ENCAPSULATION

classmate
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ENCAPSULATION:- is a process of wrapping code and data together into a single unit.

FOR Ex:- A capsules which is mixed of several medicines.

OR

Encapsulation simply means binding object state (Fields) and behaviour (methods) together. If you are creating class, you are doing encapsulation.

OR

Encapsulation in Java is an object-oriented procedure of combing the data members and data method of the class inside the user-defined class.

*. It is important to declare this class as Private.

IDEA

→ The whole ideo behind encapsulation is to hide the implementation details from users. If a data member is private it means it can only be accessed within the same class. No outside class can access private data member(var) of other class.

However if we setup public getter and setter methods to update (For example void setSSN(int ssn) and read (For example int getSSN() the private data Fields then the outside class can access those private data Fields via public methods.

This way data can only be accessed by public methods thus making the private Fields and their implementation hidden For outside classes. That's why encapsulation is known as data hiding.

HOW TO IMPLEMENT ENCAPSUCATIONS:-

1. Make the instance variables private so that they cannot be accessed directly from outside the class. You can only set and get values OF these variables through the methods OF the class.

2. Have getter and setter methods in the class to set and get the values OF the fields.

NOTE

Java bean class is the example of a Fully encapsulated class.

ADVANTAGE:-

* By providing only a setter or getter method, you can make the class read-only or write-only. In other words, you can skip the getter or setter methods.

* It provides you the control over the data.

Suppose

You want to set the value of id which should be greater than 100 only, we can write the logic inside the setter method. We can write the logic not to store the negative numbers in the setter methods.

* Data Hiding

* The standard IDE's are providing the facility to generate the getter and setters. So

it is easy and fast to create an encapsulated class in Java.

NEED:

BETTER CONTROL

GETTER AND SETTER

SECURITY

FLEXIBICITY

DATA-HIDING

→ Data hiding is a procedure done to avoid access to the data members and data methods and their logical implementation. Data hiding can be done by using the access specifiers.

Four access specifier:-

① Default:- Default is the First line of data hiding. If any class in Java is not mentioned with an access specifier, then the compiler will set 'default' as the access specifier. The access specifications of default are extremely similar to that of the public access specifier.

(ii) Public

(iii) Private

(iv) Protected:- The product access specifier protects the class method and members similar to the private access specifier. The main difference is that the access is limited to the entire package unlike only a class with a private access specifier.