Report:

What is OOP:

Object-oriented programming (OOP) is a computer programming model that organizes software design around data or objects, rather than functions and logic. An object can be defined as a data field that has unique attributes and specific behaviour. This programming approach is suitable for programs that are large, complex, and actively updated or maintained. The organization of an object-oriented program also makes the method beneficial for collaborative development where all the tasks are divided into groups. Other benefits of OOP include code reusability, scalability, and efficiency.

I used:

1. Classes
2. Objects
3. Methods
4. Composition
5. Abstraction
6. Inheritance
7. String manipulation
8. Polymorphism static and dynamic both
9. Overloading
10. Overriding

Benefits of these concepts:

These make troubleshooting and bug detection easy because of the modularity provided.

Reusable code using inheritance and abstract classes like all the books extended the Book class.

Polymorphism allowed the implementation of the normal and acoustic books easy as they had different functionality of different methods.

The overall approach to the problem became easy and it helped me to overcome the problem effectively and efficiently.

JDBC:  
JDBC stands for Java Database Connectivity, which is a standard Java API for database-independent connectivity between the Java programming language and a wide variety of databases. JDBC is basically a specification that provides a complete set of interfaces to allow portable access to the underlying database.

The JDBC library contains APIs for each of the tasks below that are commonly associated with using a database.

1. Creating a database connection.
2. Creating MySQL statements.
3. Executing MySQL queries in the database.
4. Viewing and editing the resulting records.

HOW I USED IT:

I used a plugin to connect my tools->database to connect to MySql to the bookdb and then performed crud operations.

These were insertion, updation, deletion and creation. I used foreign keys to reference to the parent tables. I used constraints which were took into consideration while the insertion took place.

1. Example of OOPS Concepts used:  
   Database related all methods are in the new databaseHandler class.
2. Normal books and Acoustic books are inheriting the Book class.
3. The book class is abstract and has function bodies in it.
4. All the functions are overridden in the normal and acoustic class which are present in the abstract book class.
5. Userloan handles all the loan related functions and has a composition relationship with the normal and the acoustic book classes.