(3) Encapsulation

=> Encapsulation is the process of binding data (variables) and the code that manipulates it (methods) into a single unit (class), and restricting direct access to some of the object's components.

• key principles

Feature	Description
a) Private fields	- Data is made private so it cannot be accessed directly from outside
b) Public Getters/Setters	- Controlled access to private data is given using public methods.
c) Class as container	- Everything is wrapped inside a class - the core unit of encapsulation.

• syntax

```
public class className {

    //1. Private data members (variables)
    private DataType fieldname;

    //2. Public getter method to read the value
    public DataType getfieldName() {
        return fieldName;
    }
}
```

```
// 3. Public setter method to modify the value
   public void setfieldName (B DataType value) {
      this. fieldName = value;
   }
```

```
// Optional : You can add behaviour (methods) that
// Operate on private data.
   public void SomeMethod () {
      // operate on fieldName
   }
}
```

- ## Accessing Encapsulated Data

  → In another Class or method

  ⓔ syntax

```
ClassName obj = new ClassName();
   obj. SetFieldName (value);      // set value using setter
Sout ( obj. getfieldName ());     // Get value using getter.
```