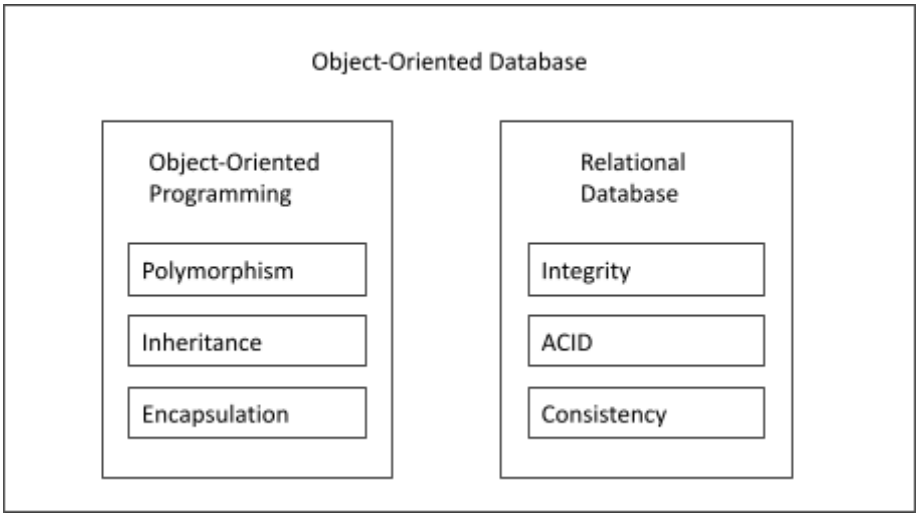
Object-Oriented Database:

It is a type of database in which data is stored in form of objects, which are nothing but the instances of classes (like we have objects for classes in C++)
This makes up what we call an Object-Oriented Database.
This database adds database functionality to the object programming languages. (combination of relational database and object-oriented language)

It is formed of various components:

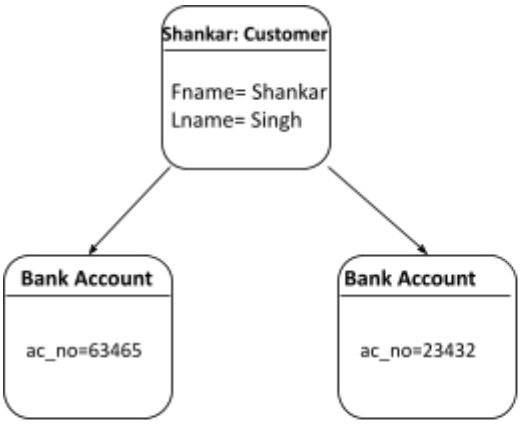
- **Objects:** They are either built-in(default) or user-defined.
- **Classes:** Schema or blueprint for objects.
- **Methods:** determine the behavior of a class.
- **Pointers:** Retrieve elements from the object database and define relations between them.

Below is the image that depicts an Object-oriented database formed by combination of Object programming language and Relational Database.

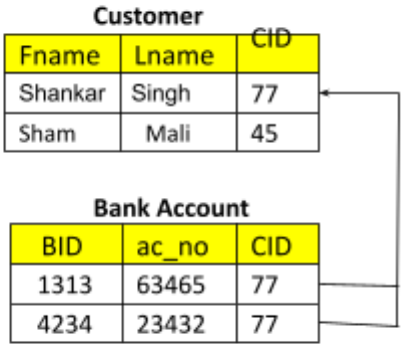


The main motive of objects in OODBMS is the possibility of user-constructed types. Sometimes the database can be very complex, having multiple relations. So, maintaining a relationship between them can be tedious at times.

- In Object-oriented databases data is treated as an object.
- All bits of information come in one instantly available object package instead of multiple tables.



Object-Oriented



Relational

Above is the difference between the representation of databases presenting the same data.

An object-oriented management system provides the functionality of an Object oriented language when dealing with complex data.
This feature brings attributes and behaviors of data together into one entity.

Advantages:

- Data storage and retrieval is easy and quick.
- Can handle complex data relations and more variety of data types than standard relational databases.
- Relatively friendly to model the advance real world problems
- Works with functionality of OOPs and Object Oriented languages.
- Object Id is auto assigned.

Disadvantages:

- High complexity causes performance issues like read, write, update and delete operations are slowed down.
- Not much of a community support as isn't widely adopted as relational databases.
- Does not support views like relational databases do.

Some examples of Object-oriented databases are ObjectDB, Versant, GemStone.