Sem : MSc ICT 3rd Sem
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Q.2. Do the following using Micro services architecture   30 marks

There are two services

1. A Customer Service which maintains the record of customers and interacts with a table customer_master having field customer_id, email, name, rating, address and phone number. The rating is between 1 to 10 It has a method with the following prototype
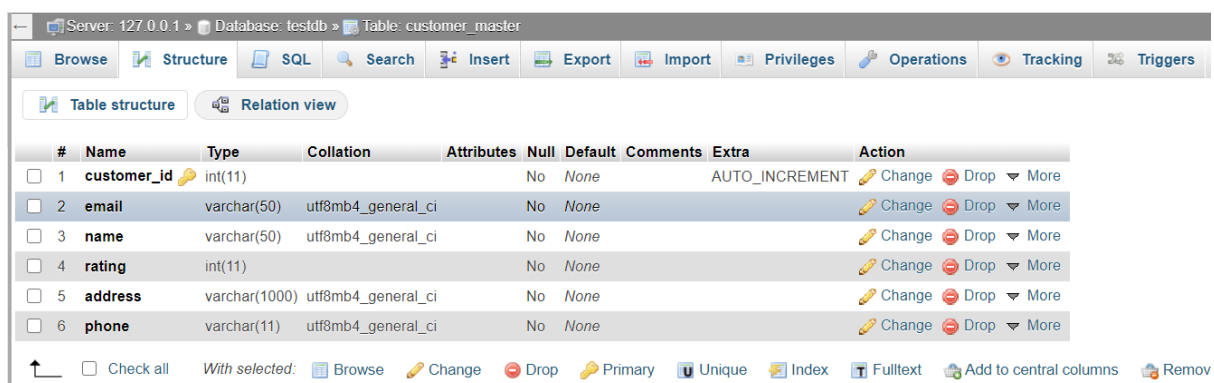
Collection<Customer> getCustomersWithRating(String condition, int rating);

the possible values of condition can only be - less than, greater than, lesss than equal to, greater than equal to and Equal to

2. A client service which has a front end to get List of customers with certain rating. This displays a query page with a form having drop down box containing choices (less than, greater than, lesss than equal to, greater than equal to and Equal to) and a text box to write rating we want. On Submiting this form one gets the list of customer details in form of a table which satisfies the criteria given in the page.

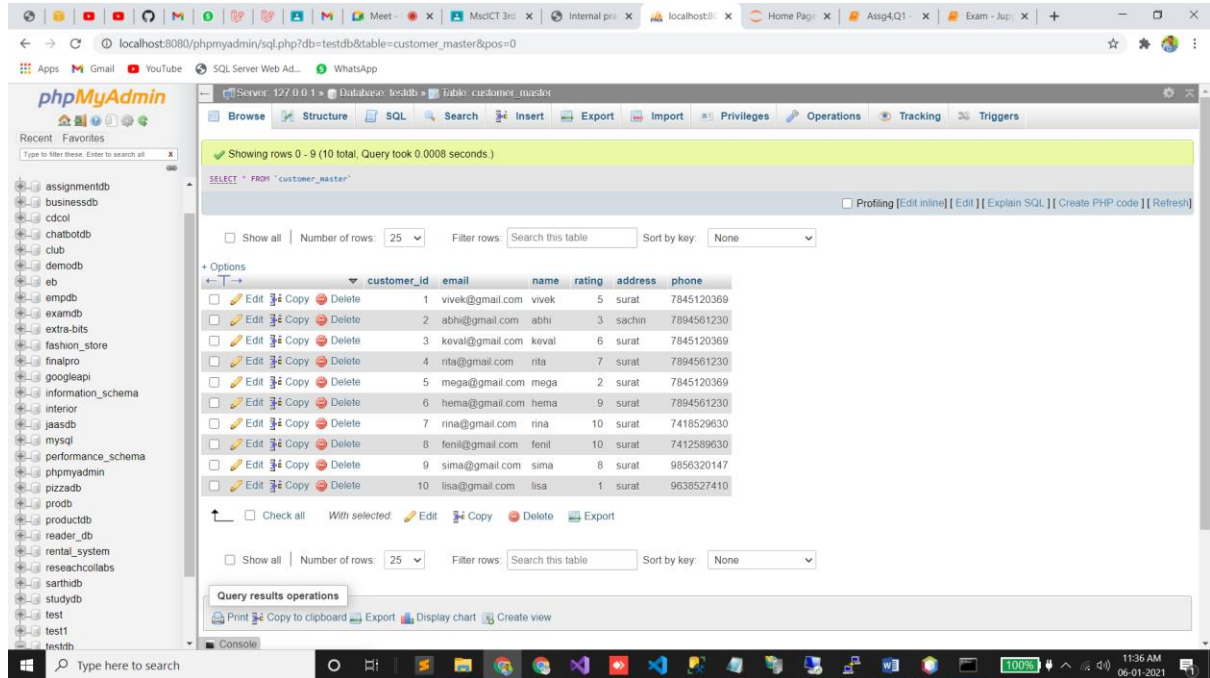Note : No Security is required . You can use JPA, Servlets, JSF etc.

Database:-

0

Services :-
package com.mycompany.mavenproject1.service;

import com.mycompany.mavenproject1.entity.CustomerMaster;
import java.util.Collection;
import javax.persistence.EntityManager;
import javax.persistence.Persistence;
import javax.ws.rs.GET;
import javax.ws.rs.Path;
import javax.ws.rs.PathParam;
import javax.ws.rs.Produces;
import javax.ws.rs.core.MediaType;

```java
@Path("/test")
public class ExampleService {

    EntityManager
em=Persistence.createEntityManagerFactory("examPU").createEntityManager();

    @GET
    @Path("getCustomerMaster")
    @Produces(MediaType.APPLICATION_JSON)
    public Collection<CustomerMaster> getCustomerMaster() {
        return em.createNamedQuery("CustomerMaster.findAll").getResultList();
    }
```

```java
    @GET
    @Produces(MediaType.APPLICATION_JSON)
    @Path("getCustomersWithRating/{condition}/{rating}")
    public Collection<CustomerMaster>
getCustomersWithRating(@PathParam("condition")String condition,@PathParam("rating")
int rating){
        Collection<CustomerMaster> customerMasters;
        if(condition=="Greater")
        {

customerMasters=em.createNamedQuery("CustomerMaster.findByRatingGreater").setPara
meter("rating",rating).getResultList();
        }
        else if(condition == "Less")
        {

customerMasters=em.createNamedQuery("CustomerMaster.findByRatingLess").setParamet
er("rating",rating).getResultList();
        }
        else if(condition == "Greater Equal"){

customerMasters=em.createNamedQuery("CustomerMaster.findByRatingGreaterThanEqual
").setParameter("rating",rating).getResultList();
        }
        else if(condition == "Less Equal"){

customerMasters=em.createNamedQuery("CustomerMaster.findByRatingLessThanEqual").s
etParameter("rating",rating).getResultList();
        }
        else{

customerMasters=em.createNamedQuery("CustomerMaster.findByRating").setParameter("
rating",rating).getResultList();
        }
        return customerMasters;
    }

}
```

Client App :-

customerClient

```java
package com.mycompany.client_app1.client;

import com.mycompany.client_app1.entity.CustomerMaster;
import java.util.Collection;
import javax.ws.rs.GET;
import javax.ws.rs.Path;
import javax.ws.rs.PathParam;
import javax.ws.rs.Produces;
import javax.ws.rs.core.MediaType;
import org.eclipse.microprofile.rest.client.inject.RegisterRestClient;

/**
 *
 * @author LENOVO
 */
@RegisterRestClient(baseUri = "http://localhost:9090/servicesApp1/rest/test")
public interface customerClient {
    @GET
    @Path("getCustomerMaster")
    @Produces(MediaType.APPLICATION_JSON)
    public Collection<CustomerMaster> getCustomerMaster();

    @GET
    @Produces(MediaType.APPLICATION_JSON)
    @Path("getCustomersWithRating/{condition}/{rating}")
    public Collection<CustomerMaster>
getCustomersWithRating(@PathParam("condition")String condition,@PathParam("rating")
int rating);

}
```


Bean:-
```java
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package com.mycompany.client_app1.bean;

import com.mycompany.client_app1.client.customerClient;
import com.mycompany.client_app1.entity.CustomerMaster;
```

```java
import java.util.Collection;
import javax.inject.Named;
import javax.enterprise.context.RequestScoped;
import javax.inject.Inject;
import org.eclipse.microprofile.rest.client.inject.RestClient;

/**
 *
 * @author LENOVO
 */
@Named(value = "customerBean")
@RequestScoped
public class CustomerBean {

    @Inject @RestClient customerClient cc;
    Collection<CustomerMaster> customerMasters;
    String condition,rating;

    public String getCondition() {
        return condition;
    }

    public void setCondition(String condition) {
        this.condition = condition;
    }

    public String getRating() {
        return rating;
    }

    public void setRating(String rating) {
        this.rating = rating;
    }

    public Collection<CustomerMaster> getCustomerMasters() {

        return customerMasters;
    }

    public void setCustomerMasters(Collection<CustomerMaster> customerMasters) {
        this.customerMasters = customerMasters;
    }
    /**
     * Creates a new instance of CustomerBean
     */
    public CustomerBean() {
        try{
```

```
        customerMasters=cc.getCustomerMaster();
      }catch(Exception e){ e.printStackTrace(); }
    }

    public void customerMasterRating()
    {
      customerMasters=null;
      customerMasters=cc.getCustomersWithRating(condition,Integer.parseInt(rating));
      //return "index.xhtml";
    }
}
```

Index.xhtml

```xml
<?xml version='1.0' encoding='UTF-8' ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
    xmlns:h="http://xmlns.jcp.org/jsf/html"
    xmlns:f="http://xmlns.jcp.org/jsf/core">
  <h:head>
    <title>Facelet Title</title>
  </h:head>
  <h:body>
    <h:form>
      Select condition
      <h:selectOneMenu value="#{ customerBean.condition }" required="">
        <f:selectItem itemLabel="Greater" itemValue="Greater" />
        <f:selectItem itemLabel="Less" itemValue="Less" />
        <f:selectItem itemLabel="Greater Equal" itemValue="Greater Equal" />
        <f:selectItem itemLabel="Less Equal" itemValue="Less Equal" />
        <f:selectItem itemLabel="Equal" itemValue="Equal" />
      </h:selectOneMenu>
      Rating :-  <h:inputText id="rating" value="${customerBean.rating}" required=""/>
      <h:commandButton action="#{customerBean.customerMasterRating()}"
value="Submit"/>
    </h:form>
    <f:view>
      <h:form>
        <h1><h:outputText value="List"/></h1>
        <h:dataTable value="#{customerBean.customerMasters}" var="item">
          <h:column>
            <f:facet name="header">
              <h:outputText value="CustomerId"/>
            </f:facet>
```

```xml
                    <h:outputText value="#{item.customerId}"/>
                </h:column>
                <h:column>
                    <f:facet name="header">
                        <h:outputText value="Email"/>
                    </f:facet>
                    <h:outputText value="#{item.email}"/>
                </h:column>
                <h:column>
                    <f:facet name="header">
                        <h:outputText value="Name"/>
                    </f:facet>
                    <h:outputText value="#{item.name}"/>
                </h:column>
                <h:column>
                    <f:facet name="header">
                        <h:outputText value="Rating"/>
                    </f:facet>
                    <h:outputText value="#{item.rating}"/>
                </h:column>
                <h:column>
                    <f:facet name="header">
                        <h:outputText value="Address"/>
                    </f:facet>
                    <h:outputText value="#{item.address}"/>
                </h:column>
                <h:column>
                    <f:facet name="header">
                        <h:outputText value="Phone"/>
                    </f:facet>
                    <h:outputText value="#{item.phone}"/>
                </h:column>
            </h:dataTable>
        </h:form>
    </f:view>

  </h:body>
</html>
```

Select condition [Equal ▼] Rating :- [9] [Submit]

List

CustomerId	Email	Name	Rating	Address	Phone
6	hema@gmail.com	hema	9	surat	7894561230

Select condition [Less ▼] Rating :- [10] [Submit]

List

CustomerId	Email	Name	Rating	Address	Phone
1	vivek@gmail.com	vivek	5	surat	7845120369
2	abhi@gmail.com	abhi	3	sachin	7894561230
3	keval@gmail.com	keval	6	surat	7845120369
4	rita@gmail.com	rita	7	surat	7894561230
5	mega@gmail.com	mega	2	surat	7845120369
6	hema@gmail.com	hema	9	surat	7894561230
9	sima@gmail.com	sima	8	surat	9856320147
10	lisa@gmail.com	lisa	1	surat	9638527410

Select condition [Greater Equal ▼] Rating :- [5   ]　[Submit]

List

CustomerId	Email	Name	Rating	Address	Phone
1	vivek@gmail.com	vivek	5	surat	7845120369
2	abhi@gmail.com	abhi	3	sachin	7894561230
5	mega@gmail.com	mega	2	surat	7845120369
10	lisa@gmail.com	lisa	1	surat	9638527410