Steps for integrating tomcat with database mysql →

1. yum provides mysql → See package of mysql
2. yum install mariadb105-3:10.5.16-1.amzn2023.0.7.x86_64 -y
3. yum provides java-11
4. yum install java-11-amazon-corretto-1:11.0.18+10-1.amzn2023.x86_64 -y
5. wget
   https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.102/bin/apache-tomcat-9.0.102.tar.gz
6. tar -xvf apache-tomcat-9.0.102.tar.gz -C /opt/
7. mysql -h mysql-db.cra0ye0m8qsl.ap-south-1.rds.amazonaws.com -u admin -pCloudBlitz1234
8. cp /home/ec2-user/student.war /opt/apache-tomcat-9.0.102/webapps/
9. cp /home/ec2-user/mysql-connector.jar /opt/apache-tomcat-9.0.102/lib/
10. Edit the apache-tomcat/conf/context.xml
    vim context.xml

```
                <Resource name="jdbc/TestDB" auth="Container"
type="javax.sql.DataSource"
        maxTotal="100" maxIdle="30" maxWaitMillis="10000"
        username="USERNAME" password="PASSWORD"
driverClassName="com.mysql.jdbc.Driver"
        url="jdbc:mysql://DB-ENDPOINT:3306/DATABASE"/>
```

Mysql -h RDS <endpoint> -u <username> -p<Password>

```
    CREATE DATABASE studentapp;
    use studentapp;
    CREATE TABLE if not exists students(student_id INT NOT NULL AUTO_INCREMENT,
        student_name VARCHAR(100) NOT NULL,
      student_addr VARCHAR(100) NOT NULL,
        student_age VARCHAR(3) NOT NULL,
        student_qual VARCHAR(20) NOT NULL,
        student_percent VARCHAR(10) NOT NULL,
        student_year_passed VARCHAR(10) NOT NULL,
        PRIMARY KEY (student_id)
    );
```

11. ./catalina.sh start (Which is in apache-tomcat/bin/catalina.sh)
12. curl localhost:8080
13. Port enable 8080 (tomcat), 3306 (database)
14. Hit on Browser public ip:8080/student/

Your data will be saved in the database.

Files– Student.war & mysql-connector.jar

Three tier Project With Tomcat :

1. Create a RDS database.
2. Do as above which works as a backend
3. Create a Frontend Server having Nginx .
4. In Nginx having File StudentHome.index

Edit the file and put only backend servers public ip and port

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Home</title>
    <style>
        *{
            margin: 0;
            padding: 0;
        }
        body{
            height: 100vh;
        }
        .body-img img {
            width: 500px;
        }

        a {
            font-size: 30px;
            text-decoration: none;
            color: white;
        }

        .nav a:hover {
            color: black;

        }

        .header {
            height: 60px;
            background-color: rgb(162, 162, 237);
            padding-left: 20px;
            border-bottom-left-radius: 10px;
            border-bottom-right-radius: 10px;
```

```css
        display: flex;
        flex-direction: row;
        justify-content: space-between;
    }

    .nav{
        height: 60px;
        width: 600px;
        padding: 5px;
    }

    .nav a {
        text-decoration: none;
        color: white;
        cursor: pointer;
        margin-left: 40px;
    }
    .footer{
        height: 60px;
        background-color: grey;
        position: relative;
        bottom: 0;
        padding: 10px;
        color: white;
    }

    button{
        border-radius: 20px;
        padding: 10px;
        background-color: blue;
        color: white;

    }

    button:hover {
        background-color:  rgb(4, 4, 73);
        box-shadow: 0px 0px 5px 5px black;
    }
    </style>
</head>

<body>
    <div class="header">
```

```html
    <img
src="https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRXAm-zUxdL7GCxMFO9PLNgu
Disaswkb00fjg&s"
        width="120" />
    <div class="nav">
        <a href="#">Home</a>
        <a href="http://3.6.39.183:8080/student/">Registration</a>
        <a href="#">About</a>
    </div>
</div>
<br/><br/>
<center>
    <h1>Welcome to Student Management Site</h1>
    <br /><br />
    <div class="body-img">
        <img src="
https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcR2xQcwKitRgXfqdi34DYlocPSEXD2
G2zZipg&s" />
    </div>
    <br /><br /><br /><br /><br /><br />
    <button><a href="http://3.6.39.183:8080/student/">Go to the registration
page</a></button>
    <br/><br/><br/>
</center>

</body>

</html>
```

→ Name it index.html in Nginx root directory