Cooperation – Mobile Device Identification

Summary

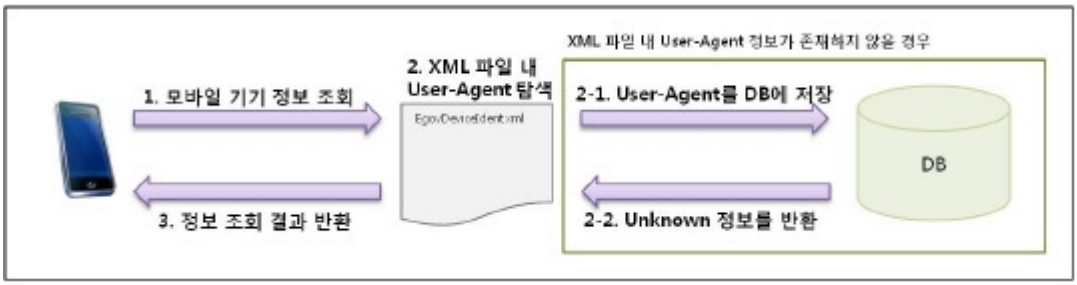
Identification of mobile devices provides the functions to check operation system, type of browsers and versions by comparing user-agent of the mobile device.

The user-agent refers to the user-agent field data of the HTTP Protocol Header containing the information of the browser. The user-agent displays different values in each operation system and browser. The user can et the information on the operation system and the browser of the currently connected devices.

*Function Flow

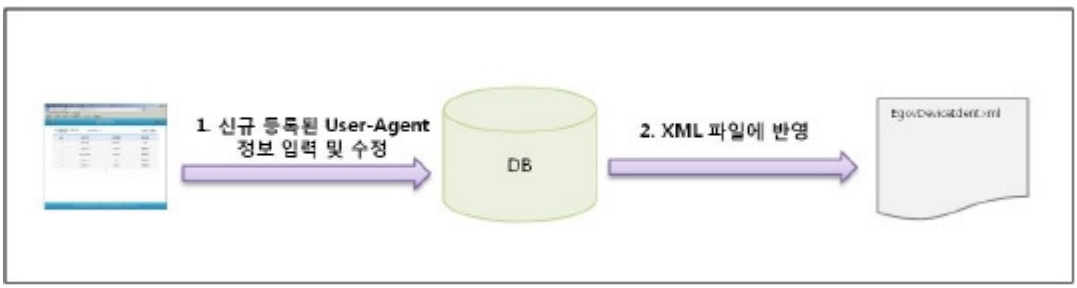
*Device Identification Flow

Mobile device information inquiry for users



When the user inquires device information through the mobile device, the server primarily searches the user-agent value from the "EgovDeviceIdent.xml" file and provides information. When there is no information in the XML file, the user-agent value is registered on the DB and provides unknown information.

Mobile device information management for managers



The manager can input newly registered user-agent information through the mobile device information management page. When the mobile device information is input and updated, the update is reflected on the "EgovDeviceIdent.xml" file.

The development and testing of the mobile screen of this component is completed. It is also noted in development since the supports on HTML5 and CSS3 vary between the PC browser and mobile browser in the same brand.

The tested device and browsers are GalaxyS2, GalaxyS, iPad2, iPhone4, GalaxyTab1 and the web browsers, Firefox, Safari, Opera Mobile.

The test results are as following.

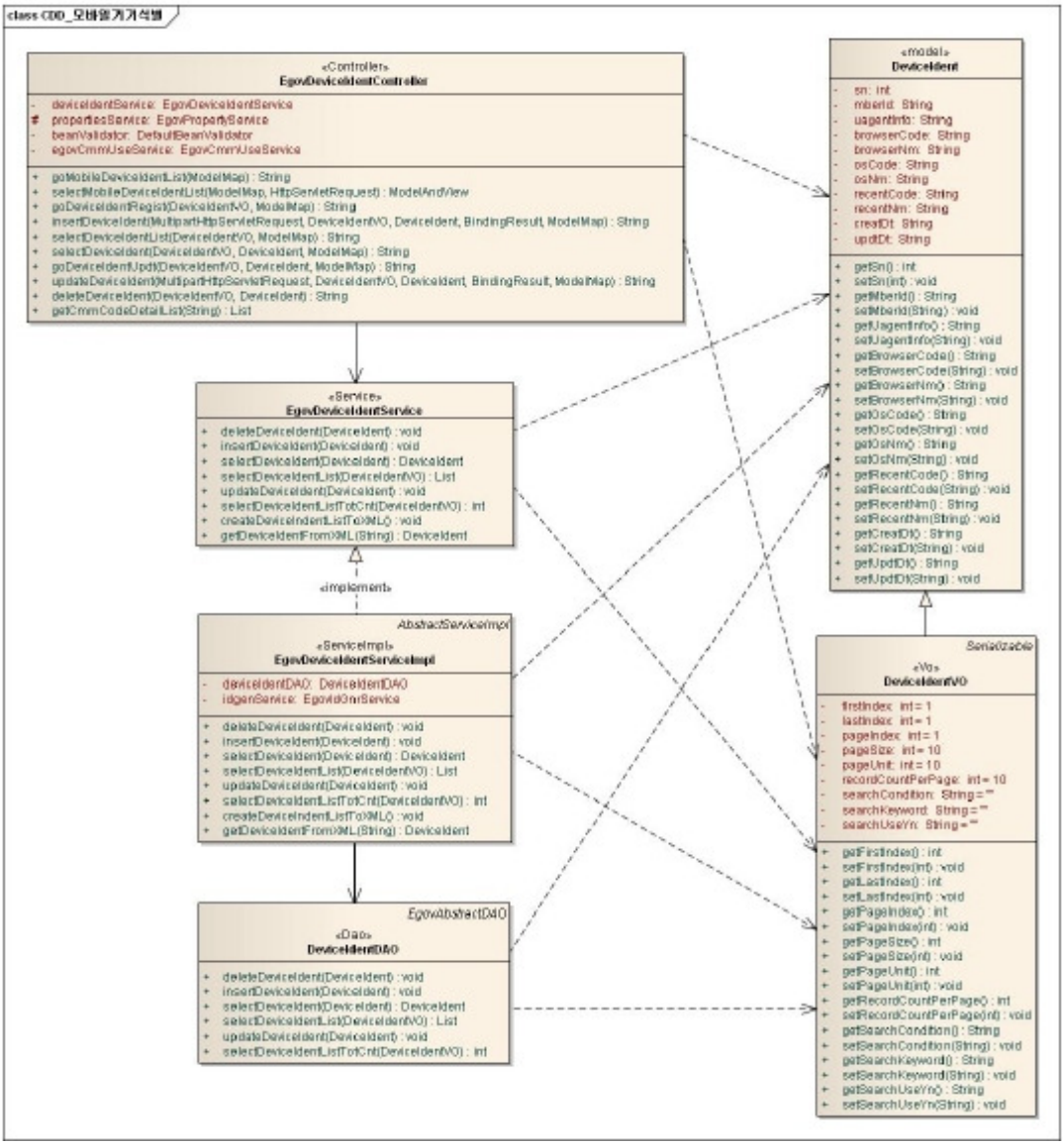
Android
The operation of HTML5, CSS3 and components of the Firefox(6.xx) and opera mobile was stable in android OS 2.3 (gengerbread).
However, in the lower version browsers, android 2.1, 2.2, the operation of components was unstable and UI realization was not smooth due to insufficient HTML5 and CSS3 supports.

For Opera Mobile, it caused problems in colors and event processing in UI. Therefore, it was excluded from the subject. Galaxy, GalxyS2 and GalaxyTab1 were chosen as test mobile devices.
iOS
The iOS is one of three supported browsers and was tested in versions 4.2 and 4.3. The support for HTML5 and CSS3 were relatively smooth.
iPhone4 and iPad2 were chosen as test mobile devices.

Description

The mobile device identification is composed of the management function, mobile device information list inquiry, detailed inquiry, register, update and delete, as well as the mobile information inquiry. (Refer to Related Function)

Class Diagram



Related sources

Type	Target source names	Note
C ontroller	egovframework.mbl.com.mdi.web.EgovDeviceIdentC ontroller.java	Mobile device identification C ontroller C lass
Service	egovframework.mbl.com.mdi.service.EgovDeviceIdentService.java	Mobile device identification Service C lass
ServiceImpl	egovframework.mbl.com.mdi.service.impl.EgovDeviceIdentServiceImpl.java	Mobile device identificationServiceImpl C lass
Model	egovframework.mbl.com.mdi.service.DeviceIdent.java	Mobile device identification Model C lass
VO	egovframework.mbl.com.mdi.service.DeviceIdentVO.java	Mobile device identification VO C lass
DAO	egovframework.mbl.com.mdi.service.impl.DeviceIdentDAO.java	Mobile device identification Dao C lass
JSP	/WEB-INF/jsp/egovframework/mbl/com/mdi/EgovDeviceIdentList.jsp	Mobile device information list inquiry page
JSP	/WEB-INF/jsp/egovframework/mbl/com/mdi/EgovDeviceIdentRegist.jsp	Mobile device information registration page
JSP	/WEB-INF/jsp/egovframework/mbl/com/mdi/EgovDeviceIdentUpdt.jsp	Mobile device information modification page
JSP	/WEB-INF/jsp/egovframework/mbl/com/mdi/EgovDeviceIdentDetail.jsp	Mobile device information detail inquiry page
JSP	/WEB-INF/jsp/egovframework/mbl/com/mdi/EgovMobileDeviceIdentList.jsp	Mobile device information inquiry page
QUERY XML	resources/egovframework/sqlmap/mbl/com/mdi/EgovDeviceIdent_SQL_XXX	Mobile device identification QUERY XML
Validator Rule XML	resources/egovframework/validator/validator-rules.xml	XML that defines Validator Rule
Validator XML	resources/egovframework/validator/mbl/com/mdi/EgovDeviceIdent.xml	Mobile device identification Validator XML
Message properties	resources/egovframework/message/message-common_ko_KR.properties	Mobile device identification Message properties
Idgen XML	resources/egovframework/spring/com/context-idgen-mobile.xml	Mobile device information Id generationIdgen XML

ID Generation

In order to use ID Generation Service, add MDI_ID (mobile device information ID) toCOMTECOPSEQ, the sequence storing page.

Related Tables

Table name	Table name (English)	Note
Mobile device	C OMTNDEVIC E	Manage mobile device information

Login / membership management / permission management

Mobile device identification requires the administrator authentication inMobile deviceinformation inquiry,Mobile deviceinformation 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 change 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
User	/mbl/com/mdi/goMobileDeviceIdent.mdo	Mobile device information inquiry screen
Administrator	/mbl/com/mpa/selectDeviceIdentList.mdo	Mobile device information list inquiry screen
Administrator	/mbl/com/mpa/selectDeviceIdent.mdo	Mobile device information detail inquiry screen
Administrator	/mbl/com/mpa/goDeviceIdentRegist.mdo	Mobile device information registration screen
Administrator	/mbl/com/mpa/insertDeviceIdent.mdo	Mobile device information registration
Administrator	/mbl/com/mpa/goDeviceIdentUpdt.mdo	Mobile device information modification screen
Administrator	/mbl/com/mpa/updateDeviceIdent.mdo	Mobile device information modification
Administrator	/mbl/com/mpa/deleteDeviceIdent.mdo	Mobile device information deletion

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 MobileOK 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.

Environmental settings

The followings are required items and the environment settings to utilize Mobile device identificationfunctions.

Property file setup

mdi.properties

```
#-------------------------------------------------------------------------
#
#    mdi.properties :                Config file that shows mobile device information
#
#-------------------------------------------------------------------------
#    1.    key = value structure
#    2.    The key cannot include space. The value can include space
#    3.    Korean is not allowed for key,        but allows for value.
#    4.    To create a new line, put '\' to the end of the line(to use        '\' letter, use '\\'.)
#    5.    In Windows, use   '\\' or '/' as the directory symbol (do not use '\' )
#    6.    In Unix, use   '/' as the directory symbol
#    7.    For comments     use #.
#    8.    If there is space after a value, an error may occurs when referenced in the sublets, use trim() or set the property value without space.
        #-------------------------------------------------------------------------

        # Mobile device information XML file
        deviceIdentXMLPath = c:/EgovDeviceIdent.xml
```

In the above, you have to set #DeviceIdentXMLPath.This designates the path of the XML that contains mobile device information.

EgovDeviceIdent.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<DeviceIdents>
  <DeviceIdent>
    <UserAgent>Mozilla/5.0 (iPhone; U; CPU iPhone OS 4_2_1 like Mac OS X; ko-kr) AppleWebKit/533.17.9 (KHTML, like Gecko) Version/5.0.2 Mobile/8C148 Safari/6533.18.5</UserAgent>
    <Browser>Safari 5.0.2</Browser>
    <OS>iPhone</OS>
  </DeviceIdent>
  <DeviceIdent>
    <UserAgent>Mozilla/5.0 (Android; Linux armv7l; rv:5.0) Gecko/20110615 Firefox/5.0 Fennec/5.0</UserAgent>
    <Browser>Firefox 5.0</Browser>
    <OS>Android</OS>
  </DeviceIdent>
  <DeviceIdent>
    <UserAgent>Opera/9.80 (Android 2.3.3; Linux; Opera Mobi/ADR-1107051709; U; ko) Presto/2.8.149 Version/11.10</UserAgent>
    <Browser>Opera 9.80</Browser>
    <OS>Android</OS>
  </DeviceIdent>
  <DeviceIdent>
    <UserAgent>Mozilla/5.0 (Linux; U; Android 2.3.3; ko-kr; Build/GINGERBREAD) AppleWebKit/533.1 (KHTML, like Gecko) Version/4.0 Mobile Safari/533.1</UserAgent>
    <Browser>Android 2.3.3</Browser>
    <OS>Android</OS>
  </DeviceIdent>
</DeviceIdents>
```

The above file is the xml that contains browser and OS information per user agent. A user, when connecting usingMobile device identification, can get browser and OS information. This file can be edited from the administrator's page.

Related functions

Mobile device identification is largely composed of Mobile deviceinformation inquiry for users, Mobile deviceinformation list inquiry for administrators,Mobile deviceinformation detail inquiry,Mobile deviceinformation registration,Mobile deviceinformation modification andMobile deviceinformation deletion.

Mobile deviceinformation inquiry

Business rules

You can retrieve the identified Mobile deviceinformation.

Related codes

N/A

Screen and execution manual

Action	URL	Controller method	QueryID
device information inquiry	/mbl/com/mdi/selectMobileDeviceIdent	selectMobileDeviceIdentList	"DeviceIdentDAO.selectDeviceIdentList"

Mobile device identificationinformationlist inquiry

Business rules

You can use the inquiry conditions to retrieve lists. You can click the Register button to move to Mobile device identificationinformationregistration screen to registerMobile device identificationinformation.

Related codes

N/A

N/A

Screen and execution manual

Action	URL	Controller method	QueryID
Inquiry	/mbl/com/mdi/selectDeviceIdentList.mdo	selectDeviceIdentList	"DeviceIdentDAO.selectDeviceIdentList"
	/mbl/com/mdi/selectDeviceIdentList.mdo	selectDeviceIdentListTotCnt	"DeviceIdentDAO.selectDeviceIdentListTotCnt"
Register	/mbl/com/mdi/goDeviceIdentRegist.mdo	goDeviceIdentRegist	
Click list	/mbl/com/mdi/selectDeviceIdent.mdo	selectDeviceIdent	"DeviceIdentDAO.selectDeviceIdent"

10 Mobile device identificationinformationlists are retrieved per page and paging is carried out on 10 page basis.The search conditions are browser, OS and registration status. To change the search range per page, modify pageUnit and pageSize in context-properties.xml (This setting have an influence on the entire common service functions.).

Inquiry:to retrieve Mobile device identificationinformation, select search conditions in the top, enter a key word and click the Inquiry button.
Register:to register Mobile device identificationinformation, use the Register button in the top to move to Mobile deviceidentificationinformation registration screen.
Click list: moves toMobile deviceidentification informationdetail inquiryscreen.

Mobile device identificationinformationdetail inquiry

Business rules

By clicking a list on Mobile device identificationinformationlist inquiry, you can move to this screen, which shows details on Mobile device identificationinformation.

Related codes

N/A

Screen and execution manual

Action	URL	Controller method	QueryID
Modify	/mbl/com/mdi/goDeviceIdentUpdt.mdo	goDeviceIdentUpdt	
Delete	/mbl/com/mdi/deleteDeviceIdent.mdo"	deleteDeviceIdent	"DeviceIdentDAO.deleteDeviceIdent"
List	/mbl/com/mdi/selectDeviceIdentList.mdo	selectDeviceIdentList	"DeviceIdentDAO.selectDeviceIdentList"

On Mobile device identificationinformationdetail inquiryscreen, you can carry outMobile device identificationinformationmodification,Mobile device identificationinformationdeletion andMobile device identificationinformationlist inquiry.

Modify:Click the Modify button to move to Mobile deviceidentificationinformation modificationscreen to modifyMobile device identificationinformation.
Delete:Click the Delete button to delete information after being prompted to select whether to delete.
List:Moves to Mobile deviceidentificationinformation list inquiry screen.

Mobile device identificationinformationregistration

Business rules

-The red * at the right of input entry indicates the required item.

-When stored, MDI_IDis automatically granted through “egovframework.rte.fdl.idgnr.impl.EgovTableIdGnrService”.

Primary Key => MDI_ID : a serial number is automatically granted.

```
<bean name="egovDeviceIdentGnrService"
        class="egovframework.rte.fdl.idgnr.impl.EgovTableIdGnrService"
        destroy-method="destroy">
        <property name="dataSource" ref="dataSource" />
        <property name="blockSize"              value="10"/>
        <property name="table"                  value="COMTECOPSEQ"/>
        <property                               value="MDI_ID"/>
        name="tableName"
</bean>
```

Related codes

The followings are codes and its settings used in Mobile device identification.

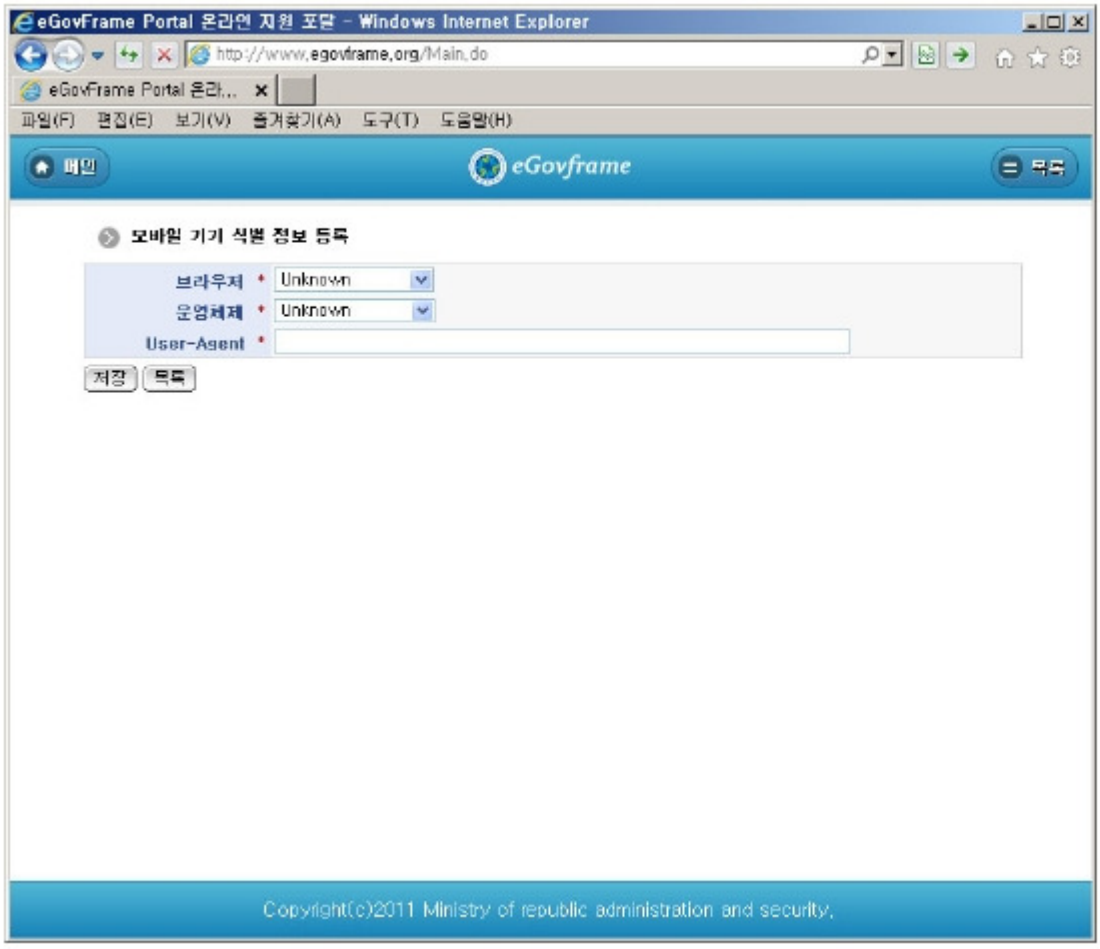
Code			Code name
C OM083	browser type	BRS001	Unknown
C OM083	browser type	BRS002	C hrome
C OM083	browser type	BRS003	C hrome 11
C OM083	browser type	BRS004	C hrome 12
C OM083	browser type	BRS005	C hrome 13
C OM083	browser type	BRS006	C hrome 14
C OM083	browser type	BRS007	Firefox
C OM083	browser type	BRS008	Firefox 3
C OM083	browser type	BRS009	Firefox 4
C OM083	browser type	BRS010	Firefox 5
C OM083	browser type	BRS011	Firefox 6
C OM083	browser type	BRS012	Firefox 7
C OM083	browser type	BRS013	IEMobile
C OM083	browser type	BRS014	IEMobile 6
C OM083	browser type	BRS015	IEMobile 7
C OM083	browser type	BRS016	IEMobile 8
C OM083	browser type	BRS017	Opera
C OM083	browser type	BRS018	Opera 4
C OM083	browser type	BRS019	Opera 5
C OM083	browser type	BRS020	Opera 6

C OM083	browser type	BRS020	Opera 6
C OM083	browser type	BRS021	Opera 7
C OM083	browser type	BRS022	Opera 8
C OM083	browser type	BRS023	Opera 9
C OM083	browser type	BRS024	Opera 10
C OM083	browser type	BRS025	Opera 11
C OM083	browser type	BRS026	Opera 12
C OM083	browser type	BRS027	Opera Mini
C OM083	browser type	BRS028	Opera Mini 3
C OM083	browser type	BRS029	Opera Mini 4
C OM083	browser type	BRS030	Opera Mini 5
C OM083	browser type	BRS031	Opera Mini 6
C OM083	browser type	BRS032	Opera Mobile
C OM083	browser type	BRS033	Opera Mobile 10
C OM083	browser type	BRS034	Opera Mobile 11
C OM083	browser type	BRS035	Safari
C OM083	browser type	BRS036	Safari 3
C OM083	browser type	BRS037	Safari 4
C OM083	browser type	BRS038	Safari 5
C OM083	browser type	BRS039	Android
C OM083	browser type	BRS040	Android 1.5
C OM083	browser type	BRS041	Android 1.6
C OM083	browser type	BRS042	Android 2.1
C OM083	browser type	BRS043	Android 2.2
C OM083	browser type	BRS044	Android 2.3
C OM083	browser type	BRS045	Android 3.0
C OM083	browser type	BRS046	Android 4.0
C OM084	OS type	OS01	Unknown
C OM084	OS type	OS02	Android
C OM084	OS type	OS03	iOS
C OM084	OS type	OS04	Symbian
C OM084	OS type	OS05	BrackBerry
C OM084	OS type	OS06	Windows Mobile
C OM084	OS type	OS07	Windows Phone

Screen and execution manual

Action	URL	Controller method	QueryID
Register	/mbl/com/mdi/insertDeviceIdent.mdo	insertDeviceIdent	"DeviceIdentDAO.insertDeviceIdent"
List	/mbl/com/mdi/selectDeviceIdentList.mdo	selectDeviceIdentList	"DeviceIdentDAO.selectDeviceIdentList"

The basic data on Mobile device identificationinformation is inputted and stored.



Register:stores the inputtedMobile device identificationinformation.

List:moves to Mobile deviceidentificationinformation list inquiry screen.

List:Moves to Mobile deviceidentificationinformation list inquiry screen.

Mobile device identificationinformationmodification

Business rules

-The red * at the right of input entry indicates the required item.

Related codes

N/A

Screen and execution manual

Action	URL	Controller method	QueryID
Modify	/mbl/com/mdi/updateDeviceIdent.mdo	updateDeviceIdent	"DeviceIdentDAO.updateDeviceIdent"
List	/mbl/com/mdi/selectDeviceIdentList.mdo	selectDeviceIdentList	"DeviceIdentDAO.selectDeviceIdentList"

The inputtedmobile device identificationinformation is stored.

Modify: stores the modified mobile device identificationinformation.
List:moves to Mobile deviceidentificationinformation list inquiry screen.

References

- Refer to execution environment: ID Generation Service
- Distribution and test: Mobile Common Component Systemanddistribution package plan
- Related database structure and schema :Related database structure and schema

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