

Saturday, 2 March 2024

TitleTomcat Configuration

Lunch an EC2 instance and connect to it.

```
#sudo -i
```

```
#_
- \ - ##### Amazon Linux 2023
-- \ - ##### \
-- \ - ### |
-- \ - # / https://aws.amazon.com/linux/amazon-linux-2023
-- v ~ ' ' ->
---
-- . - 
- / m / ' -
```

Last login: Tue Feb 27 06:23:59 2024 from 3.0.5.35
[ec2-user@ip-172-31-31-190 ~]\$ sudo -i
[root@ip-172-31-31-190 ~]# █

Tomcat requires java so first install java package using this command.

```
#yum install java* -y
```

```
Complete!  
[root@ip-172-31-31-190 ~]# java -version  
openjdk version "21.0.2" 2024-01-16 LTS  
OpenJDK Runtime Environment Corretto-21.0.2.14.1 (build 21.0.2+14-LTS)  
OpenJDK 64-Bit Server VM Corretto-21.0.2.14.1 (build 21.0.2+14-LTS, mixed mode, sharing)  
[root@ip-172-31-31-190 ~]#
```

Download Apache Tomcat using this command.

```
#curl -O https://dlcdn.apache.org/tomcat/tomcat-8/v8.5.99/bin/apache-  
tomcat-8.5.99.tar.gz
```

```
[root@ip-172-31-31-190 ~]# curl -O https://dlcdn.apache.org/tomcat/tomcat-8/v8.5.99/bin/apache-tomcat-8.5.99.tar.gz
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           % Done    0     0  82.6M    0     0      0      0      0  82.9M
[root@ip-172-31-31-190 ~]# ls
apache-tomcat-8.5.99.tar.gz
[root@ip-172-31-31-190 ~]# mv apache-tomcat-8.5.99.tar.gz /opt
```

We need to extract the gzip file.

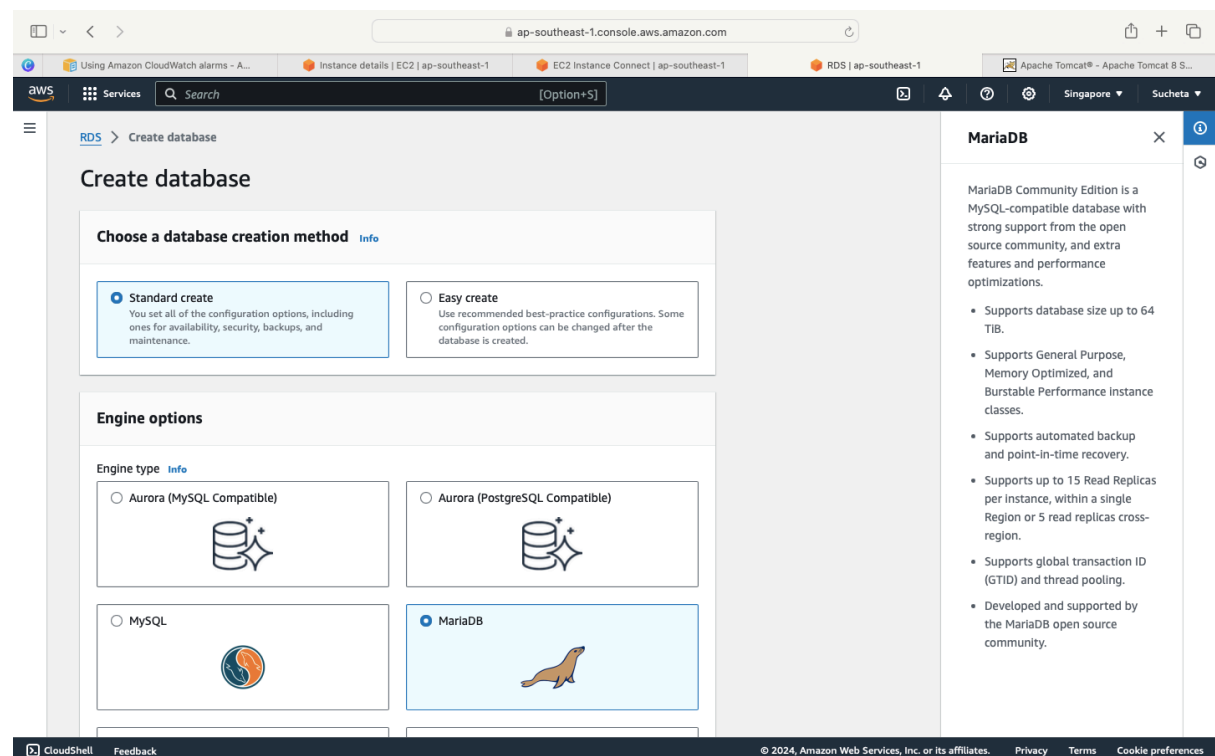
```
#tar -xvzf apache-tomcat-8.5.99.tar.gz
```

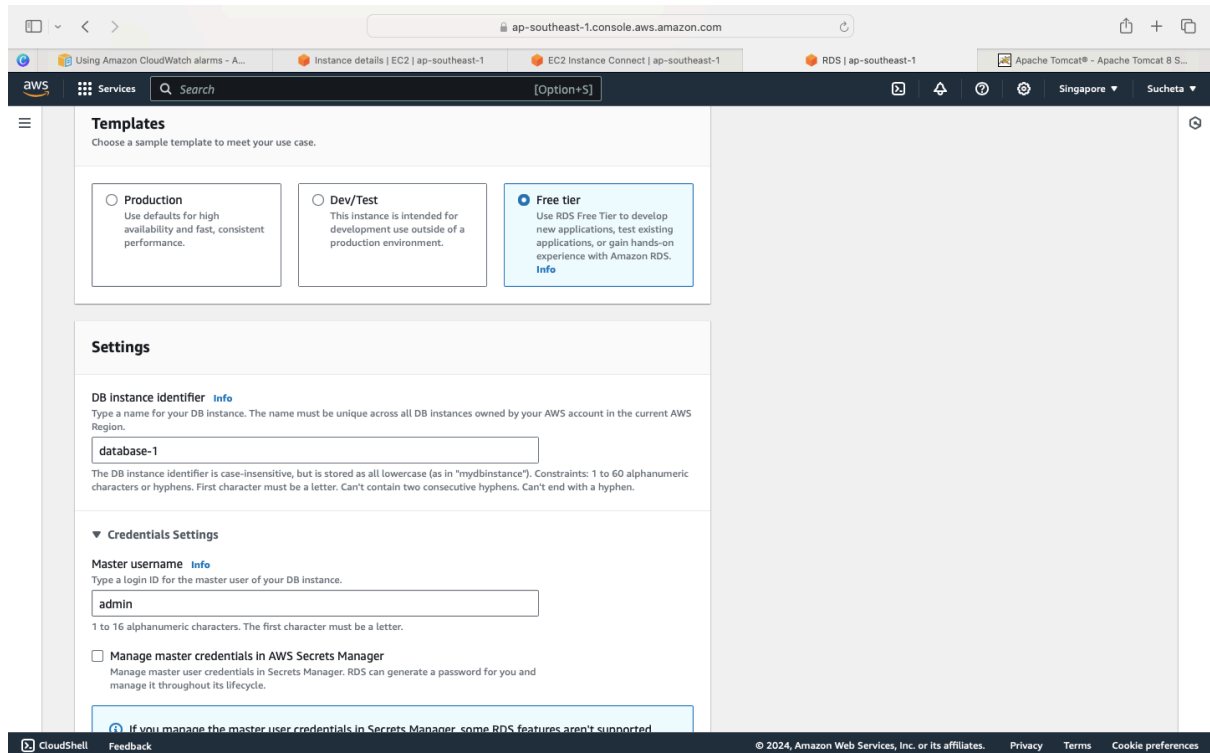
Remove gzip file.

```
#rm -rvf apache-tomcat-8.5.99.tar.gz
```

```
[root@ip-172-31-31-190 opt]# ls
apache-tomcat-8.5.99  apache-tomcat-8.5.99.tar.gz  aws
[root@ip-172-31-31-190 opt]# rm apache-tomcat-8.5.99.tar.gz
rm: remove regular file 'apache-tomcat-8.5.99.tar.gz'? y
[root@ip-172-31-31-190 opt]# ls
apache-tomcat-8.5.99  aws
[root@ip-172-31-31-190 opt]#
```

Create RDS database and copy End point (This will take time to start so we are creating this simultaneously)





Move to /bin directory of Apache-tomcat

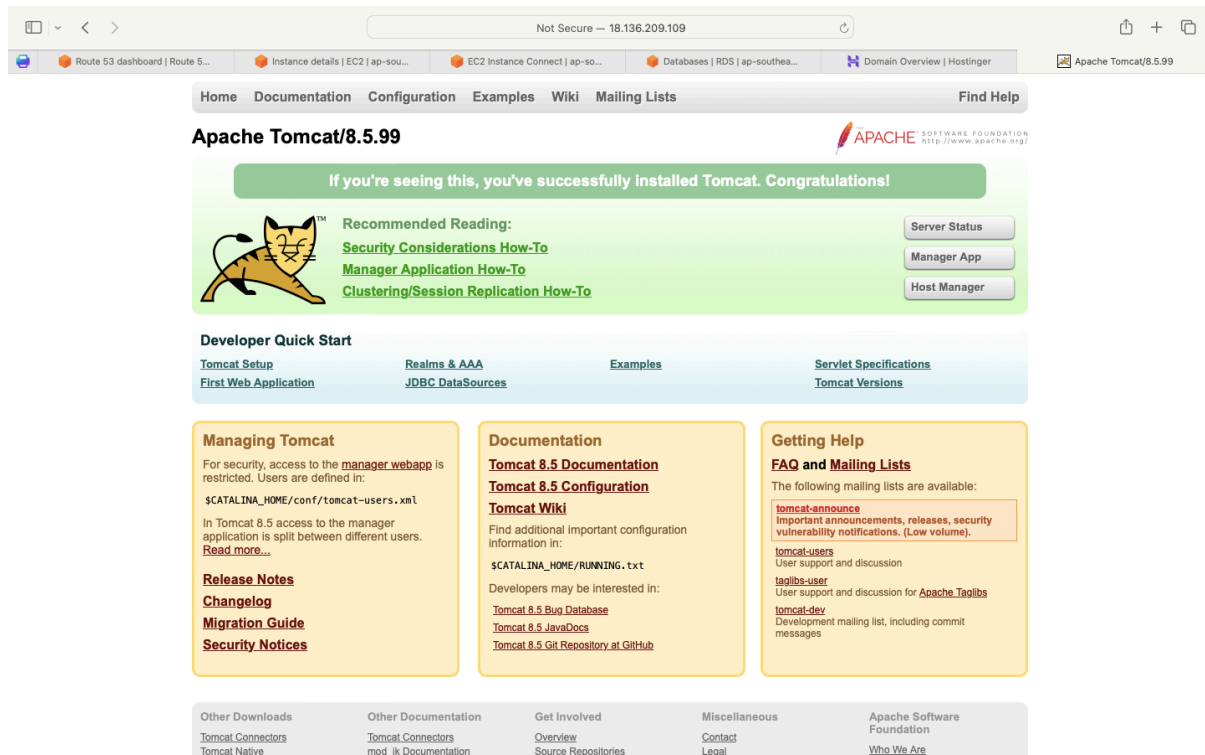
```
#cd /opt/apache-tomcat-8.5.99/bin/
```

In Apache-Tomcat we need start catalina.sh

```
bash catalina.sh start
```

```
[root@ip-172-31-31-190 apache-tomcat-8.5.99]# cd bin
[root@ip-172-31-31-190 bin]# ls
bootstrap.jar          configtest.sh         startup.sh
catalina-tasks.xml    daemon.sh             tomcat-juli.jar
catalina.bat          digest.bat            tomcat-native.tar.gz
catalina.sh           digest.sh             tool-wrapper.bat
ciphers.bat           setclasspath.bat     tool-wrapper.sh
ciphers.sh            setclasspath.sh      version.bat
commons-daemon-native.tar.gz shutdown.bat          version.sh
commons-daemon.jar    shutdown.sh
configtest.bat        startup.bat
[root@ip-172-31-31-190 bin]# bash catalina.sh start
Using CATALINA_BASE:   /opt/apache-tomcat-8.5.99
Using CATALINA_HOME:   /opt/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /opt/apache-tomcat-8.5.99/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/apache-tomcat-8.5.99/bin/bootstrap.jar:/opt/apache-tomcat-8.5.99/bin/tomcat-juli.jar
Tomcat started.
[root@ip-172-31-31-190 bin]#
```

Tomcat installation is successful, we can check that (<http://18.136.209.109:8080>)
PublicIP:8080



In /lib directory of Apache-Tomcat we need to download mysql-connector.jar file using below command

```
#cd /opt/apache-tomcat-8.5.99/lib
```

```
#curl -O https://s3-us-west-2.amazonaws.com/mysql-connector.jar
```

```
[root@ip-172-31-31-190 lib]# curl -O https://s3-us-west-2.amazonaws.com/mysql-connector.jar
[ % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 309    0 309    0    0    471      0  --:--:-- --:--:-- --:--:-- 471
[root@ip-172-31-31-190 lib]# ls
annotations-api.jar      jspic-api.jar           tomcat-il8n-ja.jar
catalina-ant.jar         jsp-api.jar             tomcat-il8n-ko.jar
catalina-ha.jar          mysql-connector.jar      tomcat-il8n-ru.jar
catalina-storeconfig.jar servlet-api.jar           tomcat-il8n-zh-CN.jar
catalina-tribes.jar      tomcat-api.jar           tomcat-jdbc.jar
catalina.jar             tomcat-coyote.jar        tomcat-jni.jar
ecj-4.6.3.jar            tomcat-dbcp.jar          tomcat-util-scan.jar
el-api.jar               tomcat-il8n-de.jar       tomcat-util.jar
jasper-el.jar            tomcat-il8n-es.jar       tomcat-websocket.jar
jasper.jar               tomcat-il8n-fr.jar       websocket-api.jar
[root@ip-172-31-31-190 lib]#
```

In /webapps directory of Apache-Tomcat we need to download source code student.war file using below command.

```
#cd /opt/apache-tomcat-8.5.99/webapps
```

```
#curl -O https://s3-us-west-2.amazonaws.com/student.war
```

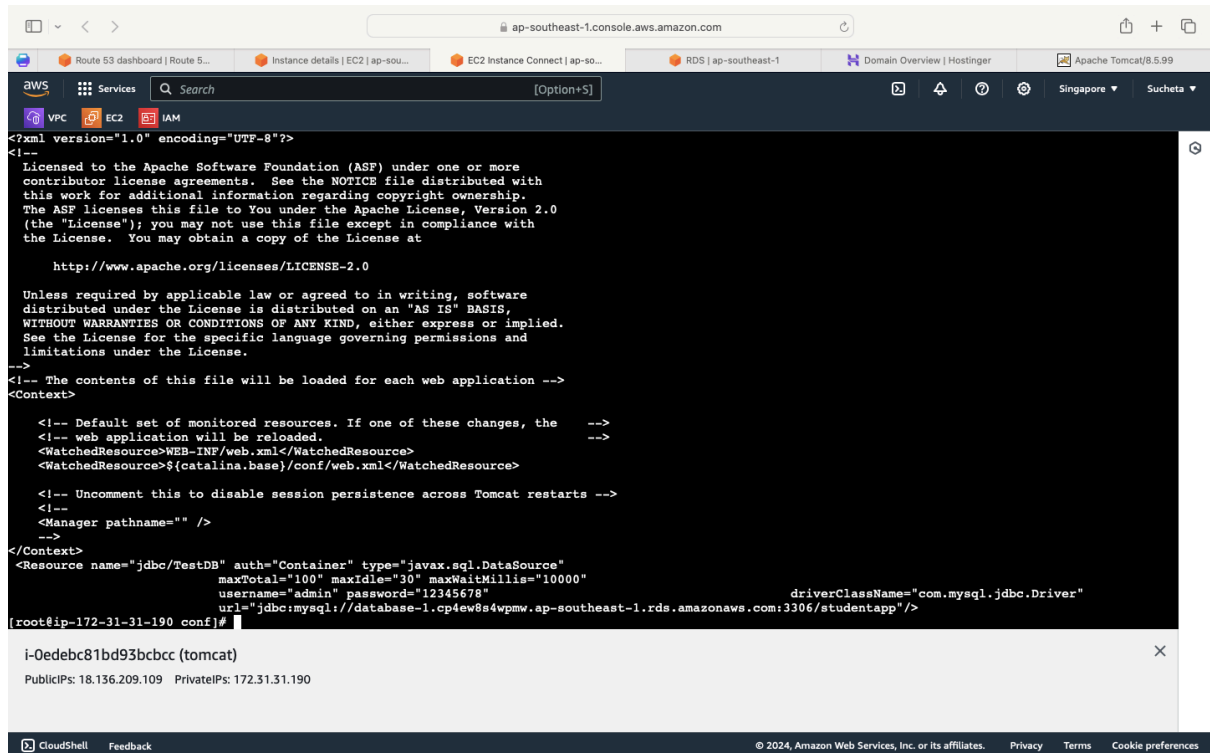
```
[root@ip-172-31-31-190 apache-tomcat-8.5.99]# cd webapps/
[root@ip-172-31-31-190 webapps]# ls
ROOT docs examples host-manager manager
[root@ip-172-31-31-190 webapps]# curl -O https://s3-us-west-2.amazonaws.com/student.war
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100  437      0  437    0     0    876      0 --:--:-- --:--:-- --:--:--   875
[root@ip-172-31-31-190 webapps]# ls
ROOT docs examples host-manager manager student.war
[root@ip-172-31-31-190 webapps]#
```

After that we need to mention our mysql username, password and RDS end point.

For that we can add below content to context.xml file in conf directory of Apache-Tomcat.

```
#vim /opt/apache.tomcat/conf/context.xml
```

```
<Resource name="jdbc/TestDB" auth="Container" type="javax.sql.DataSource"
            maxTotal="100" maxIdle="30" maxWaitMillis="10000"
            username="admin" password="12345678"
            driverClassName="com.mysql.jdbc.Driver"
            url="jdbc:mysql://database-1.cp4ew8s4wpmw.ap-
southeast-1.rds.amazonaws.com:3306/studentapp"/>
```



After that again stop and start catalina.sh file.

```
#bash catalina.sh stop
```

```
#bash catalina.sh start
```

```
root@ip-172-31-31-190 bin]# bash catalina.sh stop
Using CATALINA_BASE:   /opt/apache-tomcat-8.5.99
Using CATALINA_HOME:   /opt/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /opt/apache-tomcat-8.5.99/temp
Using JRE_HOME:        /usr
Using CLASSPATH:        /opt/apache-tomcat-8.5.99/bin/bootstrap.jar:/opt/apache-tomcat-8.5.99/bin/tomcat-juli.jar
NOTE: Picked up JDK_JAVA_OPTIONS:  --add-opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.base/java.io=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED --add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED
root@ip-172-31-31-190 bin]# bash catalina.sh start
Using CATALINA_BASE:   /opt/apache-tomcat-8.5.99
Using CATALINA_HOME:   /opt/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /opt/apache-tomcat-8.5.99/temp
Using JRE_HOME:        /usr
Using CLASSPATH:        /opt/apache-tomcat-8.5.99/bin/bootstrap.jar:/opt/apache-tomcat-8.5.99/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
root@ip-172-31-31-190 bin]#
```

For database we download mariadb-server using below command.

```
#yum install mariadb-server
```

```
#mysql -u admin -p12345678 -h database-1.cp4ew8s4wpmw.ap-southeast-1.rds.amazonaws.com
```

```
ap-southeast-1.console.aws.amazon.com

Route 53 dashboard | Route 53... | Instance details | EC2 | ap-so... | RDS | ap-southeast-1 | EC2 Instance Connect | ap-so... | Domain Overview | Hostinger | Apache Tomcat/8.5.99

AWS Services Search [Option+S]

VPC EC2 IAM

[root@ip-172-31-31-190 ~]# mysql -u admin -p12345678 -h database-1.cp4ew8s4wpmw.ap-southeast-1.rds.amazonaws.com
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 82
Server version: 10.11.6-MariaDB-log managed by https://aws.amazon.com/rds/

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| innodb |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.003 sec)

MariaDB [(none)]> create database studentapp;
Query OK, 1 row affected (0.003 sec)

MariaDB [(none)]> use studentapp;
Database changed
MariaDB [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));
Query OK, 0 rows affected (0.009 sec)

MariaDB [studentapp]> describe students;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| student_id | int(11) | NO | PRI | NULL | auto_increment |
| student_name | varchar(100) | NO | | NULL | |
| student_addr | varchar(100) | NO | | NULL | |
| student_age | varchar(3) | NO | | NULL | |
| student_qual | varchar(20) | NO | | NULL | |
| student_percent | varchar(10) | NO | | NULL | |
| student_year_passed | varchar(10) | NO | | NULL | |
+-----+
```

```
5 rows in set (0.003 sec)

MariaDB [(none)]> create database studentapp;
Query OK, 1 row affected (0.003 sec)

MariaDB [(none)]> use studentapp;
Database changed
MariaDB [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));
Query OK, 0 rows affected (0.009 sec)

MariaDB [studentapp]> describe students;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| student_id | int(11) | NO | PRI | NULL | auto_increment |
| student_name | varchar(100) | NO | | NULL | |
| student_addr | varchar(100) | NO | | NULL | |
| student_age | varchar(3) | NO | | NULL | |
| student_qual | varchar(20) | NO | | NULL | |
| student_percent | varchar(10) | NO | | NULL | |
| student_year_passed | varchar(10) | NO | | NULL | |
+-----+
7 rows in set (0.001 sec)

MariaDB [studentapp]> describe students;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| student_id | int(11) | NO | PRI | NULL | auto_increment |
| student_name | varchar(100) | NO | | NULL | |
| student_addr | varchar(100) | NO | | NULL | |
| student_age | varchar(3) | NO | | NULL | |
| student_qual | varchar(20) | NO | | NULL | |
| student_percent | varchar(10) | NO | | NULL | |
| student_year_passed | varchar(10) | NO | | NULL | |
+-----+
7 rows in set (0.001 sec)

MariaDB [studentapp]>
```

Add database using mysql command.

#bash catalina.sh stop

#bash catalina.sh start

Hit PublicIP:8080/student/ Fill the data and register.

[Register Student](#)

Students List

Student ID	StudentName	Student Addr	Student Age	Student Qualification	Student Percentage	Student Year Passed	Edit	Delete
5	Madhura	pune	22	12th	90.74	2021	edit	delete
6	padmasluri	kolhapur	21	12th	66	2017	edit	delete
7	Yogeshree	kolhapur	21	11	78	2019	edit	delete
8	MM	pune	21	12th	66	2017	edit	delete