Data Hiding

Data hiding means that the internal data of an object is intentionally hidden so it cannot be accessed directly.

The user does not need to know how everything works inside; they only need to know what actions they can perform.

Encapsulation

Encapsulation means combining data and the methods that work with that data in one place.

Everything related to a single object is stored together.

Encapsulation helps keep the code organized and makes it easier to understand.

Data Abstraction

Data abstraction means showing only the most important features while hiding the implementation details.

The user sees the interface but does not know what happens inside.

Conclusion

Their common goal is to protect data, hide unnecessary details, and make code clearer and easier to work with.

They help control access to data and reduce the number of errors in a program.

How are they different?

Data Hiding

The main idea is data protection.

Encapsulation

Data and the methods that work with them are grouped together in one class.

Data Abstraction

Only what the user needs is shown, while the internal logic is hidden.