Digital Asset Management – Mobile Chart/Graph

Summary

Mobile Chart/Graph provides a function that allow \outputting the data in forms of line, column, pie, scatter and bar.

Mobile Chart/Graph can use Java Script to implement vector graphic by using CANVAS element provided by HTML5.

By doing so, you can express chart/graph on the mobile environment where Flash and other plugs hardly usable.

* Flow chart

This component has been developed and tested on the browsers available in the mobile devices.

Since the browser support is different depending the device (PC or mobile device), development and application should be carefully carried out.

The test devices include Galaxy S2, Galaxy S, Galaxy Tab 1, IPad2, IPhone 4.

The test mobile browsers include Android basic browser, Firefox, Safari and Opera Mobile.

The results are as follows.

Android

For the Android web browser, Firefox(6.xx), opera mobile, in android OS 2.3(gengerbread), he execution of HTML5, CSS3 and components is supported stably.

However, in Android 2.1, 2.2, the previous version of Android OS 2.3 (gingerbread), the support for HTML5 and CSS3 is not sufficient to implement the component UI properly.

Opera Mobile was excluded from the support as it caused some problems with handling colors and events.

For testing, Galaxy, Galaxy S2 and Galaxy Tab 1 were used..

iOS

iOS is one of the three supported browsers and both version (iOS 4.2, 4.3) supported HTML5 and CSS3 relatively well.

iPhone4 and iPad2 were used for testing.

Description

Mobile Chart/Graph is largely composed of the data management function (chart/graph data list inquiry, detail inquiry, registration, modification and deletion) and the chart/graph inquiry function that uses data store in the server to output 5 types of charts/graphs. (Refer to the relevant fuctnions)

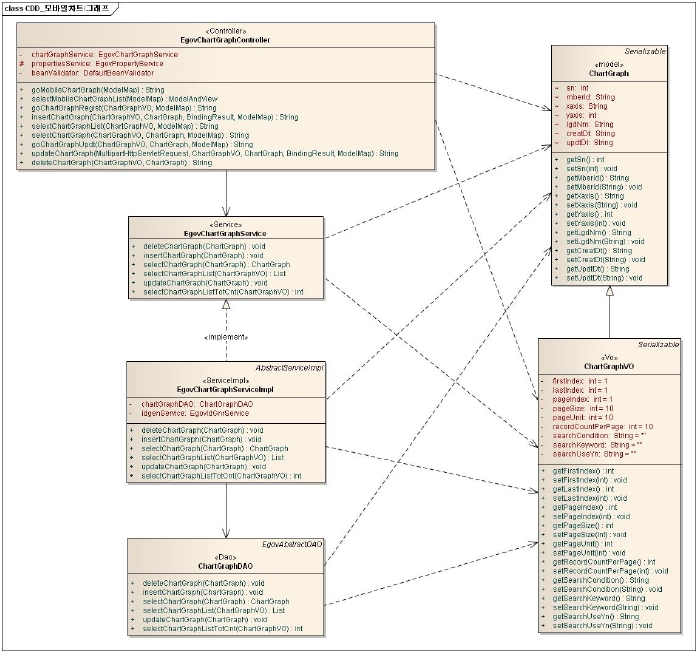
Class diagram



Related sources

ID Generation

In order to use ID Generation Service, add MCG\_ID (Chart/Graph Data ID) to COMTECOPSEQ, the Sequence storing table.



|  |  |  |
| --- | --- | --- |
| Types | Source names | Notes |
| C ontroller | egovframework.mbl.com.mcg.web.EgovC hartGraphC ontroller.java | Mobile Chart/Graph C ontroller C lass |
| Service | egovframework.mbl.com.mcg.service.EgovC hartGraphService.java | Mobile Chart/Graph Service C lass |
| ServiceImpl | egovframework.mbl.com.mcg.service.impl.EgovC hartGraphServiceImpl.java | Mobile Chart/Graph ServiceImpl C lass |
| Model | egovframework.mbl.com.mcg.service.C hartGraph.java | Mobile Chart/Graph Model C lass |
| VO | egovframework.mbl.com.mcg.service.C hartGraphVO.java | Mobile Chart/Graph Contents VO C lass |
| DAO | egovframework.mbl.com.mcg.service.impl.C hartGraphDAO.java | Mobile Chart/Graph Dao C lass |
| JSP | /WEB-INF/jsp/egovframework/mbl/com/mcg/EgovC hartGraphList.jsp | Chart/Graph Data List Inquiry Page |
| JSP | /WEB-INF/jsp/egovframework/mbl/com/mcg/EgovC hartGraphRegist.jsp | Chart/Graph Data Registration Page |
| JSP | /WEB-INF/jsp/egovframework/mbl/com/mcg/EgovC hartGraphUpdt.jsp | Chart/Graph Data Modification Page |
| JSP | /WEB-INF/jsp/egovframework/mbl/com/mcg/EgovC hartGraphDetail.jsp | Chart/Graph Data Detail Inquiry Page |
| JSP | /WEB-INF/jsp/egovframework/mbl/com/mcg/EgovMobileC hartGraph.jsp | Mobile Chart/Graph Inquiry Page |
| QUERY XML | resources/egovframework/sqlmap/mbl/com/mcg/EgovC hartGraph\_SQL\_XXX.xml | Mobile Chart/Graph QUERY XML |
| Validator Rule XML | resources/egovframework/validator/validator-rules.xml | XML that defines Validator Rule |
| Validator XML | resources/egovframework/validator/mbl/com/mcg/EgovC hartGraph.xml | Mobile Chart/Graph Validator XML |
| Message properties | resources/egovframework/message/message-common\_ko\_KR.properties | Mobile Chart/Graph Message properties |
| Idgen XML | resources/egovframework/spring/com/context-idgen.xml | Mobile Chart/Graph Id Generation Idgen XML |

Related tables

Login/membership management/permission management

Mobile Chart/Graph requires the administrator authentication in Mobile Chart/Graph Data list inquiry, detail inquiry registration, modification and deletion.

For authentication, you can connect with login, membership management and permission management components. If you use Spring Security for authentication, make changes as in the followings..

src/main/java/resources/egovframework/spring/com/context-common.xml

<!--Service class that can check the authenticated user’s LoginVO, permissions and authentication-->

<bean id="egovUserDetailsHelper" class="egovframework.com.cmm.util.EgovUserDetailsHelper">

<property name="egovUserDetailsService">

<ref bean="egovUserDetailsSecurityService" />

</property>

</bean>

<!-- Bean that will use Security-based authentication-->

<bean id="egovUserDetailsSecurityService" class="egovframework.com.sec.ram.service.impl.EgovUserDetailsSecurityServiceImpl"/>

web.xml

<!-- 2. Spring Security Setup-->

<filter>

<filter-name>springSecurityFilterChain</filter-name>

<filter-class>org.springframework.web.filter.DelegatingFilterProxy</filter-class>

</filter>

<filter-mapping>

<filter-name>springSecurityFilterChain</filter-name>

<url-pattern>/\*</url-pattern>

</filter-mapping>

<listener>

<listener-class>org.springframework.security.ui.session.HttpSessionEventPublisher</listener-class>

</listener>

<!-- security end -->

<!-- 4. Filter setup for Spring Security logout setup-->

<filter>

<filter-name>EgovSpringSecurityLogoutFilter</filter-name>

<filter-class>egovframework.com.sec.security.filter.EgovSpringSecurityLogoutFilter</filter-class>

</filter>

<filter-mapping>

<filter-name>EgovSpringSecurityLogoutFilter</filter-name>

<url-pattern>/uat/uia/actionLogout.do</url-pattern>

</filter-mapping>

<!-- 4. Filter setup for Spring Security login setup-->

<filter>

<filter-name>EgovSpringSecurityLoginFilter</filter-name>

<filter-class>egovframework.com.sec.security.filter.EgovSpringSecurityLoginFilter</filter-class>

</filter>

<filter-mapping>

<filter-name>EgovSpringSecurityLoginFilter</filter-name>

<url-pattern>\*.do</url-pattern>

</filter-mapping>

As in the above, add Spring Security filter to web.xml.

For details on login, membership management, permission management, refer to the followings.

Login : general login

Membership management: user management

Permission management: permission management

The following pages need the user/administrator permissions.

|  |  |  |
| --- | --- | --- |
| Permission type | Page path | Description |
| administrator | /mbl/com/mpa/selectC hartGraphList.mdo | Mobile Chart/Graph Data list inquiry screen |
| administrator | /mbl/com/mpa/selectC hartGraph.mdo | Mobile Chart/Graph Data detail inquiry screen |
| administrator | /mbl/com/mpa/goC hartGraphRegist.mdo | Mobile Chart/Graph Data registration screen |
| administrator | /mbl/com/mpa/insertC hartGraph.mdo | Mobile Chart/Graph Data registration |
| administrator | /mbl/com/mpa/goC hartGraphUpdt.mdo | Mobile Chart/Graph Data modification screen |
| administrator | /mbl/com/mpa/updateC hartGraph.mdo | Mobile Chart/Graph Data modification |
| administrator | /mbl/com/mpa/deleteC hartGraph.mdo | Mobile Chart/Graph Data deletion |

|  |  |  |
| --- | --- | --- |
| Table names | Table names (English) | Notes |
| Chart/Graph Data | C OMTNC HARTGRAPH | Manage Chart/Graph Data |

Settings and Notes

\* The currently distributed mobile common component adopts HTML5 and CSS3 and this means that it doesn’t support the standards for mobile web site validity check of Mobile OK and W3C. For details on correct validity check, please contact the competent professional institute.

\* Security verification is under progress on the currently distributed mobile component. We plan to complete security verification as soon as possible to release a new security-patched version.

Related functions

Mobile Chart/Graph is largely composed of Mobile Chart/Graph inquiry for general users and Chart/Graph Data list inquiry, Chart/Graph Data detail inquiry Chart/Graph Data registration, Chart/Graph Data modification, Chart/Graph Data deletion for administrators.

Mobile Chart/Graph inquiry

Business rules

You can retrieve 5 types of charts/graphs based on Chart/Graph Data stored in the server.

Related codes

N/A

Screen and execution manual

Action

URL

Controller method

QueryID

Char/graphs inquiry /mbl/com/mcg/selectMobileC hartGraphList.mdo selectMobileC hartGraphList “C hartGraphDAO.selectC hartGraphList”

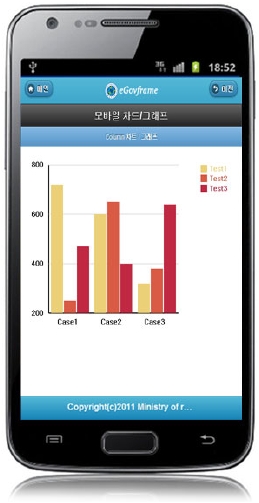
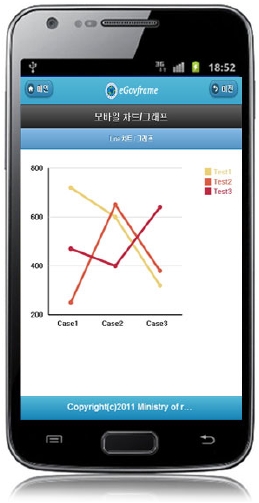
Mobile Chart/Graph inquiry main screen

Mobile Chart/Graph inquiry selection screen



Line Chart/Graph inquiry screen

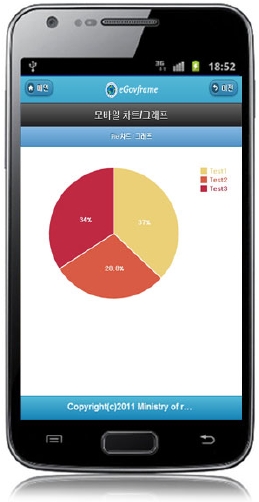
Column Chart/Graph inquiry screen



Pie Chart/Graph inquiry screen

Bar Chart/Graph inquiry screen

Scatter Chart/Graph inquiry screen



Chart/Graph setup

src/main/webapp/js/egovframework/mbl/mcg/mcg.js

// Basing setting

var maxChartGraph = 5;

var chartGraphColor = [ "#ECD078",

"#D95B43",

"#C02942",

"#542437",

"#53777A" ];

var defaultWidth = 500;

// Line Chart/Graph

// Maximum colors of chart

// chart colors (5 in total

// basic size(width)

var scale\_rect = [50\*ratio, 50\*ratio, 300\*ratio, 300\*ratio];

var y\_value\_interval = 200;

var line\_width = 5\*ratio;

var radius = 5\*ratio;

// Column Chart/Graph

var scale\_rect = [50\*ratio, 50\*ratio, 300\*ratio, 300\*ratio];

var y\_value\_interval = 200;

var x\_margin = 5\*ratio;

var x\_bar\_interval = 2\*ratio;

// Pie Chart/Graph

var center\_x = 200\*ratio;

var center\_y = 200\*ratio;

var radius = 150\*ratio;

var lastend = Math.PI\*(3.0/2.0);

var line\_color = "#FFF";

var line\_width = 2\*ratio;

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Location (X AND Y COORDINATES) and size(Width, Height)

Y AXIS scale line interval

line thickness

radius of point

location (X AND Y COORDINATES) and size(Width, Height)

Y AXIS scale line interval

Margin between X axis scales

X axis bar interval

X coordinates of center point

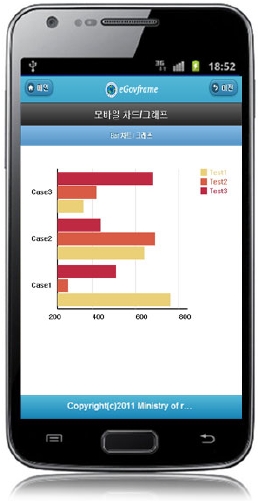
Y coordinates of center point

Radius

Designate Pie start location

Separator line color

Separator line thickness



// Scatter Chart/Graph

var scale\_rect = [50\*ratio, 50\*ratio, 300\*ratio, 300\*ratio];

var x\_value\_interval = 1;

var y\_value\_interval = 200;

var radius = 5\*ratio;

// Bar Chart/Graph

var scale\_rect = [50\*ratio, 50\*ratio, 300\*ratio, 300\*ratio];

var x\_value\_interval = 200;

var y\_margin = 5\*ratio;

var y\_bar\_interval = 2\*ratio;

// scale lines

var main\_line\_color = "#000";

var assist\_line\_color = "#CCC";

var main\_line\_width = 2\*ratio;

var assist\_line\_width = 1\*ratio;

var font\_size = 15\*ratio + "px";

var font\_name = "sans-serif";

var font\_style = "bold";

var x\_line\_margin = 10;

var y\_line\_margin = 40\*ratio;

var x\_label\_position = 0.2;

// legends

var start\_x = 400\*ratio;

var start\_y = 50;

var interval = 20;

var mark\_size = 15\*ratio;

var mark\_interval = 5\*ratio;

var font\_size = 15\*ratio + "px";

var font\_name = "sans-serif";

var font\_style = "bold";

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Location (X AND Y COORDINATES) and size(Width, Height)

X axis scale line interval

Y axis scale line interval

Radius of point

Location (X AND Y COORDINATES) and size(Width, Height)

X axis scale line interval

Y axis scale margin

Y axis bar interval

Main scale line color

Secondary scale line color

Main scale line thickness

Secondary scale line thickness

Font size

Font name

Font style

X axis scale margin

Y axis scale margin

Adjust X axis scale location (0-1: scales are relocated depending on the values)

X coordinates of start location

Y coordinates of start location

Legend interval

Mark size

Interval between mark and legend

Font size

Font name

Font style

\* The ratio variables are for Chart/Graph size changes based on the actual device screen sizes.

You can change Chart/Graph settings by modifying the variables in the Java script files.

Chart/Graph Data list inquiry

Business rules

You can use the list inquiry as the inquiry condition. By clicking the Register button, you can move to the Chart/Graph registration screen to register new data.

Related codes

N/A

Screen and execution manual

|  |  |  |  |
| --- | --- | --- | --- |
| Action | URL | Controller method | QueryID |
| Inquiry | /mbl/com/mcg/selectC hartGraphList.mdo | selectC hartGraphList | “C hartGraphDAO.selectC hartGraphList” |
|  | /mbl/com/mcg/selectC hartGraphList.mdo | selectC hartGraphListTotC nt | “C hartGraphDAO.selectC hartGraphListTotC nt” |
| Register | /mbl/com/mcg/goC hartGraphRegist.mdo | goC hartGraphRegist |  |
| Click list | /mbl/com/mcg/selectC hartGraph.mdo | selectC hartGraph | “C hartGraphDAO.selectC hartGraph” |

10 Chart/Graph Data lists are retrieved per page and paging is carried out on 10 page basis. The search conditions include legend names, X axis values and Y axis values.

To change the search range per page, change pageUnit and pageSize in context-properties.xml.

(This setting affects the entire common service function.)



Inquiry: In order to Chart/Graph Data, select the search condition at the top, enter a key word and click Inquiry button.

Register: To register Chart/Graph Data, use the Register button at the top to move Chart/Graph Data registration screen.

Click the list: moves Chart/Graph Data detail inquiry screen.

Chart/Graph Data detail inquiry

Business rules

By clicking a list on Chart/Graph Data list inquiry screen, you can move to this screen. It shows detailed information on Chart/Graph Data.

Related codes

N/A

Screen and execution manual

On the Chart/Graph Data detail inquiry screen, you can carry out Chart/Graph Data modification, Chart/Graph Data deletion and Chart/Graph Data list inquiry.



|  |  |  |  |
| --- | --- | --- | --- |
| Action | URL | Controller method | QueryID |
| Update | /mbl/com/mcg/goC hartGraphUpdt.mdo | goC hartGraphUpdt |  |
| Delete | /mbl/com/mcg/deleteC hartGraph.mdo | deleteC hartGraph | “C hartGraphDAO.deleteC hartGraph” |
| List | /mbl/com/mcg/selectC hartGraphList.mdo | selectC hartGraphList | “C hartGraphDAO.selectC hartGraphList” |

Update: click the Update button to move to the Chart/Graph Data modification where you can modify Chart/Graph Data.

Delete: click the Delete button to delete data after viewing the message to determine whether to delete.

List: moves to Chart/Graph Data list inquiry screen.

Chart/Graph Data Registration

Business rules

- The red \* means the required items..

- When stored, MCG\_ID column uses “egovframework.rte.fdl.idgnr.impl.EgovTableIdGnrService”.

Primary Key => MCG\_ID : serial number automatically generated.

<bean name="egovChartGraphIdGnrService"

class="egovframework.rte.fdl.idgnr.impl.EgovTableIdGnrService"

destroy-method="destroy">

<property name="dataSource" ref="dataSource" />

<property name="blockSize"

<property name="table"

<property name="tableName"

</bean>

Related code

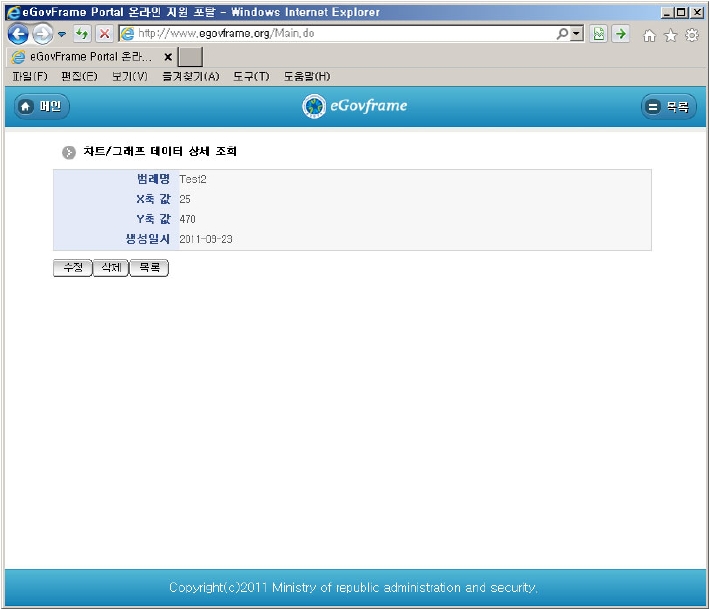
N/A

Screen and execution manual

value="10"/>

value="COMTECOPSEQ"/>

value="MCG\_ID"/>



Action URL

Controller method

QueryID

Register

/mbl/com/mcg/insertC hartGraph.mdo

insertC hartGraph

“C hartGraphDAO.insertC hartGraph”

List

/mbl/com/mcg/selectMobileC hartGraphList.mdo selectMobileC hartGraphList “C hartGraphDAO.selectC hartGraphList”

Store the basic information on Chart/Graph Data.

Register: store the entered Chart/Graph Data.

List: moves to Chart/Graph Data list inquiry screen.

Chart/Graph Data Modification

Business rules

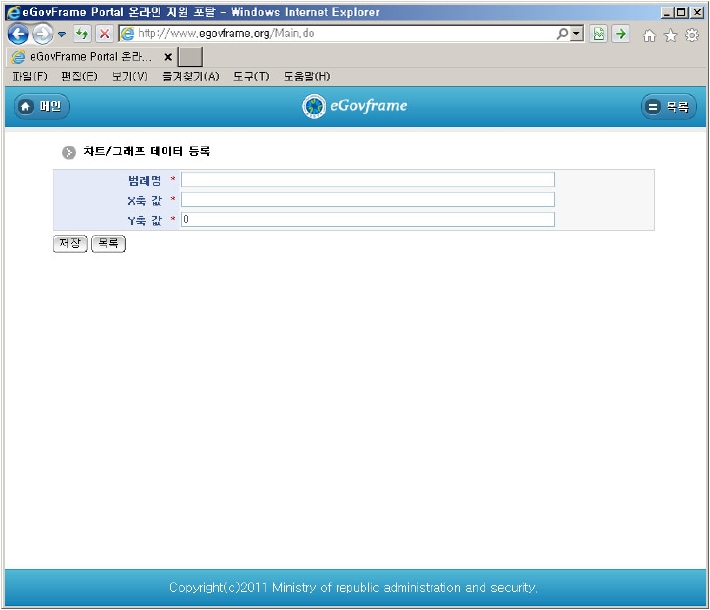
- The red \* means the required items.

Related codes

N/A

Screen and execution manual

Store the entered Chart/Graph Data.



|  |  |  |  |
| --- | --- | --- | --- |
| Action | URL | Controller method | QueryID |
| Update | /mbl/com/mcg/updateC hartGraph.mdo | updateC hartGraph | “C hartGraphDAO.updateC hartGraph” |
| List | /mbl/com/mcg/selectC hartGraphList.mdo | selectC hartGraphList | “C hartGraphDAO.selectC hartGraphList” |

Update: store the modified Chart/Graph Data.

List: moves to Chart/Graph Data list inquiry screen.

References

Refer to the execution environment: ID Generation Service

Distribution and test: Mobile Common Component System and distribution package plan

Related database structure and schema: Related database structure and schema

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