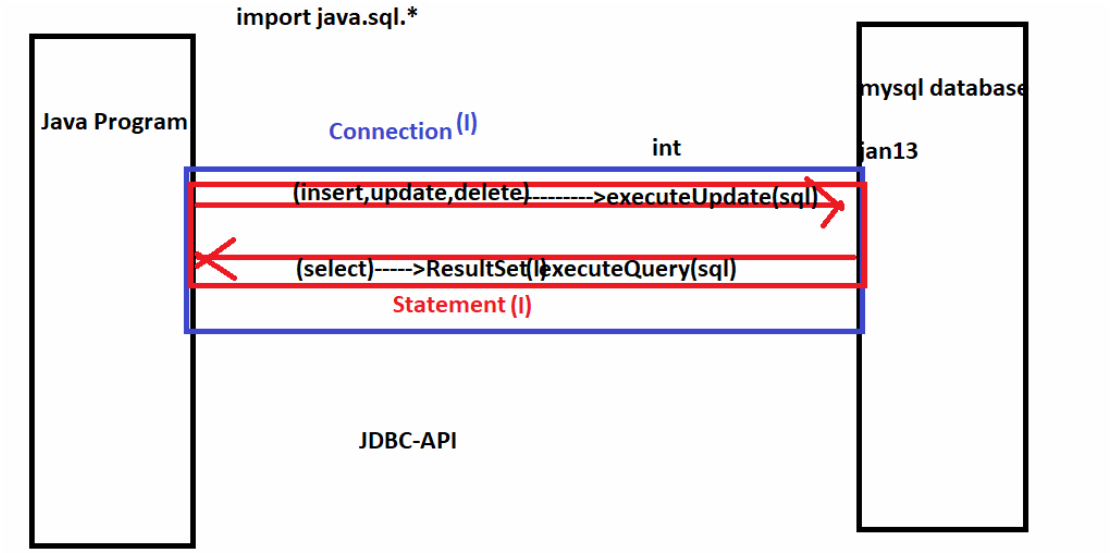

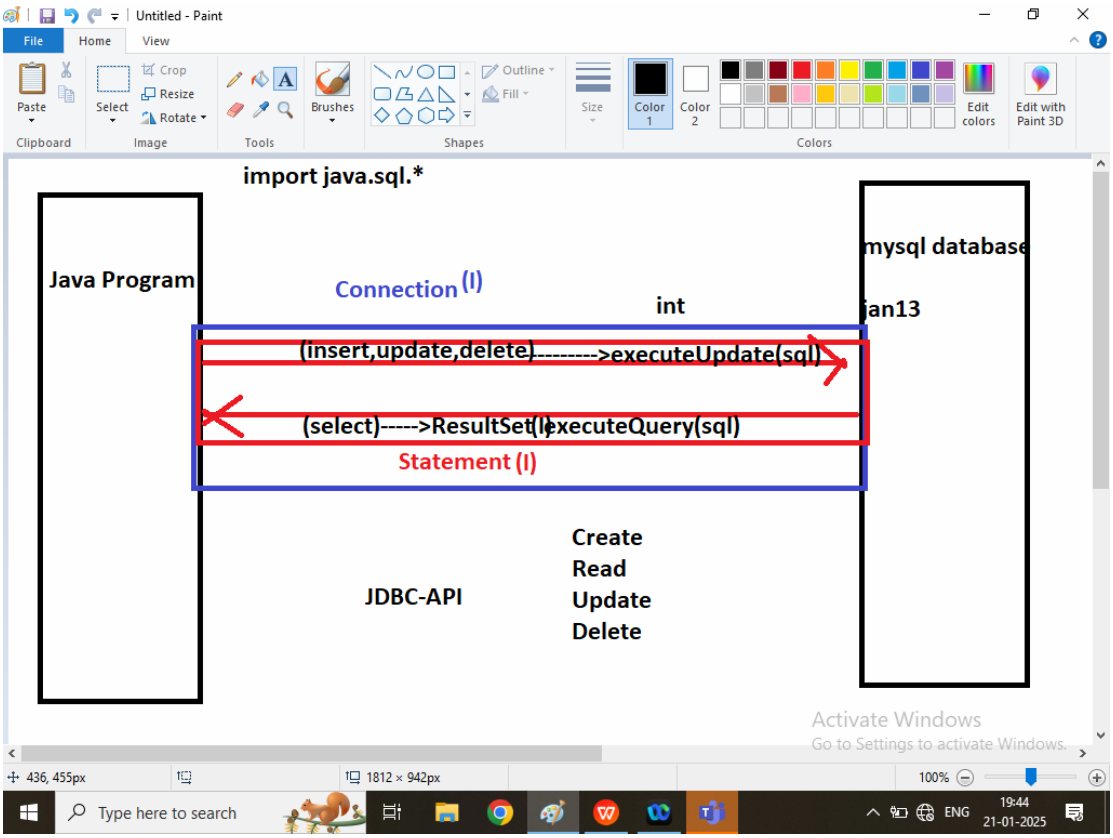

Q1. Explain JDBC in java Programming?
Ans: The JDBC(Java database connectivity) is a java api that allows applications to interact with database. It provides methods for Reading , updating, deletion ,insertion data in the database using java program

Features of jdbc
1. Database Independence
2. SQL Integration
3. Connection Management

Core Component of JDBC

1. **Connection** : This is Interface comes from java.sql(Represents a session with database)
2. **DriverManager**: It is a class which is Manages database drivers and establises a connection
3. **Statement** : It is interfaces comes from java.sql package and it is executes the sql query
4. ResultSet: This is also interface comes from java.sql package and it is holds data retrieved by the database query

Steps of java Database connectivity

Step1: Register the Driver
Class.forName("com.mysql.cj.jdbc.Driver");
Note: forName() method throws checked Exception "ClassNotFoundException"

Step2: Create the Connection
Connection conn=DriverManager.getConnection(String url,String userName,String password);
Example:
String url="jdbc:mysql://localhost:3306/jan13";
String un="root";
String ps="Ram@1234";
Connection conn=DriverManager.getConnection(url,un,ps);

Note: getConnection() method throws checkedException "**SQLException**"

Step3: Write SQL Query
Insert/update/delete/select

Step4: Create an Object of Statement
Statement stmt=conn.createStatement();

Step5: call executeQuery or executeUpdate() method via object of Statement

If our frequent operation is data insertion/updation/deletion then we should call executeUpdate() method

Syntax:
int executeUpdate(String sql);
Example :
int r=stmt.executeUpdate(sql);
If our operation data reading(select) from the database then we should call executeQuery() method
Syntax:
ResultSet executeQuery(String sql)
ResultSet rs=stmt.executeQuery(sql);

Extract data from ResultSet
Methods of ResultSet
Boolean next()
int getInt(column name);
float getFloat(column name)
String getString(column name);

Step6: Close the Connection
conn.close();