he has played and the average runs that he has scored in each test match. Create an array of data type "cricketer" to hold records of 20 such cricketers and then write a program to read these records



Constructors



Types of Constructors

- Default constructor
- Parameterized constructor
- Copy constructor



Default constructor





Parameterized constructor





Destructor



Thank you!!