```java
package com.acorn.prj33;

import java.util.ArrayList;
import java.util.List;

import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.bind.annotation.ResponseBody;

@Controller
public class MemberAPIController {
        @ResponseBody
        @RequestMapping( value="/member/list"   , method=RequestMethod.GET)
        public List<Customer> list(){
                List<Customer> list   = new ArrayList<Customer>();
                list.add( new Customer("t1" , "test1"));
                list.add( new Customer("t2" , "test2"));
                list.add( new Customer("t3" , "test3"));
                return list;
        }

        @ResponseBody
        @RequestMapping( value="/member/register" , method=RequestMethod.POST)
        public Customer register(@RequestBody Customer   customer) {
                System.out.println("register");
                System.out.println( customer);                          //db
                return customer ;
        }

        @ResponseBody                              //member/modify/t3
        @RequestMapping( value="/member/modify/{id}" , method=RequestMethod.PUT)
        public void modify(@PathVariable String id ,    @RequestBody Customer customer) {
                System.out.println(  "update" +  id);
                System.out.println(  customer);
        }


        @ResponseBody                              //member/delete/t3
        @RequestMapping( value="/member/delete/{id}" , method=RequestMethod.DELETE)
        public String delete(@PathVariable String id ) {

                System.out.println(    "delete" + id);
                return  id;
        }
}
```

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>

<script>

$(document).ready( function(){
        //alert("hi~~~");
        $("#searchBtn").click( function(){
                //alert("클릭되었어");
                search();
        });

});



function search(){
        alert("조회합니다");
        $.ajax(
            {
                type:"GET" ,
                url: "/prj33/member/list" ,
                success:function(data){
                        let dataHtml  = toHtml(data);
                         $("#result").html(dataHtml);
                        console.log(data)
                },
                error: function(){
                        alert( error);
                }
            }
        );  // 매개변수값을 전달하는데 json타입의 객체로 넘겨줌
}


function toHtml(data){
        alert( data)
        let str="";
        for( let i=0 ; i< data.length; i++){
                let item = data[i];
                str+= "<div>"+ item.id +  item.name +"</div>"
        }
        return  str;
}
</script>
</head>
<body>

화면이다 !!
<div  id="result">
</div>
<button id="searchBtn"> 고객조회</button>
</body>
</html>
```

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
</head>
<body>


<script>
    $(document).ready( function(){


        $("#btn").click( function(){
                let id = $("#id").val();
                let name = $("#name").val();
                let customer = { id:id ,  name:name};
                console.log( customer);
                //  alert("!!!!!!!!");
                 $.ajax(

                        {
                            type:"POST",
                            url:"/prj33/member/register" ,
                            data: JSON.stringify( customer),
                            contentType: "application/json",
                             success: function(data ){
                                alert("등록완료");
                                console.log(data);
                            },
                             error: function(){
                                alert("error");
                            }

                        }
                );
        });

    });

</script>

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

<button id="btn">등록</button>
</body>
</html>
```

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
</head>
<body>


<script>
$(document).ready(function(){

    $("#btn").click(function(){
        let id = $("#id").val();
        let name   =$("#name").val();
        let customer= {id:id, name:name } ;
        $.ajax({
            type:'PUT',                        //  수정 요청 메서드
            url: '/prj33/member/modify/'+id ,      // 요청 URI
            contentType: "application/json",   //   보내는 데이터 type
            data : JSON.stringify(customer),  //  서버로 전송할 데이터. stringify()로 직렬화 필요.
            success : function(result){
                alert("수정완료");
            },
            error   : function(){ alert("error") } // 에러가 발생했을 때, 호출될 함수
        }); // $.ajax()

    });
});
</script>


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

<button   id="btn">수정</button>
</body>
</html>
```

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
</head>
<body>


<script>
$(document).ready(function(){

    $("#btn").click(function(){
        let id= $("#id").val();
        alert( id);
        $.ajax({
            type:'DELETE',                  //  수정 요청 메서드
            url: '/prj33/member/delete/'+id ,      // 요청 URI
            success : function(result){
                alert( result);
                alert("삭제완료");
            },

            error    : function(){ alert("error") } // 에러가 발생했을 때, 호출될 함수
        }); // $.ajax()

    });
});
</script>


아이디:<input type="text" id="id">

<button  id="btn">삭제</button>
</body>
</html>
```

pom.xml

dependency 추가

```xml
        <dependency>
            <groupId>com.fasterxml.jackson.core</groupId>
            <artifactId>jackson-databind</artifactId>
            <version>2.9.3</version>
        </dependency>

        <dependency>
            <groupId>org.codehaus.jackson</groupId>
            <artifactId>jackson-mapper-asl</artifactId>
            <version>1.9.13</version>
        </dependency>
```