Properties
========
 It represents the data in the form of K,V pair
 It represents an object of type java.util.Properties
 Properties object holds the data which would be changing frequently in our application.

Program to demonstrate the usage of Properties object in java
==
```
import java.io.*;
import java.util.*;
class PropertiesApp
{
      public static void main(String[] args)throws Exception
      {
            FileInputStream fis = new FileInputStream("application.properties");
            Properties properties = new Properties();
            properties.load(fis);

            String url  = properties.getProperty("url");
            String user = properties.getProperty("user");
            String password = properties.getProperty("password");

            System.out.println("URL  IS ::"+url);
            System.out.println("USER IS ::"+user);
            System.out.println("PWD  IS ::"+password);

      }
}
```
application.properties
==================
```
url =jdbc:oracle:thin:@localhost:1521:XE
user=System
password=root123
```

Output
```
D:\jdbcoctbatch>javac PropertiesApp.java

D:\jdbcoctbatch>java PropertiesApp
URL  IS ::jdbc:mysql:///octbatch
USER IS ::root
PWD  IS ::root123

D:\jdbcoctbatch>java PropertiesApp
URL  IS ::jdbc:oracle:thin:@localhost:1521:XE
USER IS ::System
PWD  IS ::root123
```

PrepardStatement(I)
===============
 public abstract PreparedStatement prepareStatement(String query) throws SQLException;

While using PreparedStatement the query woudl be as shown below
```
      String sqlInsertQuery ="insert into
student(`sname`,`sage`,`saddress`,`sgender`)values(?,?,?,?)";
      PreparedStatement pstmt = con.prepareStatement(sqlInsertQuery);
```

```
      //query compiled ready for execution
      pstmt.setString(1,"apeksha");
      pstmt.setInt(2,26);
      pstmt.setString(3,"MI");
      pstmt.setString(4,"F");

      int rowCount = pstmt.executeUpdate();

      refer: JDBCPreparedStatementApp

JDBC Project Requirement
====================
      1. Develop a console based application in the following manner
            a. Create a menu for the user to perform CRUD operation as shown below
                        1. Press 1 for Insert operation
                        2. Press 2 for select operation
                        3. Press 3 for Update operation
                        4. Press 4 for Delete operation
                        5. Press 5 for exit
                              Note: anything above 5 tell invalid operation

            b. If user presses 1
                  a. Take inputs from the user to accept the data like
                              1. sid(pk)  2. sname 3. sage 4. saddress
                  b. perform insertion operation
                  c. display suitable message as
                              a. record inserted succesfully
                              b. record insertion failed

            c. If user presses 2
                  a. Take inputs from the user to accept the data like
                              1. sid(pk)
                  b. perform select operation
                  c. display suitable message as
                              a. display the details in table format.
                              b. record not available for the given id.

            d. b. If user presses 3
                  a. Take inputs from the user to accept the data like
                              1. sid(pk)
                  b. for the entered id display the details first
                                    sid        : XXXXX (no change becoz it is pk)
                                    sname : XXXXX   enter new sname :: XXXXX
                                    sage     : XXXXX   enter new sage     :: YYYYY
                                    saddr   : XXXXX    enter new saddr   :: YYYYY
                  c. display suitable message as
                              a. record updated succesfully
                              b. record updation failed

            e. If user presses 4
                  a. Take inputs from the user to accept the data like
                              1. sid(pk)
                  b. perform delete operation
                  c. display suitable message as
                              a. record deleted succesfully.
                              b. record not available for the given id.

Advantages of PreparedStatement
===============================
```

1. Performance is very high compared to Statement approach becoz query will be compiled only once.
2. Since we don't send the query multiple times b/w java application and database traffic will be reduced.
3. inputs to the query need not be supplied at the begining dynamically we can supply the inputs.
4. inputs to the query can be supplied just like java style, no need to perform formatting as per the DB specification.
5. Best suitable for inserting Date values.
6. Best sutiable for insertion of BLOB's and CLOB's (image and pdf files).
7. It prevents SQLInjection Attack.

Limitation of PreparedStatement
==========

```
            Statement stmt = connection.createStatement();//[samsung phone ----> airtelsim,jiosim,vi]GSMA
                  stmt.executeUpdate("insert into student values ()...");
                  stmt.executeQuery("select * from student");
                  stmt.executeUpdate("delete from student wher....");
```

      One statement object can be used to execute mulitple query but with no change in inputs.

```
      PreparedStatement pstmt = connection.prepareStatement("select * from student");//[Jio Phone----> jio sim]CDMA
                  pstmt.executeQuery();
```

      One PreparedStatement object is restricted to only one query, that query can be executed multiple times
      with change in input.

Which of the following represent valid statements ?
   1. delete from employee where ename = ?(valid)
   2. delete from employee ? ename = ? (invalid)
   3. delete from ? where ename = ? (invalid)
   4. delete ? employees where ename = ?(invalid)

Note: we can use ? only in the place of input values and we cannot use in the place of sql keywords, tablenames
          and column names.

Static query vs Dynamic query
==========

The sql query without positional parameter(?) is called static query.

```
            eg: delete from employee where ename = 'sachin';
```

The sql query with positional parameter(?) is called dynamic query

```
            eg: delete from employee where ename = ?
                  select eid,ename,esal from employee where esal > ?
```

Note:
Simple Statement object can be used for static queries, where as Preparedstatement object can be used for static queries
and dynamic queries also.