

```
1 package mvc;
2
3 import java.math.BigDecimal;
4
5 public class Cst {
6     private int      code;
7     private String   name;
8     private String   email;
9     private String   tel;
10    private BigDecimal asset;
11
12    public Cst() {
13        super();
14    }
15
16    public int getCode() {
17        return code;
18    }
19    public void setCode(int code) {
20        this.code = code;
21    }
22    public String getName() {
23        return name;
24    }
25    public void setName(String name) {
26        this.name = name;
27    }
28    public String getEmail() {
29        return email;
30    }
31    public void setEmail(String email) {
32        this.email = email;
33    }
34    public String getTel() {
35        return tel;
36    }
37    public void setTel(String tel) {
38        this.tel = tel;
39    }
40    public BigDecimal getAsset() {
41        return asset;
42    }
43    public void setAsset(BigDecimal asset) {
44        this.asset = asset;
45    }
46}
47 }
```

```

1 package mvc;
2
3 import java.sql.Connection;
4 import java.sql.DriverManager;
5 import java.sql.PreparedStatement;
6 import java.sql.ResultSet;
7 import java.sql.SQLException;
8 import java.util.ArrayList;
9
10 public class CstDAO05 {
11
12     public ArrayList<Cst> sltMulti(int nStart, int nRows)
13     {
14         ArrayList<Cst> list = new ArrayList<Cst>();
15
16         String driver = "oracle.jdbc.driver.OracleDriver";
17         String url = "jdbc:oracle:thin:@localhost:1521:XE";
18         String user = "dev";
19         String password = "123456";
20
21         String SQL = "SELECT * "
22             + "FROM ( SELECT ROWNUM RNUM "
23             + "       , O.* "
24             + "      FROM ( SELECT * "
25             + "              FROM CUSTOMER "
26             + "             ORDER BY CODE "
27             + "           ) O "
28             + "          ) "
29             + "WHERE RNUM >= ? "
30             + "AND ROWNUM <= ? ";
31
32         Connection conn = null;
33         PreparedStatement pstmt = null;
34         ResultSet rs = null;
35
36         try {
37             Class.forName(driver);
38             conn = DriverManager.getConnection(url, user, password);
39
40             if (conn == null)
41                 throw new Exception("데이터베이스에 연결할 수 없습니다.");
42
43             pstmt = conn.prepareStatement(SQL);
44             pstmt.setInt(1, nstart);
45             pstmt.setInt(2, nRows);
46             rs = pstmt.executeQuery();
47
48             for (int cnt = 0; cnt < nRows; cnt++) {
49                 if (!rs.next())
50                     break;
51                 Cst cst = new Cst();
52                 cst.setCode(rs.getInt("CODE"));
53                 cst.setName(rs.getString("NAME"));
54                 cst.setEmail(rs.getString("EMAIL"));
55                 cst.setTel(rs.getString("TEL"));
56                 cst.setAsset(rs.getBigDecimal("ASSET"));
57                 list.add(cst);
58             }
59         }
60         catch (Exception e) {
61             e.printStackTrace();
62         }
63         finally {
64             if (rs != null) try { rs.close(); } catch(SQLException ex) {}
65             if (pstmt != null) try { pstmt.close(); } catch(SQLException ex) {}
66             if (conn != null) try { conn.close(); } catch(SQLException ex) {}
67         }
68         return list;
69     }
70 }
71 }
```

```

1 package mvc;
2
3 import java.sql.Connection;
4 import java.sql.DriverManager;
5 import java.sql.PreparedStatement;
6 import java.sql.ResultSet;
7 import java.sql.SQLException;
8 import java.util.ArrayList;
9
10 public class CstDAO06 {
11
12     public ArrayList<Cst> sltMulti(int nStart, int nRows)
13     {
14         ArrayList<Cst> list = new ArrayList<Cst>();
15
16         String driver = "oracle.jdbc.driver.OracleDriver";
17         String url = "jdbc:oracle:thin:@localhost:1521:XE";
18         String user = "dev";
19         String password = "123456";
20
21         String SQL = "SELECT * "
22             + "FROM ( SELECT ROWNUM RNUM "
23             + "       , O.* "
24             + "      FROM ( SELECT * "
25             + "              FROM CUSTOMER "
26             + "             ORDER BY CODE "
27             + "           ) O "
28             + "          ) "
29             + "WHERE RNUM >= ? "
30             + "AND ROWNUM <= ? ";
31
32         Connection conn = null;
33         PreparedStatement pstmt = null;
34         ResultSet rs = null;
35
36         try {
37             Class.forName(driver);
38             conn = DriverManager.getConnection(url, user, password);
39
40             if (conn == null)
41                 throw new Exception("데이터베이스에 연결할 수 없습니다.");
42
43             pstmt = conn.prepareStatement(SQL);
44             pstmt.setInt(1, nstart);
45             pstmt.setInt(2, nRows);
46             rs = pstmt.executeQuery();
47
48             for (int cnt = 0; cnt < nRows; cnt++) {
49                 if (!rs.next())
50                     break;
51                 Cst cst = new Cst();
52                 cst.setCode(rs.getInt("CODE"));
53                 cst.setName(rs.getString("NAME"));
54                 cst.setEmail(rs.getString("EMAIL"));
55                 cst.setTel(rs.getString("TEL"));
56                 cst.setAsset(rs.getBigDecimal("ASSET"));
57                 list.add(cst);
58             }
59         }
60         catch (Exception e) {
61             e.printStackTrace();
62         }
63         finally {
64             if (rs != null) try { rs.close(); } catch(SQLException ex) {}
65             if (pstmt != null) try { pstmt.close(); } catch(SQLException ex) {}
66             if (conn != null) try { conn.close(); } catch(SQLException ex) {}
67         }
68         return list;
69     }
70
71     public Cst sltOne(int nCode)
72     {
73         String driver = "oracle.jdbc.driver.OracleDriver";
74         String url = "jdbc:oracle:thin:@localhost:1521:XE";

```

```

75     String user      = "dev";
76     String password = "123456";
77
78     String SQL = "SELECT * FROM CUSTOMER WHERE CODE = ? ";
79
80     Connection conn = null;
81     PreparedStatement pstmt = null;
82     ResultSet rs = null;
83
84     Cst cst = new Cst();
85
86     try {
87         Class.forName(driver);
88         conn = DriverManager.getConnection(url, user, password);
89
90         if (conn == null)
91             throw new Exception("데이터베이스에 연결할 수 없습니다.");
92
93         pstmt = conn.prepareStatement(SQL);
94         pstmt.setInt(1, nCode);
95         rs = pstmt.executeQuery();
96
97         if ( rs.next() )
98         {
99             cst.setCode(rs.getInt("CODE"));
100            cst.setName(rs.getString("NAME"));
101            cst.setEmail(rs.getString("EMAIL"));
102            cst.setTel(rs.getString("TEL"));
103            cst.setAsset(rs.getBigDecimal("ASSET"));
104        }
105    }
106    catch (Exception e) {
107        e.printStackTrace();
108    }
109    finally {
110        if (rs != null) try { rs.close(); } catch(SQLException ex) {}
111        if (pstmt != null) try { pstmt.close(); } catch(SQLException ex) {}
112        if (conn != null) try { conn.close(); } catch(SQLException ex) {}
113    }
114    return cst;
115 }
116
117
118 public int update(Cst cst)
119 {
120     String driver      = "oracle.jdbc.driver.OracleDriver";
121     String url         = "jdbc:oracle:thin:@localhost:1521:XE";
122     String user         = "dev";
123     String password   = "123456";
124     int      res       = 0;
125
126     String SQL = "UPDATE CUSTOMER "
127         + "      SET NAME  = ? "
128         + "      , EMAIL = ? "
129         + "      , TEL   = ? "
130         + "      , ASSET = ? "
131         + " WHERE CODE = ? ";
132
133     Connection conn = null;
134     PreparedStatement pstmt = null;
135
136     try {
137         Class.forName(driver);
138         conn = DriverManager.getConnection(url, user, password);
139
140         if (conn == null)
141             throw new Exception("데이터베이스에 연결할 수 없습니다.");
142
143         pstmt = conn.prepareStatement(SQL);
144         pstmt.setString (1, cst.getName());
145         pstmt.setString (2, cst.getEmail());
146         pstmt.setString (3, cst.getTel());
147         pstmt.setBigDecimal(4, cst.getAsset());
148         pstmt.setInt    (5, cst.getCode());

```

```
149     res = pstmt.executeUpdate();
150 }
151 catch (Exception e) {
152     e.printStackTrace();
153 }
154 finally {
155     if (pstmt != null) try { pstmt.close(); } catch(SQLException ex) {}
156     if (conn != null) try { conn.close(); } catch(SQLException ex) {}
157 }
158 return res;
159 }
160
161 }
```

```
1 <%@page contentType="text/html; charset=UTF-8"%>
2 <HTML>
3 <HEAD>
4 <TITLE>에러 발생</TITLE>
5 </HEAD>
6 <BODY>
7   <H4>에러가 발생하였습니다.</H4>
8   <H2>에러 내용 : ${ERR}</H2>
9 </BODY>
10 </HTML>
```

```
1 package mvc;
2
3 import java.io.IOException;
4
5 import javax.servlet.RequestDispatcher;
6 import javax.servlet.ServletException;
7 import javax.servlet.annotation.WebServlet;
8 import javax.servlet.http.HttpServlet;
9 import javax.servlet.http.HttpServletRequest;
10 import javax.servlet.http.HttpServletResponse;
11
12 //http://localhost:8085/jspbook/CstListCtrl05?CMD=sltmul&PAGE_NO=1
13 @WebServlet("/CstListCtrl05")
14 public class CstListCtrl05 extends HttpServlet {
15     private static final long serialVersionUID = 1L;
16
17     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
18         ServletException, IOException {
19         mainControl(request, response);
20     }
21
22     private void mainControl(HttpServletRequest request, HttpServletResponse response)
23         throws ServletException, IOException
24     {
25         String viewPage = null;
26         String strCmd = request.getParameter("CMD");
27         if ( "sltmul".equals(strCmd) )
28         {
29             CstService05 svc = new CstService05();
30             try {
31                 viewPage = svc.cstList(request, response);
32             } catch (Throwable e) {
33                 throw new ServletException(e);
34             }
35             if (viewPage != null) {
36                 RequestDispatcher dispatcher = request.getRequestDispatcher(viewPage);
37                 dispatcher.forward(request, response);
38             }
39
40         }
41     }
42 }
43 }
```

```
1 package mvc;
2
3 import java.io.IOException;
4
5 import javax.servlet.RequestDispatcher;
6 import javax.servlet.ServletException;
7 import javax.servlet.annotation.WebServlet;
8 import javax.servlet.http.HttpServlet;
9 import javax.servlet.http.HttpServletRequest;
10 import javax.servlet.http.HttpServletResponse;
11
12 //http://localhost:8085/jspbook/CstListCtrl06?CMD=sltmul&PAGE_NO=1
13 @WebServlet("/CstListCtrl06")
14 public class CstListCtrl06 extends HttpServlet {
15     private static final long serialVersionUID = 1L;
16
17     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
18         ServletException, IOException {
19         mainControl(request, response);
20     }
21
22     protected void doPost(HttpServletRequest request, HttpServletResponse response) throws
23         ServletException, IOException {
24         mainControl(request, response);
25     }
26
27     private void mainControl(HttpServletRequest request, HttpServletResponse response)
28         throws ServletException, IOException
29     {
30         request.setCharacterEncoding("UTF-8");
31         response.setContentType("text/html; charset=UTF-8");
32
33         String viewPage = null;
34         String strCmd = request.getParameter("CMD");
35         CstService06 svc = new CstService06();
36
37         // System.out.println(strCmd);
38
39         if ( "sltmul".equals(strCmd) )
40         {
41             try {
42                 viewPage = svc.cstList(request, response);
43             } catch (Throwable e) {
44                 throw new ServletException(e);
45             }
46         } else if ( "sltone".equals(strCmd) )
47         {
48             try {
49                 viewPage = svc.cstOne(request, response);
50             } catch (Throwable e) {
51                 throw new ServletException(e);
52             }
53         } else if ( "update".equals(strCmd) )
54         {
55             try {
56                 viewPage = svc.update(request, response);
57             } catch (Throwable e) {
58                 throw new ServletException(e);
59             }
60         }
61
62         if (viewPage != null) {
63             RequestDispatcher dispatcher = request.getRequestDispatcher(viewPage);
64             dispatcher.forward(request, response);
65         }
66     }
67 }
```

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="UTF-8">
5 <HEAD>
6 <TITLE>고객 명 단</TITLE>
7 </HEAD>
8 <BODY>
9   <A href='/jspbook/CstListCtrl05?CMD=sltmul&PAGE_NO=1'>고객 정보
10  다건조회</A>
11 </BODY>
12 </html>
```

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="UTF-8">
5 <HEAD>
6 <TITLE>고객 명 단</TITLE>
7 </HEAD>
8 <BODY>
9   <A href='/jspbook/CstListCtrl06?CMD=sltmul&PAGE_NO=1'>고객 정보
10  다건조회</A>
11 </BODY>
12 </html>
```

```
1 package mvc;
2
3 import java.io.IOException;
4 import java.math.BigDecimal;
5
6 import javax.servlet.RequestDispatcher;
7 import javax.servlet.ServletException;
8 import javax.servlet.annotation.WebServlet;
9 import javax.servlet.http.HttpServlet;
10 import javax.servlet.http.HttpServletRequest;
11 import javax.servlet.http.HttpServletResponse;
12
13 //http://localhost:8085/jspbook/CstListSvl01
14 @WebServlet("/CstListSvl01")
15 public class CstListSvl01 extends HttpServlet {
16     private static final long serialVersionUID = 1L;
17
18     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
19     ServletException, IOException {
20
21         String strPageNo = request.getParameter("PAGE_NO");
22         int nPageNo;
23         if (strPageNo == null)
24             nPageNo = 1;
25         else
26             nPageNo = Integer.parseInt(strPageNo);
27
28         Cst cst = new Cst();
29         cst.setCode(123);
30         cst.setName("홍길동");
31         cst.setEmail("hong@a.com");
32         cst.setTel("010-1234-1234");
33         cst.setAsset(new BigDecimal("123.123"));
34
35         request.setAttribute("CST", cst);
36         request.setAttribute("PAGE_NO", nPageNo);
37         RequestDispatcher dispatcher =
38             request.getRequestDispatcher("/mvc/CstListView01.jsp");
39         dispatcher.forward(request, response);
40
41     }
42 }
```

```
1 package mvc;
2
3 import java.io.IOException;
4 import java.math.BigDecimal;
5 import java.util.ArrayList;
6
7 import javax.servlet.RequestDispatcher;
8 import javax.servlet.ServletException;
9 import javax.servlet.annotation.WebServlet;
10 import javax.servlet.http.HttpServlet;
11 import javax.servlet.http.HttpServletRequest;
12 import javax.servlet.http.HttpServletResponse;
13
14 //http://localhost:8085/jspbook/CstListSvl02
15 @WebServlet("/CstListSvl02")
16 public class CstListSvl02 extends HttpServlet {
17     private static final long serialVersionUID = 1L;
18
19     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
20         ServletException, IOException {
21
22         String strPageNo = request.getParameter("PAGE_NO");
23         int nPageNo;
24         if (strPageNo == null)
25             nPageNo = 1;
26         else
27             nPageNo = Integer.parseInt(strPageNo);
28
29         ArrayList<Cst> cstList = new ArrayList<Cst>();
30
31         Cst cst = new Cst();
32         cst.setCode(123);
33         cst.setName("홍길동");
34         cst.setEmail("hong@a.com");
35         cst.setTel("010-1234-1234");
36         cst.setAsset(new BigDecimal("123.123"));
37         cstList.add(cst);
38
39         cst = new Cst();
40         cst.setCode(124);
41         cst.setName("홍길순");
42         cst.setEmail("hsun@a.com");
43         cst.setTel("010-1235-1235");
44         cst.setAsset(new BigDecimal("123.456"));
45         cstList.add(cst);
46
47         request.setAttribute("CST_LIST", cstList);
48         request.setAttribute("PAGE_NO", nPageNo);
49         RequestDispatcher dispatcher =
50             request.getRequestDispatcher("/mvc/CstListView02.jsp");
51         dispatcher.forward(request, response);
52     }
53 }
```

```
1 package mvc;
2
3 import java.io.IOException;
4 import java.math.BigDecimal;
5 import java.util.ArrayList;
6
7 import javax.servlet.RequestDispatcher;
8 import javax.servlet.ServletException;
9 import javax.servlet.annotation.WebServlet;
10 import javax.servlet.http.HttpServlet;
11 import javax.servlet.http.HttpServletRequest;
12 import javax.servlet.http.HttpServletResponse;
13
14 //http://localhost:8085/jspbook/CstListSvl03
15 @WebServlet("/CstListSvl03")
16 public class CstListSvl03 extends HttpServlet {
17     private static final long serialVersionUID = 1L;
18
19     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
20         ServletException, IOException {
21
22         String strPageNo = request.getParameter("PAGE_NO");
23         int nPageNo;
24         if (strPageNo == null)
25             nPageNo = 1;
26         else
27             nPageNo = Integer.parseInt(strPageNo);
28         boolean bNext;
29
30         ArrayList<Cst> cstList = new ArrayList<Cst>();
31
32         Cst cst = new Cst();
33         cst.setCode(123);
34         cst.setName("홍길동");
35         cst.setEmail("hong@a.com");
36         cst.setTel("010-1234-1234");
37         cst.setAsset(new BigDecimal("123.123"));
38         cstList.add(cst);
39
40         cst = new Cst();
41         cst.setCode(124);
42         cst.setName("홍길순");
43         cst.setEmail("hsun@a.com");
44         cst.setTel("010-1235-1235");
45         cst.setAsset(new BigDecimal("123.456"));
46         cstList.add(cst);
47
48         if ( nPageNo < 3 )
49             bNext = true;
50         else
51             bNext = false;
52         request.setAttribute("CST_LIST", cstList);
53         request.setAttribute("PAGE_NO", nPageNo);
54         request.setAttribute("NEXT", bNext);
55         RequestDispatcher dispatcher =
56             request.getRequestDispatcher("/mvc/CstListView03.jsp");
57         dispatcher.forward(request, response);
58
59 }
```

```

1 package mvc;
2
3 import java.io.IOException;
4 import java.sql.Connection;
5 import java.sql.DriverManager;
6 import java.sql.PreparedStatement;
7 import java.sql.ResultSet;
8 import java.sql.SQLException;
9 import java.util.ArrayList;
10 import java.util.HashMap;
11
12 import javax.servlet.RequestDispatcher;
13 import javax.servlet.ServletException;
14 import javax.servlet.annotation.WebServlet;
15 import javax.servlet.http.HttpServlet;
16 import javax.servlet.http.HttpServletRequest;
17 import javax.servlet.http.HttpServletResponse;
18
19 //http://localhost:8085/jspbook/CstListSvl04
20 @WebServlet("/CstListSvl04")
21 public class CstListSvl04 extends HttpServlet {
22     private static final long serialVersionUID = 1L;
23
24     @SuppressWarnings("unchecked")
25     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
26     ServletException, IOException {
27
28         String strPageNo = request.getParameter("PAGE_NO");
29         int nPageNo;
30         if (strPageNo == null)
31             nPageNo = 1;
32         else
33             nPageNo = Integer.parseInt(strPageNo);
34
35         HashMap<String, Object> hm = sltMulti(nPageNo);
36
37         request.setAttribute("CST_LIST", (ArrayList<Cst>)hm.get("DATA"));
38         request.setAttribute("PAGE_NO", nPageNo);
39         request.setAttribute("NEXT", (Boolean)hm.get("NEXT"));
40         RequestDispatcher dispatcher =
41             request.getRequestDispatcher("/mvc/CstListView04.jsp");
42         dispatcher.forward(request, response);
43
44
45     public HashMap<String, Object> sltMulti(int nPageNo) throws ServletException {
46         HashMap<String, Object> hm = new HashMap<String, Object>();
47         ArrayList<Cst> list = new ArrayList<Cst>();
48         boolean bNext = false;
49
50         final int MAX_ROWS = 5;
51
52         String driver = "oracle.jdbc.driver.OracleDriver";
53         String url = "jdbc:oracle:thin:@localhost:1521:XE";
54         String user = "dev";
55         String password = "123456";
56
57         String SQL = "SELECT * "
58             + "FROM ( SELECT ROWNUM RNUM "
59             + "       , O.* "
60             + "      FROM ( SELECT * "
61             + "              FROM CUSTOMER "
62             + "              ORDER BY CODE "
63             + "            ) O "
64             + "           ) "
65             + "WHERE RNUM >= ? "
66             + "AND ROWNUM <= ? ";
67
68         Connection conn = null;
69         PreparedStatement pstmt = null;
70         ResultSet rs = null;
71
72         try {

```

```
73         Class.forName(driver);
74         conn = DriverManager.getConnection(url, user, password);
75
76         if (conn == null)
77             throw new Exception("데이터베이스에 연결할 수 없습니다.");
78         pstmt = conn.prepareStatement(SQL);
79         pstmt.setInt(1, (nPageNo-1)*MAX_ROWS+1);
80         pstmt.setInt(2, MAX_ROWS+1);
81         rs = pstmt.executeQuery();
82
83         for (int cnt = 0; cnt < MAX_ROWS; cnt++) {
84             if (!rs.next())
85                 break;
86             Cst cst = new Cst();
87             cst.setCode(rs.getInt("CODE"));
88             cst.setName(rs.getString("NAME"));
89             cst.setEmail(rs.getString("EMAIL"));
90             cst.setTel(rs.getString("TEL"));
91             cst.setAsset(rs.getBigDecimal("ASSET"));
92             list.add(cst);
93         }
94         if (rs.next())
95             bNext = true;
96         else
97             bNext = false;
98         hm.put("DATA", list);
99         hm.put("NEXT", bNext);
100    }
101    catch (Exception e) {
102        throw new ServletException(e);
103    }
104    finally {
105        if (rs != null) try { rs.close(); } catch(SQLException ex) {}
106        if (pstmt != null) try { pstmt.close(); } catch(SQLException ex) {}
107        if (conn != null) try { conn.close(); } catch(SQLException ex) {}
108    }
109    return hm;
110}
111}
112}
```

```
1 <%@page contentType="text/html; charset=UTF-8"%>
2 <HTML>
3   <HEAD><TITLE>고객 명단</TITLE></HEAD>
4   <BODY>
5     <H4>고객 정보 1건 보기] PAGE_NO = ${PAGE_NO}</H4>
6     <TABLE border=1>
7       <TR>
8         <TD width=40>코드</TD>
9         <TD width=50>성명</TD>
10        <TD width=80>이메일</TD>
11        <TD width=90>전화번호</TD>
12        <TD width=70>자산</TD>
13      </TR>
14      <TR>
15        <TD>${CST.code}</TD>
16        <TD>${CST.name}</TD>
17        <TD>${CST.email}</TD>
18        <TD>${CST.tel}</TD>
19        <TD>${CST.asset}</TD>
20      </TR>
21    </TABLE>
22  </BODY>
23 </HTML>
```

```
1 <%@page contentType="text/html; charset=UTF-8"%>
2 <%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
3 <HTML>
4     <HEAD><TITLE>고객 명단</TITLE></HEAD>
5     <BODY>
6         <H4>고객 정보 2건 보기] PAGE_NO = ${PAGE_NO}</H4>
7         <TABLE border=1>
8             <TR>
9                 <TD width=40>코드</TD>
10                <TD width=50>성명</TD>
11                <TD width=80>이메일</TD>
12                <TD width=90>전화번호</TD>
13                <TD width=70>자산</TD>
14            </TR>
15            <c:forEach var="cnt" begin="0" end="${CST_LIST.size() - 1}">
16                <TR>
17                    <TD>${CST_LIST[cnt].code}</TD>
18                    <TD>${CST_LIST[cnt].name}</TD>
19                    <TD>${CST_LIST[cnt].email}</TD>
20                    <TD>${CST_LIST[cnt].tel}</TD>
21                    <TD>${CST_LIST[cnt].asset}</TD>
22                </TR>
23            </c:forEach>
24            <c:forEach var="cst" items="${CST_LIST}">
25                <TR>
26                    <TD>${cst.code}</TD>
27                    <TD>${cst.name}</TD>
28                    <TD>${cst.email}</TD>
29                    <TD>${cst.tel}</TD>
30                    <TD>${cst.asset}</TD>
31                </TR>
32            </c:forEach>
33        </TABLE>
34    </BODY>
35 </HTML>
```

```
1 <%@page contentType="text/html; charset=UTF-8"%>
2 <%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
3 <HTML>
4     <HEAD><TITLE>고객 명 단</TITLE></HEAD>
5     <BODY>
6         <H4>고객 정보 페이지 단위로 보기 PAGE_NO = ${PAGE_NO} NEXT = ${NEXT}</H4>
7         <TABLE border=1>
8             <TR>
9                 <TD width=40>코드</TD>
10                <TD width=50>성명</TD>
11                <TD width=80>이메일</TD>
12                <TD width=90>전화번호</TD>
13                <TD width=70>자산</TD>
14            </TR>
15            <c:forEach var="cnt" begin="0" end="${CST_LIST.size() - 1}">
16                <TR>
17                    <TD>${CST_LIST[cnt].code}</TD>
18                    <TD>${CST_LIST[cnt].name}</TD>
19                    <TD>${CST_LIST[cnt].email}</TD>
20                    <TD>${CST_LIST[cnt].tel}</TD>
21                    <TD>${CST_LIST[cnt].asset}</TD>
22                </TR>
23            </c:forEach>
24        </TABLE>
25        <c:if test="${NEXT}">
26            <A href='/jspbook/CstListSvl03?PAGE_NO=${PAGE_NO+1}'>다음 페이지</A>
27        </c:if>
28    </BODY>
29 </HTML>
```

```
1 <%@page contentType="text/html; charset=UTF-8"%>
2 <%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
3 <HTML>
4     <HEAD><TITLE>고객 명 단</TITLE></HEAD>
5     <BODY>
6         <H4>고객DB정보 페이지 단위로 보기 PAGE_NO = ${PAGE_NO} NEXT = ${NEXT}</H4>
7         <TABLE border=1>
8             <TR>
9                 <TD width=40>코드</TD>
10                <TD width=50>성명</TD>
11                <TD width=80>이메일</TD>
12                <TD width=90>전화번호</TD>
13                <TD width=70>자산</TD>
14            </TR>
15            <c:forEach var="cnt" begin="0" end="${CST_LIST.size() - 1}">
16                <TR>
17                    <TD>${CST_LIST[cnt].code}</TD>
18                    <TD>${CST_LIST[cnt].name}</TD>
19                    <TD>${CST_LIST[cnt].email}</TD>
20                    <TD>${CST_LIST[cnt].tel}</TD>
21                    <TD>${CST_LIST[cnt].asset}</TD>
22                </TR>
23            </c:forEach>
24        </TABLE>
25        <c:if test="${NEXT}">
26            <A href='/jspbook/CstListSvl04?PAGE_NO=${PAGE_NO+1}'>다음 페이지</A>
27        </c:if>
28    </BODY>
29 </HTML>
```

```
1 <%@page contentType="text/html; charset=UTF-8"%>
2 <%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
3 <HTML>
4   <HEAD><TITLE>고객 명 단</TITLE></HEAD>
5   <BODY>
6     <H4>고객DB정보 페이지 단위로 보기 MVC PAGE_NO = ${PAGE_NO} NEXT = ${NEXT}</H4>
7   <TABLE border=1>
8     <TR>
9       <TD width=40>코드</TD>
10      <TD width=50>성명</TD>
11      <TD width=80>이메일</TD>
12      <TD width=90>전화번호</TD>
13      <TD width=70>자산</TD>
14    </TR>
15    <c:forEach var="cnt" begin="0" end="${CST_LIST.size() - 1}">
16      <TR>
17        <TD>${CST_LIST[cnt].code}</TD>
18        <TD>${CST_LIST[cnt].name}</TD>
19        <TD>${CST_LIST[cnt].email}</TD>
20        <TD>${CST_LIST[cnt].tel}</TD>
21        <TD>${CST_LIST[cnt].asset}</TD>
22      </TR>
23    </c:forEach>
24  </TABLE>
25  <c:if test="${NEXT}">
26    <A href='/jspbook/CstListCtrl05?CMD=s1tmul&PAGE_NO=${PAGE_NO+1}'>다음 페이지</A>
27  </c:if>
28 </BODY>
29 </HTML>
```

```
1 <%@page contentType="text/html; charset=UTF-8"%>
2 <%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
3 <HTML>
4     <HEAD><TITLE>고객 명 단</TITLE></HEAD>
5     <BODY>
6         <H4>고객DB정보 페이지 단위로 보기 MVC PAGE_NO = ${PAGE_NO} NEXT = ${NEXT}</H4>
7         <TABLE border=1>
8             <TR>
9                 <TD width=40>코드</TD>
10                <TD width=50>성명</TD>
11                <TD width=80>이메일</TD>
12                <TD width=90>전화번호</TD>
13                <TD width=70>자산</TD>
14                <TD width=90>비고</TD>
15            </TR>
16            <c:forEach var="cnt" begin="0" end="${CST_LIST.size() - 1}">
17                <TR>
18                    <TD>${CST_LIST[cnt].code}</TD>
19                    <TD>${CST_LIST[cnt].name}</TD>
20                    <TD>${CST_LIST[cnt].email}</TD>
21                    <TD>${CST_LIST[cnt].tel}</TD>
22                    <TD>${CST_LIST[cnt].asset}</TD>
23                    <TD><A href='/jspbook/CstListCtrl06?CMD=sltone&CODE=${CST_LIST[cnt].code}&PAGE_NO=${PAGE_NO}>삭제</A></TD>
24                </TR>
25            </c:forEach>
26        </TABLE>
27        <c:if test="${NEXT}">
28            <A href='/jspbook/CstListCtrl06?CMD=sltmul&PAGE_NO=${PAGE_NO+1}'>다음 페이지</A>
29        </c:if>
30    </BODY>
31 </HTML>
```

```
1 package mvc;
2
3 import java.util.ArrayList;
4
5 import javax.servlet.http.HttpServletRequest;
6 import javax.servlet.http.HttpServletResponse;
7
8 public class CstService05 {
9     final int MAX_ROWS = 5;
10
11    public String cstList(HttpServletRequest request, HttpServletResponse response)
12    {
13        String strPageNo = request.getParameter("PAGE_NO");
14        int nPageNo;
15        if (strPageNo == null)
16            nPageNo = 1;
17        else
18            nPageNo = Integer.parseInt(strPageNo);
19        CstDAO05 dao = new CstDAO05();
20        ArrayList<Cst> list = dao.sltMulti((nPageNo-1)*MAX_ROWS+1, MAX_ROWS+1);
21
22        if ( list.size() > MAX_ROWS )
23        {
24            request.setAttribute("NEXT", true);
25            list.remove(MAX_ROWS);
26        }
27        else
28        {
29            request.setAttribute("NEXT", false);
30        }
31
32        request.setAttribute("CST_LIST", list);
33        request.setAttribute("PAGE_NO", nPageNo);
34
35        return "/mvc/CstListView05.jsp";
36    }
37 }
```

```

1 package mvc;
2
3 import java.io.UnsupportedEncodingException;
4 import java.math.BigDecimal;
5 import java.util.ArrayList;
6
7 import javax.servlet.http.HttpServletRequest;
8 import javax.servlet.http.HttpServletResponse;
9
10 public class CstService06 {
11     final int MAX_ROWS = 5;
12
13     public String cstList(HttpServletRequest request, HttpServletResponse response)
14     {
15         String strPageNo = request.getParameter("PAGE_NO");
16         int nPageNo;
17         if (strPageNo == null)
18             nPageNo = 1;
19         else
20             nPageNo = Integer.parseInt(strPageNo);
21         CstDAO06 dao = new CstDAO06();
22         ArrayList<Cst> list = dao.sltMulti((nPageNo-1)*MAX_ROWS+1, MAX_ROWS+1);
23
24         if ( list.size() > MAX_ROWS )
25         {
26             request.setAttribute("NEXT", true);
27             list.remove(MAX_ROWS);
28         }
29         else
30         {
31             request.setAttribute("NEXT", false);
32         }
33
34         request.setAttribute("CST_LIST", list);
35         request.setAttribute("PAGE_NO", nPageNo);
36
37         return "/mvc/CstListView06.jsp";
38     }
39
40     public String cstOne(HttpServletRequest request, HttpServletResponse response)
41     {
42         String strCode = request.getParameter("CODE");
43         int nCode = Integer.parseInt(strCode);
44
45         String strPageNo = request.getParameter("PAGE_NO");
46         int nPageNo;
47         if (strPageNo == null)
48             nPageNo = 1;
49         else
50             nPageNo = Integer.parseInt(strPageNo);
51
52         CstDAO06 dao = new CstDAO06();
53         Cst cst = dao.sltOne(nCode);
54
55         if ( cst == null )
56         {
57             request.setAttribute("ERR", "해당 자료가 없습니다.");
58             return "/mvc/CstErr06.jsp";
59         }
60
61         request.setAttribute("CST", cst);
62         request.setAttribute("PAGE_NO", nPageNo);
63
64         return "/mvc/CstUpdate06.jsp";
65     }
66
67
68     public String update(HttpServletRequest request, HttpServletResponse response) throws
69     UnsupportedEncodingException
70     {
71         String strCode = request.getParameter("code");
72         int nCode = Integer.parseInt(strCode);
73         String strName = request.getParameter("name");
74 //         System.out.println(strName);

```

```
74     String strEmail = request.getParameter("email");
75     String strTel   = request.getParameter("tel");
76     BigDecimal bdAsset = new BigDecimal(request.getParameter("asset"));
77
78     String strPageNo = request.getParameter("PAGE_NO");
79     int nPageNo;
80     if (strPageNo == null)
81         nPageNo = 1;
82     else
83         nPageNo = Integer.parseInt(strPageNo);
84
85     CstDAO06 dao = new CstDAO06();
86     Cst cst = dao.sltOne(nCode);
87
88     if (cst == null)
89     {
90         request.setAttribute("ERR", "해당 자료가 없습니다.");
91         return "/mvc/CstErr06.jsp";
92     }
93
94     cst = new Cst();
95     cst.setCode(nCode);
96     cst.setName(strName);
97     cst.setEmail(strEmail);
98     cst.setTel(strTel);
99     cst.setAsset(bdAsset);
100
101    request.setAttribute("PAGE_NO", nPageNo);
102
103    if (dao.update(cst) == 0)
104    {
105        request.setAttribute("ERR", "오류가 발생 하였습니다.");
106        return "/mvc/CstErr06.jsp";
107    }
108
109    return "/CstListCtrl06?CMD=sltmul";
110 }
111
112 }
```

```
1 <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
2 <html>
3 <head><meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
4 <TITLE>고객 명 단</TITLE>
5 </HEAD>
6 <BODY>
7   <H4>고객DB정보 수정 MVC PAGE_NO = ${PAGE_NO}</H4>
8
9   <form method=post action="/jspbook/CstListCtrl06?CMD=update&PAGE_NO=${PAGE_NO}">
10    <TABLE border=1>
11      <TR>
12        <TD width=40>코드</TD>
13        <TD width=50>성명</TD>
14        <TD width=80>이메일</TD>
15        <TD width=90>전화번호</TD>
16        <TD width=70>자산</TD>
17      </TR>
18      <TR>
19        <!--
20        <TD>${CST.code}<input type="hidden" name="code" value="${CST.code}"> </TD>
21        -->
22        <TD><input type="text" name="code" value="${CST.code}" READONLY> </TD>
23        <TD><input type="text" name="name" value="${CST.name}"></TD>
24        <TD><input type="text" name="email" value="${CST.email}"></TD>
25        <TD><input type="text" name="tel" value="${CST.tel}"></TD>
26        <TD><input type="text" name="asset" value="${CST.asset}"></TD>
27      </TR>
28    </TABLE>
29    <input type="submit" value="수정">
30    <input type="reset" value="다시작성">
31    <input type="button" value="고객정보다진조회"
32
33    onclick="document.location.href='/jspbook/CstListCtrl06?CMD=sitm&PAGE_NO=${PAGE_NO}'"
34  </form>
35 </BODY>
36 </HTML>
```