SNS COLLEGE OF TECHNOLOGY

Coimbatore-35.
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade (Cycle III)
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING
COURSE CODE & NAME : 23CST205 - Object Oriented Programming Using Java

II YEAR/ III SEMESTER

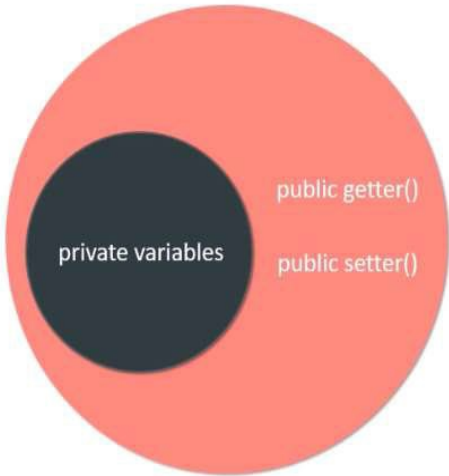## UNIT – I INTRODUCTION TO OOP

Topic: Encapsulation

Encapsulation

➤ Encapsulation is a process of wrapping code and data together into a single unit.

➤ For example, a capsule which is mixed of several medicines.

➤ We can create a fully encapsulated class in Java by making all the data members of the class private.

➤ Now we can use setter and getter methods to set and get the data in it.

➤ The Java Bean class is the example of a fully encapsulated class.

Encapsulation

Inheritance	Polymorphism	Abstraction	Encapsulation

Encapsulation is the mechanism of wrapping up of data and code acting on the methods together as a single unit

It is achieved by declaring the variables of a class as private and then providing the public setter and getter methods to modify and view the variables values

private variables

public getter()

public setter()

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Encapsulation

Advantage of Encapsulation

1.It provides you the **control over the data**.

Suppose you want to set the value of id which should be greater than 100 only, you can write the logic inside the setter method.

You can write the logic not to store the negative numbers in the setter methods.

2.It is a way to achieve **data hiding** in Java because other class will not be able to access the data through the private data members.

3.The encapsulate class is **easy to test**. So, it is better for unit testing.

4.The standard IDE's are providing the facility to generate the getters and setters. So, it is **easy and fast to create an encapsulated** class in Java.

Encapsulation

Example 2:

- Another example for encapsulation is a large organization.

- An organization is consists of several departments like the production department, purchase department, sales department, and Accounts department.

- It combines all these departments together and had formed the organization.
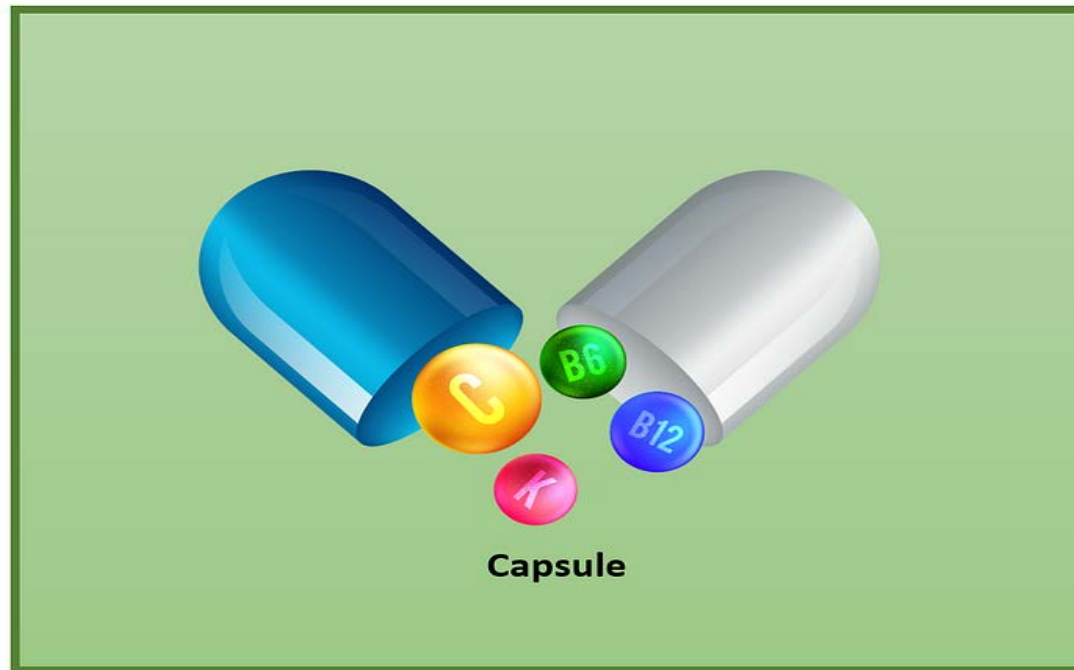
Encapsulation

- Example 1:

    The most commonly used example is the medical capsule.

    This capsule mixes few types of medicines and stored in one capsule

Capsule

Encapsulation

Example 2:

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Encapsulation