server

import socket  
import threading  
  
client\_list = list()  
  
  
def on\_new\_client(clientsocket,addr):  
    while True:  
        msg = clientsocket.recv(1024).decode('ascii')  
        if msg == "ft":  
            clientsocket.send("yes".encode('ascii'))  
            msg = "server "+clientsocket.recv(1024).decode('ascii')  
            with open(msg,"a") as f:  
                msg = clientsocket.recv(1024).decode('ascii')  
                clientsocket.send("ok".encode('ascii'))  
                while(msg == "1"):  
                    txt = clientsocket.recv(1024).decode('ascii')  
                    print(txt)  
                    f.write(txt)  
                    msg = clientsocket.recv(1024).decode('ascii')  
        if msg == "Goodbye":  
            clientsocket.close()  
             
             
serversocket = socket.socket(socket.AF\_INET,socket.SOCK\_STREAM)  
  
host = socket.gethostname()  
port = 9994  
  
serversocket.bind((host,port))  
serversocket.listen(5)  
  
while True:  
    clientsocket,addr=serversocket.accept()  
    client\_list.append((clientsocket,addr))  
    print("Got connection from %s"%str(addr))  
    threading.\_start\_new\_thread(on\_new\_client,(clientsocket,addr))

client

import socket  
import math  
import os  
  
s = socket.socket(socket.AF\_INET,socket.SOCK\_STREAM)  
host = socket.gethostname()  
port = 9994  
s.connect((host,port))  
  
while True:  
    file\_name = input("File name: ")  
    s.send("ft".encode('ascii'))  
    reply = s.recv(1024).decode('ascii')  
    if reply=="yes":  
        with open(file\_name,"r") as f:  
            s.send(file\_name.encode('ascii'))  
            size = os.path.getsize(file\_name)  
            passes = math.floor(size/1024) + 1  
            for i in range(passes):  
                s.send("1".encode('ascii'))  
                if s.recv(1024).decode('ascii') == "ok":  
                    if passes-i-1==0:  
                        txt = f.read()  
                        print("hi")  
                    else:  
                        txt = f.read(1024)  
                    print(txt)  
                    s.send(txt.encode('ascii'))  
            s.send("0".encode('ascii'))

**Problem Statement**

**1.Consider an application that implements a remote dictionary. The dictionary offers four**

**operations: count to return the word count, insert to insert a word and its content, delete to**

**delete a word, and lookup to search for a word and return the content of the word.**

1)Creation of remote interface

package com.company;  
  
import java.rmi.\*;  
import java.util.Dictionary;  
  
interface dictionary extends Remote{  
 public boolean insert(String x,String y) throws RemoteException;  
 public int count()throws RemoteException;  
 public boolean delete(String x)throws RemoteException;  
 public String search(String x)throws RemoteException;  
 public Dictionary<String,String> showContent()throws RemoteException;  
}

2) Provide the implementation of the remote interface

package com.company;  
import java.rmi.\*;  
import java.rmi.server.\*;  
import java.util.\*;  
  
class DictionaryRemote extends UnicastRemoteObject implements dictionary{  
 Dictionary<String,String> dict= new Hashtable<>();  
 DictionaryRemote() throws RemoteException{  
 super();  
 }  
  
 public boolean insert(String x,String y) throws RemoteException{  
 dict.put(x,y);  
 return true;  
 }  
  
 public int count()throws RemoteException{  
 return dict.size();  
 }  
  
 public boolean delete(String x)throws RemoteException{  
 return dict.remove(x) != null;  
 }  
 public String search(String x)throws RemoteException{  
 if(dict.get(x)==null)  
 return "";  
 return dict.get(x);  
 }  
 public Dictionary<String,String> showContent()throws RemoteException{  
 return dict;  
 }  
}

3) Create the RMIClient

package com.company;  
import java.net.MalformedURLException;  
import java.rmi.\*;  
import java.util.Scanner;  
class RMIClient {  
 public static void main(String args[]) {  
 try {  
 int choice = 0;  
 String word, content;  
 Scanner sc = new Scanner(System.*in*);  
 dictionary stub = (dictionary) Naming.*lookup*("rmi://localhost:5000/add");  
 while (choice !=6) {  
 switch (choice) {  
 case 1:  
 System.*out*.println("Word Count in Dictionary is: " + stub.count());  
 break;  
 case 2:  
 System.*out*.println("Enter the word to be entered into Dictionary: ");  
 word = sc.next();  
 System.*out*.print("\nEnter the content of the word to be entered into Dictionary: ");  
 content = sc.next();  
  
 if (stub.insert(word, content))  
 System.*out*.println("Word entered into dictionary successfully");  
 else  
 System.*out*.println("Word not found!");  
  
 break;  
 case 3:  
 System.*out*.println("Enter the word to be deleted: ");  
 word = sc.next();  
 if (stub.delete(word))  
 System.*out*.println("Word deleted from dictionary successfully");  
 else  
 System.*out*.println("Word not found!");  
 break;  
 case 4:  
 System.*out*.println("Enter the word to be looked up: ");  
 word = sc.next();  
 if("".equals(stub.search(word)))  
 System.*out*.println("Word not found!");  
 else  
 System.*out*.println("The Content of the word is: " + stub.search(word));  
 break;  
 case 5:  
 System.*out*.println("The Entire Dictionary is: "+stub.showContent());  
 break;  
 default:  
 System.*out*.println("Please enter a valid choice!");  
 break;  
  
 }  
 System.*out*.println("1 - Count\n2 - Insert\n3 - Delete\n4 - Lookup\n5 - Print Entire Dictionary\n6 - Exit\nEnter your choice: ");  
 choice = sc.nextInt();  
 }  
 } catch (Exception e) {  
 throw new RuntimeException(e);  
 }  
 }  
}

4) Create the RMIServer

package com.company;  
import java.rmi.\*;  
import java.rmi.registry.\*;  
class RMIServer{  
 public static void main(String args[]){  
 try{  
 dictionary stub=new DictionaryRemote();  
 Registry rgsty = LocateRegistry.*createRegistry*(5000);  
 Naming.*rebind*("rmi://localhost:5000/add",stub);  
 }catch(Exception e){System.*out*.println(e);}  
 }  
}

**Adder**

package com.company;

import java.rmi.\*;

public interface Adder extends Remote{

public void add(String author, String title, String details, int stock) throws RemoteException;

public String display() throws RemoteException;

public String search(String author, String title) throws RemoteException;

}

**Adder Remote**

package com.company;

import java.rmi.\*;

import java.rmi.server.\*;

class Book{

String author;

String title;

String details;

int stock;

Book(String author, String title, String details, int stock){

this.author = author;

this.title = title;

this.details = details;

this.stock = stock;

}

public String show(){

String s = new String();

s = this.author + "\n" + this.title + "\n" + this.details + "\n" + this.stock + "\n";

return s;

}

public boolean match(String author,String title){

if (this.author.equals(author) && this.title.equals(title)){

return true;

}

return false;

}

}

public class AdderRemote extends UnicastRemoteObject implements Adder {

Book[] books = new Book[3];

static int i=0;

AdderRemote() throws RemoteException{

super();

}

public void add(String author, String title, String details, int stock) throws RemoteException{

if (i!=4){

books[i] = new Book(author, title, details, stock);

i += 1;

}

}

public String display(){

String s = new String();

for(int j=0;j<2;j++){

s+=books[j].show();

}

return s;

}

public String search(String title, String author){

for(int j=0;j<2;j++){

if (books[j].match(title,author)){

return books[j].show();

}

}

return "Book not found";

}

}

**RMI Client**

package com.company;

import java.rmi.\*;

public class RMIclient {

public static void main(String[] args){

try {

Adder obj = (Adder) Naming.lookup("rmi://localhost:5001/obj");

obj.add("a","aaa","wjhfvcuiwydcv",2);

obj.add("b","bbb","hgdvuwdcd",1);

System.out.println(obj.display());

System.out.println(obj.search("a","aaa"));

if (!((obj.search("a","aaa")).equals("Book not found"))){

System.out.println("hiii");

}

}

catch(Exception e){

System.out.println(e);

}

}

}

**RMIServer**

package com.company;

import java.rmi.\*;

import java.rmi.registry.\*;

public class RMIserver {

public static void main(String args[]){

try {

Adder obj = new AdderRemote();

Registry rgsty = LocateRegistry.createRegistry(5001);

Naming.rebind("rmi://localhost:5001/obj", obj);

}

catch(Exception e){

System.out.println(e);

       }

   }

}

**db.php**

<?php

$dbServername="localhost";

$dbUsername="root";

$dbPassword="";

$dbname="emp";

$conn=mysqli\_connect($dbServername,$dbUsername,$dbPassword,$dbname);

?>

**delete.php**

<?php

include\_once 'db.php';

$eno=$\_GET['eno'];

$sql="DELETE FROM EMP WHERE id='$eno';";

mysqli\_query($conn,$sql);

header("location:http://localhost/dbms/main.html?");

?>

**delete1.php**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Inserting</title>

    <style>

    body {

            background-image: url("https://img.freepik.com/free-vector/hand-painted-watercolor-pastel-sky-background\_23-2148902771.jpg?w=2000");

        }

input[name]{

  width: 20%;

  padding: 10px 50px;

  margin: 8px 0;

  box-sizing: border-box;

  text-align:center;

  color: black;

}

</style>

</head>

<body>

    <center>

    <form action="delete.php" method="GET">

        <label for="eno">EMPLOYEE ID:</label>

    <input type="number" name="eno" id="eno" placeholder="ENO" min="100" max="200">

    <br>

    <button type="submit" name="submit">DELETE</button>

    </center>

    </form>

</body>

</html>

**index.php**

<?php

    include\_once 'db.php';

?>

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

    <style>

        body {

            background-image: url("https://img.freepik.com/free-vector/hand-painted-watercolor-pastel-sky-background\_23-2148902771.jpg?w=2000");

        }

table {

border-collapse: collapse;

width: 50%;

color: #588c7e;

font-family: monospace;

font-size: 25px;

text-align: center;

}

th {

background-color: #588c7e;

color: white;

}

tr:nth-child(even) {background-color: #f2f2f2}

button {

  background-color: #04AA6D;

  border: none;

  color: white;

  padding: 16px 32px;

  text-decoration: none;

  margin: 4px 2px;

  cursor: pointer;

}

</style>

</head>

<body>

    <table>

        <thead>

            <tr>

                <th>ID</th>

                <th>Name</th>

                <th>Designation</th>

            </tr>

        </thead>

    <tbody>

<?php

    $sql="SELECT \* FROM EMP;";

    $result=mysqli\_query($conn,$sql);

    $resultCheck = mysqli\_num\_rows($result);

    if($resultCheck > 0)

    {

        while($row=mysqli\_fetch\_assoc($result))

        {

            echo "<tr><td>".$row['id']."</td><td>".$row['name']."</td><td>".$row['desig']."</td></tr>";

        }

    }

    ?>

    </tbody>

    </table>

    <br>

    <center>

    <form action="http://localhost/dbms/main.html">

    <button>BACK</button>

    </center>

**insert.html**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Inserting</title>

</head>

<body>

    <form action="insert1.php" method="POST">

        <input type="number" name="eno" id="eno" placeholder="ENO" min="100" max="200">

        <br>

        <input type="text" name="name" id="name" placeholder="name">

        <br>

        <button type="submit" name="submit">INSERT</button>

    </form>

</body>

</html>

**insert.php**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Inserting</title>

    <style>

    body {

            background-image: url("https://img.freepik.com/free-vector/hand-painted-watercolor-pastel-sky-background\_23-2148902771.jpg?w=2000");

        }

input[name]{

  width: 20%;

  padding: 10px 50px;

  margin: 8px 0;

  box-sizing: border-box;

  text-align:center;

  color: black;

}

</style>

</head>

<body>

    <center>

    <form action="insert1.php" method="GET">

        <label for="eno2">EMPLOYEE ID:</label>

    <input type="number" name="eno" id="eno2" placeholder="ENO" min="100" max="200">

    <br>

    <label for="eno">EMPLOYEE NAME:</label>

    <input type="text" name="name" id="name">

    <br>

    <label for="desig">DESIGNATION:</label>

    <input type="text" name="desig" id="desig">

    <br>

    <button type="submit" name="submit">INSERT</button>

</center>

    </form>

</body>

</html>

**insert1.php**

<?php

include\_once 'db.php';

$name=$\_GET['name'];

$select=mysqli\_query($conn,"SELECT \* FROM emp where name='$name';");

if ($select->num\_rows>0){

    echo "ALREADY THERE RA";

}

else{

    $eno=$\_GET['eno'];

    $desig=$\_GET['desig'];

    $sql="INSERT INTO EMP (id,name,desig) VALUES('$eno','$name','$desig');";

    mysqli\_query($conn,$sql);

    header("location:http://localhost/dbms/main.html");

}

?>

**main.html**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>DATABASE</title>

    <style>

        body {

            background-image: url("https://img.freepik.com/free-vector/hand-painted-watercolor-pastel-sky-background\_23-2148902771.jpg?w=2000");

        }

        button {

            background-color: peachpuff;

            color: brown;

            text-align: center;

            height: 50px;

            width: 80 px;

            border: 2px solid black;

            border-radius: 5px;

            font-size: 20px;

        }

    </style>

</head>

<body>

    <center>

        <h1>EMPLOYEE DETAILS</h1>

        <form action="http://localhost/dbms/index.php">

            <button><b>VIEW</b></button>

        </form>

        <br>

        <form action="http://localhost/dbms/insert.php">

            <button><b>INSERT</b></button>

        </form>

        <br>

        <form action="http://localhost/dbms/delete1.php">

            <button><b>DELETE</b></button>

        </form>

        <br>

        <form action="http://localhost/dbms/update.php">

            <button><b>UPDATE</b></button>

        </form>

    </center>

</body>

</html>

**update.php**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <center>

    <form action="update1.php">

        <label for="eno">Eno</label>

        <input type="number" name="eno" id="eno">

        <br>

        <label for="new">New name</label>

        <input type="text" name="new" id="new">

        <br>

        <button type="submit">UPDATE</button>

    </form>

    </center>

</body>

</html>

**update1.php**

<?php

include\_once 'db.php';

$no = $\_GET['eno'];

$result = mysqli\_query($conn,"SELECT \* from emp where id='$no';");

if(mysqli\_num\_rows($result)>0){

    $new = $\_GET['new'];

    $sql="UPDATE emp set name='$new' where id='$no';";

    mysqli\_query($conn,$sql);

    header("location:http://localhost/dbms/index.php");

}