

Camera Device API Guide Program

Outline

Camera guide program is a guide application for eGov Device API, using the mobile device API framework to be used as a tool and a reference when developing hybrid applications. It supports the inquiry of Camera related functions of mobile smart devices through JavaScript-based Camera DeviceAPI.

Also, it connects with web server applications based on eGov standard framework to send necessary information to server and inquire them, using photos taken with device's built-in camera and images saved in device's memory.

Feature

This Guide Program provides **send photographs taken with built-in camera to server, send images from the gallery to server, and receive image list from server** features.

Preconditions

Category	Description
Local Device Environments	eGovFramework Runtime Environment 3.5, Android SDKAPI 22(version 5.0 Lollipop)
Server-side Developmental Environment	Runtime Environment for eGov Standard Framework 3.5
Works in sync with Mash up Open API	N/A
Test Device	Galaxy S2
Test Platform	Android 2.3
Libraries Added	N/A

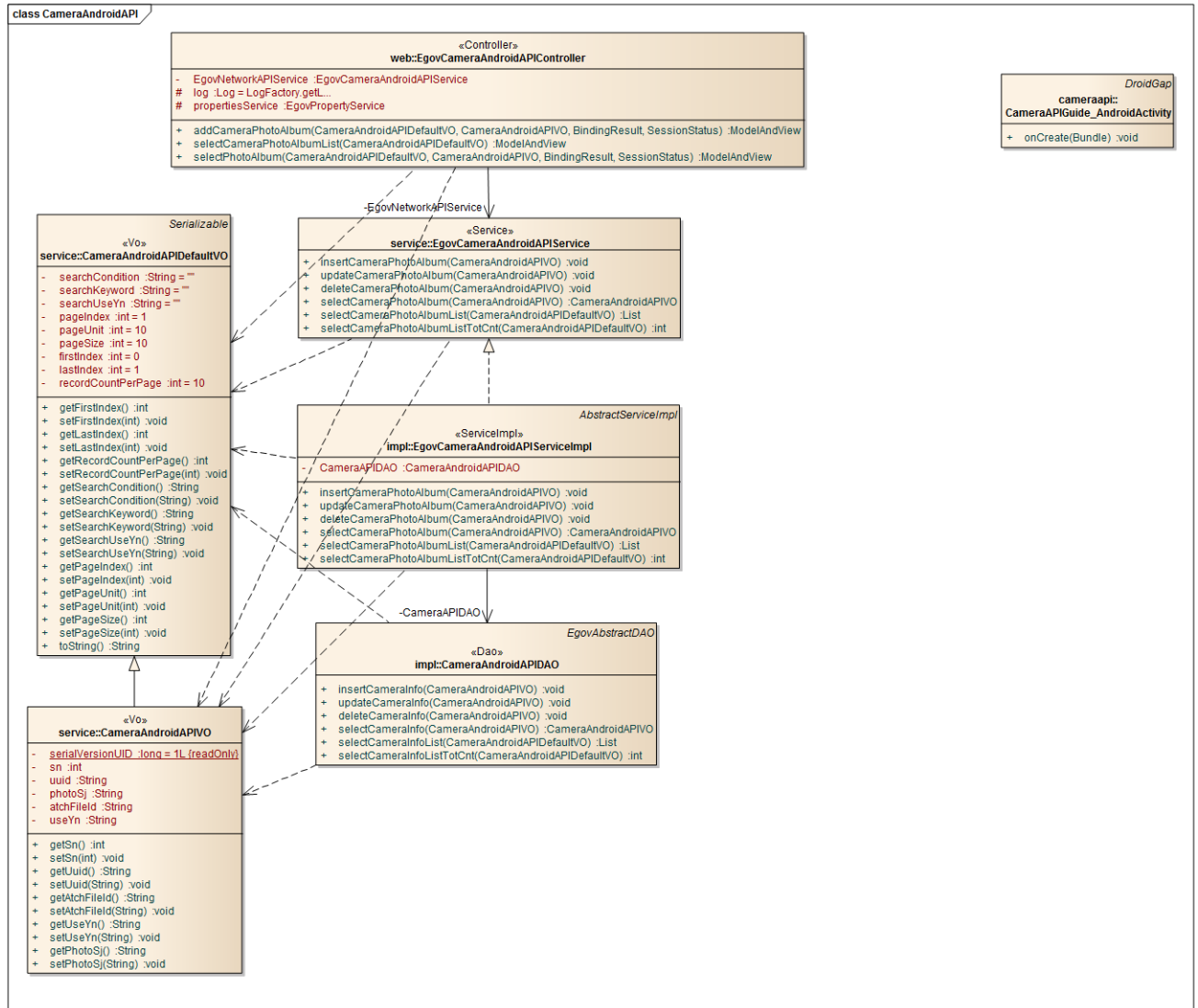
Restriction

Category	Description
Using cross domain	When using certain outside domains or its subdomains on PhoneGap, add such domains on <code><access origin="" /></code> at Res/xml/config.xml.

Description

Camera Device API Guide Program consists of **send photographs taken with built-in camera to server, send images from the gallery to server, and receive image list from server** features. (refer to related functions section)

Class Diagram



Device Application

Source

Type	Title	Remark
Activity	kr.go.egovframework.hyb.cameraapi.CameraAPIGuide_AndroidActivity	CameraAPI Guide Program Activity Class
CSS	assets/www/css/egovframework/mbl/hyb/CameraAPI.css	CameraAPI Guide Program main Cascading Style Sheets
IMAGE	assets/www/images/egovframework/mbl/hyb/	CameraAPI Guide Program main Image folder

JS	assets/www/js/egovframework/mbl/hyb/CameraAPI.js	CameraAPI Guide Program main JavaScript
JS	assets/www/js/egovframework/mbl/hyb/messages_ko.js	JavaScript for Validate Message Processing
RES	assets/www/res/	CameraAPI Guide Program main Resource folder
XML	AndroidManifest.xml	Configuration XML for Android
HTML	assets/www/CameraAPI.html	CameraAPI main page
HTML	assets/www/Intro.html	CameraAPI Intro page
HTML	assets/www/license.html	CameraAPI license page
HTML	assets/www/overview.html	CameraAPI feature description page

APIs Used

camera.getPicture

- Loads picture shot or in album
- Loads images encoded in base64 or in album

```
navigator.camera.getPicture( cameraSuccess, cameraError, [ cameraOptions ] );
    cameraOption
```

```
var cameraOption = { };
    cameraOption = {
        quality: 50,
        destinationType : Camera.DestinationType.FILE_URI,
        sourceType : Camera.PictureSourceType.CAMERA,
        targetWidth: 200,
        targetHeight: 200
    };
```

Option	Description	Remark
quality	Defines quality (resolution) of image in percentage terms	
destinationType	Defines type of the destination value	navigator.camera.DestinationType
sourceType	Configures type of source for photo library and picture shot	navigator.camera.PictureSourceType
allowEdit	Defines editability of the pre-selected image	
encodingType	Defines encoding type	navigator.camera.EncodingType
targetWidth	Configures target width (pixel) of image Rate fixed	

targetHeight Configures target height (pixel) of image Rate fixed

mediaType Configures type of media when pictureSourceType is configured either for PH nagivator.camera.Media OTOLIBRARY or SAVEDPHOTOALBUM Type

correctOrientation Orientation of image for the images being loaded

saveToPhotoAlbum Saving image for the storage in the device

FileTransfer [upload]

- File transfer object that enables file upload to server.

```
var options = new FileUploadOptions();
options.fileKey="file";
options.fileName=fileURI.substr(fileURI.lastIndexOf('/')+1);
options.mimeType="text/plain";
```

```
var params = new Object();
params.value1 = "test";
params.value2 = "param";
```

```
options.params = params;
```

```
var ft = new FileTransfer();
ft.upload(fileURI, "http://some.server.com/upload.php", transferSuccess, transferFail, options);
FileUploadOptions
```

- Upload options object that defines transfer parameters for file uploads

Option	Description	Remark
fileKey	Name of the file to be uploaded	Default is "file."
fileName	Name of the file to be saved on server	Default is "image.jpg."
mimeType	Sets mimeType when uploading data.	Default is "image/jpeg."
params	Additional parameters to be sent to server.	
chunkedMode	Whether or not to use large streaming.	Default is "true."

Server Application

Source

Type	Title	Remark
Controller	egovframework.hyb.add.cmr.web.EgovCameraAndroidAPIControlle r.java	CameraAPI Guide Program Controller Class

Service	egovframework.hyb.add.cmr.service.EgovCameraAndroidAPIService.java	CameraAPI Guide Program Service Class
ServiceImpl	egovframework.hyb.add.cmr.service.impl.EgovCameraAndroidAPIServiceImpl.java	CameraAPI Guide Program ServiceImpl Class
VO	egovframework.hyb.add.cmr.service.CameraAndroidAPIDefaultVO.java	CameraAPI Guide Program VO Class
VO	egovframework.hyb.add.cmr.service.CameraAndroidAPIFileVO.java	CameraAPI Guide Program VO Class
VO	egovframework.hyb.add.cmr.service.CameraAndroidAPIVO.java	CameraAPI Guide Program VO Class
VO	egovframework.hyb.add.cmr.service.CameraAndroidAPIXmlVO.java	CameraAPI Guide Program XML related VO Class
DAO	egovframework.hyb.add.cmr.service.impl.CameraAndroidAPIDAO.java	CameraAPI Guide Program Dao Class
Util	egovframework.hyb.add.cmr.service.impl.EgovCameraAndroidFileMngUtil.java	CameraAPI Guide Program Util Class
QUERY XML	resources/egovframework/sqlmap/hyb/add/cmr/EgovCameraAndroidAPIGuide_XXX_mysql.xml	CameraAPI Guide Program QUERY XML
Idgen XML	resources/egovframework/spring/com/context-idgen.xml	CameraAPI Guide Program ID generation Idgen XML

ID Generation

- In order to use ID Generation Service, FILE (FILE information ID) entry must be added to COMTECOPSEQ, a sequence saving table.

Related Tables

Title	Table	Remark
Camera	CAMERA	Manage image information
File details	FILE_DETAIL_INFO	Manage file's detailed information

Table Definition

- CAMERA

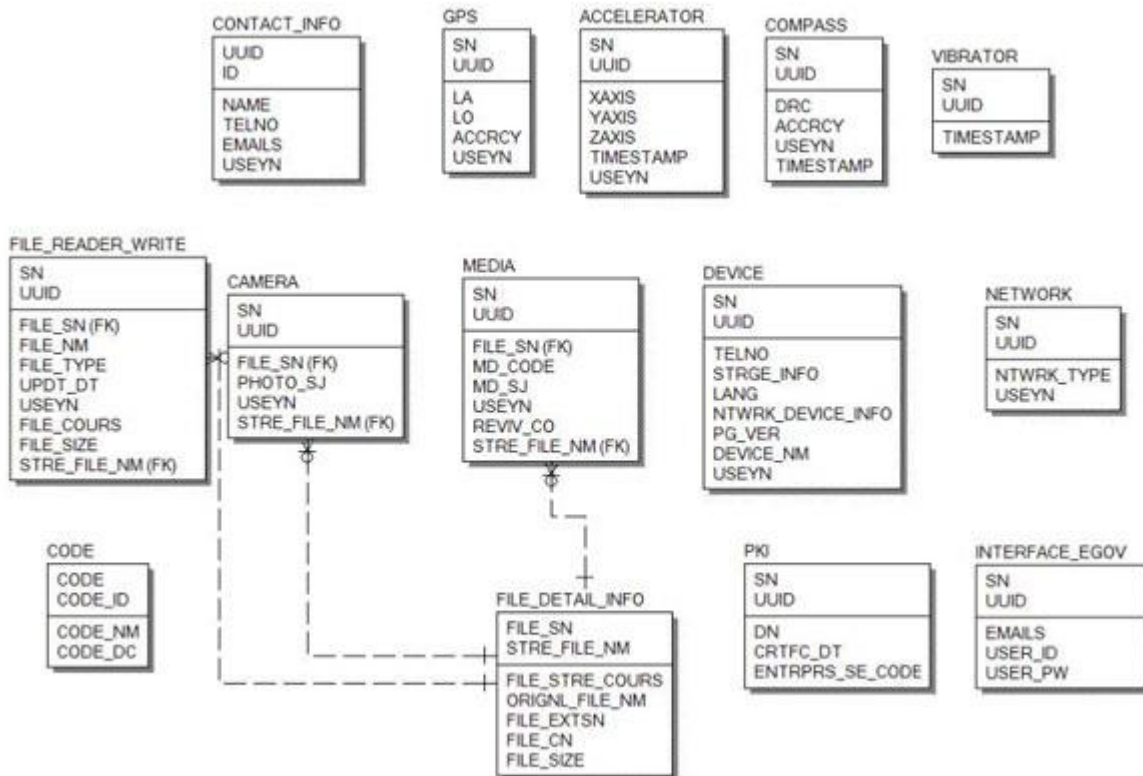
No	Column ID	Title of Column	Type	Length	NULL
1	SN	Serial No.	NUMERIC	6	NotNull
2	UUID	UUID	VARCHAR	50	NotNull
3	PHOTO_SJ	Title of photo	VARCHAR	255	Null
4	FILE_SN	File Serial Number	NUMERIC	20	NotNull

5 USEYN Activation CHAR 1 Null

- FILE_DETAIL_INFO

No	Column ID	Title of Column	Type	Length	NULL
1	FILE_SN	File Serial Number	NUMERIC	20	NotNull
2	FILE_STRE_COURS	File directory	VARCHAR	2000	Null
3	STRE_FILE_NM	Stored file name	VARCHAR	255	Null
4	ORIGNL_FILE_NM	Original file name	VARCHAR	255	Null
5	FILE_EXTSN	File extension	VARCHAR	20	Null
6	FILE_CN	File contents	BLOB		Null
7	FILE_SIZE	File size	NUMERIC	8	Null

ERD



Properties

Necessary sections and settings for using Camera related features of mobile device, provided by Camera Device API Guide Program, are as follows.

Device Application

res/xml/config.xml

```
<pluginname="Camera" value="org.apache.cordova.CameraLauncher"/>
```

```
<pluginname="File" value="org.apache.cordova.FileUtils"/>
```

```
<pluginname="FileTransfer" value="org.apache.cordova.FileTransfer"/>  
res/values/serverinfo.xml
```

```
<string
```

```
name="SERVER_URL">http://192.168.100.222:8080/DeviceAPIGuideTotal_Web_V1.7.1</string>
```

```
<!-- Server Directory for eGov Interface Device API Class -->
```

```
<?xmlversion="1.0" encoding="utf-8"?>
```

```
<resources>
```

```
  <stringname="SERVER_URL">Server_URL</string>
```

```
</resources>
```

AndroidManifest.xml

```
<uses-permissionandroid:name="android.permission.WRITE_EXTERNAL_STORAGE"/>
```

Server Application

context-properties.xml

- Upload directory

```
<entrykey="fileStorePath" value="File_Save_Path"/>
```

resource/egovframework/sqlmap/sql-map-config_[DB NAME].xml

```
<sqlMapresource="egovframework/sqlmap/hyb/add/cmr/EgovDeviceAndroidAPIGuide_SQL_[DB  
NAME].xml"/>
```

Functions

Camera Device API Guide Program is comprised of a function to send necessary information to server and inquire them, using photos taken with device's built-in camera and images saved in device's memory.

Send photographs taken with built-in camera to server

Business Logic

- Check the network. If the network is not Wi-Fi, function based on the user approval.
- Image title must be minimum two characters and maximum 20. (Validation Rule)
- If the titles are the same when transferring to server, determine whether or not to overwrite based on user approval.

Related Codes

Shoots photo

```
function fn_cameraPhotograph() {  
  var Camera = navigator.camera;
```

```

    var cameraOption = {
        quality: 50,
        destinationType : Camera.DestinationType.FILE_URI,
        sourceType : Camera.PictureSourceType.CAMERA,
        targetWidth: 200,
        targetHeight: 200
    };
    navigator.camera.getPicture(fn_getPhotoAlbumInfo, fn_error, cameraOption);
}

    Request for image overlap check

var params = {
    photoSj : $("#photoSj").val(),
    uuid : device.uuid
};

$.mobile.showPageLoadingMsg('a');
// depending on device performance, delay using setTimeout to ensure next code is executed after
ProgressDialog Show is completely loaded.
setTimeout(function()
    {
        fn_egov_sendto_server("/cmr/cameraPhotoAlbumCheckiOS.do",params);
    },
    500);
    Image overlap check

function fn_checkPhotoAlbum() {

    ...

    var url = "/cmr/cameraPhotoAlbumCheck.do";
    var acceptType = "xml";
    var check = false;

    var params = {
        photoSj : $("#photoSj").val()
    };

    egovHyb.post(url, acceptType, params, function(xmldata) {

    ...

        currentImageSn = $(xmldata).find("sn").text();

        if(currentImageSn != null && currentImageSn != "") {
            jConfirm("File with the same name already exists..\nEdit image?",
"Alert", "b", function(result){

                if(result) {
                    fn_updatePhotograph();
                }
            });
        } else {
            ...
        }
    }
}

```



```

    });

    return check;
}

    Send image to server

function fn_insertPhotograph() {

    $.mobile.showPageLoadingMsg();

    var options = new FileUploadOptions();
    options.fileKey = "file";
    options.fileName = new Date().format("YYYYMMDDhhmmss") + ".jpg";
    options.mimeType = "image/jpeg";

    var params = {
                                                photoSj : $("#photoSj").val(),
                                                uuid : encodeURI(device.uuid)
    };

    options.params = params;

    var ft = new FileTransfer();

    ft.upload(image, loadServer + "/cmr/photoAlbumImageUpload.do", fn_insertSuccess,
fn_error, options);
}
function fn_updatePhotograph() {

    $.mobile.showPageLoadingMsg();

    var options = new FileUploadOptions();
    options.fileKey = "file";
    options.fileName = new Date().format("YYYYMMDDhhmmss") + ".jpg";
    options.mimeType = "image/jpeg";

    var ft = new FileTransfer();

    var params = {
                                                sn : currentImageSn
    };

    options.params = params;
    ft.upload(image, loadServer + "/cmr/photoAlbumImageUpdate.do", fn_insertSuccess,
fn_error, options);
}

```

Related Screen and Implementation Manual

Action	URL	Controller method	QueryID
Image overlap check	/cmr/cameraPhotoAlbumCheck.do	selectPhotoAlbumPhotoSj	“cameraAndroidAPIDAO.selectCameraPhotoAlbumPhotoSj”

Image upload (register) /cmr/photoAlbumImageUpload.do fileUpload

“cameraAndroidAPIDAO.insertCameraPhotoAlbum”

Image upload (file register) /cmr/photoAlbumImageUpload.do fileUpload

“cameraAndroidAPIDAO.insertCameraPhotoAlbumFile”

Image upload (modify) /cmr/photoAlbumImageUpdate.do fileUpdate

“cameraAndroidAPIDAO.updateCameraPhotoAlbumFile”



Title: minimum 2 characters, maximum 20 characters rule is in effect.

Take photograph: calls camera device.

Save: conducts image overlap check on server and uploads.

Send images from the gallery to server

Business Logic

- Check the network. If the network is not Wi-Fi, function based on the user approval.

- Image title must be minimum two characters and maximum 20. (Validation Rule)
- If the titles are the same when transferring to server, determine whether or not to overwrite based on user approval.

Related Codes

Gallery

```
function fn_albumPhotograph() {
    var Camera = navigator.camera;
    var cameraOption = {
        quality: 50,
        destinationType : Camera.DestinationType.FILE_URI,
        sourceType : Camera.PictureSourceType.PHOTOLIBRARY,
        targetWidth: 200,
        targetHeight: 200
    };
    navigator.camera.getPicture(fn_getPhotoAlbumInfo, fn_error, cameraOption);
}

Request for image overlap check

var params = {
    photoSj : $("#photoSj").val(),
    uuid : device.uuid
};

$.mobile.showPageLoadingMsg('a');
// depending on device performance, delay using setTimeout to ensure next code is executed after
ProgressDialog Show is completely loaded.
setTimeout(function()
    {
        fn_egov_sendto_server("/cmr/cameraPhotoAlbumCheckiOS.do",params);
    },
    500);
Request for image overlap check

var params = {
    photoSj : $("#photoSj").val(),
    uuid : device.uuid
};

$.mobile.showPageLoadingMsg('a');
// depending on device performance, delay using setTimeout to ensure next code is executed after
ProgressDialog Show is completely loaded.
setTimeout(function()
    {
        fn_egov_sendto_server("/cmr/cameraPhotoAlbumCheckiOS.do",params);
    },
    500);
Image overlap check

function fn_checkPhotoAlbum() {

...

var url = "/cmr/cameraPhotoAlbumCheck.do";
```

```

var acceptType = "xml";
var check = false;

var params = {
    photoSj : $("#photoSj").val()
};

egovHyb.post(url, acceptType, params, function(xmldata) {
...
    currentImageSn = $(xmldata).find("sn").text();

    if(currentImageSn != null && currentImageSn != "") {
        jConfirm("File with the same name already exists..\nEdit image?",
"Alert", "b", function(result){
            if(result) {
                fn_updatePhotograph();
            }
        });
    } else {
        ...
    }
});

return check;
}

    Send image to server

function fn_insertPhotograph() {

    $.mobile.showPageLoadingMsg();

    var options = new FileUploadOptions();
    options.fileKey = "file";
    options.fileName = new Date().format("YYYYMMDDhhmmss") + ".jpg";
    options.mimeType = "image/jpeg";

    var params = {
        photoSj : $("#photoSj").val(),
        uuid : encodeURI(device.uuid)
    };

    options.params = params;

    var ft = new FileTransfer();

    ft.upload(image, loadServer + "/cmr/photoAlbumImageUpload.do", fn_insertSuccess,
fn_error, options);
}
function fn_updatePhotograph() {

    $.mobile.showPageLoadingMsg();

```

```

var options = new FileUploadOptions();
options.fileKey = "file";
options.fileName = new Date().format("YYYYMMDDhhmmss") + ".jpg";
options.mimeType = "image/jpeg";

var ft = new FileTransfer();

var params = {
                                sn : currentImageSn
                                };

options.params = params;
ft.upload(image, loadServer + "/cmr/photoAlbumImageUpdate.do", fn_insertSuccess,
fn_error, options);
}

```

Related Screen and Implementation Manual

Action	URL	Controller method	QueryID
Image overlap check	/cmr/cameraPhotoAlbumCheck.do	selectPhotoAlbumPhotoSj	"cameraAndroidAPIDAO.selectCameraPhotoAlbumPhotoSj"
Image upload (register)	/cmr/photoAlbumImageUpload.do	fileUpload	"cameraAndroidAPIDAO.insertCameraPhotoAlbum"
Image upload (file register)	/cmr/photoAlbumImageUpload.do	fileUpload	"cameraAndroidAPIDAO.insertCameraPhotoAlbumFile"
Image upload (modify)	/cmr/photoAlbumImageUpdate.do	fileUpdate	"cameraAndroidAPIDAO.updateCameraPhotoAlbumFile"



Title: minimum 2 characters, maximum 20 characters rule is in effect.

Take photograph: calls camera device.

Save: conducts image overlap check on server and uploads.

Inquire server's image list

Business Logic

- Check the network. If the network is not Wi-Fi, function based on the user approval.

Related Codes

Request server's image list

```
function fn_selectPhotoAlbumList(params) {  
  
    var url = "/cmr/cameraPhotoAlbumList.do";  
    var acceptType = "xml";
```

```

egovHyb.post(url, acceptType, params, function(xmldata) {
    console.log("DeviceAPIGuide fn_selectPhotoAlbumList request Completed");
    fn_event_checkPage(xmldata);
});
}
    Inquire details about the image

function fn_selectPhotoAlbumDetail(imageSrc) {
    var url = "/cmr/cameraPhotoAlbumDetail.do";
    var acceptType = "xml";

    var params = {
        sn : currentImageSn
    };

    egovHyb.post(url, acceptType, params, function(xmldata) {
        console.log("DeviceAPIGuide fn_selectPhotoAlbumDetail request Completed");

        fn_displayDetail(imageSrc, xmldata);
    });
}
    Delete image

function fn_deletePhotoAlbumInfo() {
    console.log("fn_deletePhotoAlbumInfo Start.");

    var url = "/cmr/deleteCameraPhotoAlbum.do";
    var acceptType = "xml";

    var params = {
        sn : currentImageSn
    };

    egovHyb.post(url, acceptType, params, function(xmldata) {
        console.log("DeviceAPIGuide fn_deletePhotoAlbumInfo request Completed");

        jAlert("Deleted", "Alert", "b", function(){
            $.mobile.changePage($("#listPhotoAlbum"), {changeHash:false});
        });
    });
}

```

Related Screen and Implementation Manual

Action	URL	Controller method	QueryID
Inquire image t	lis /cmr/cameraPhotoAlbumLis t.do	selectCameraPhotoAlbu mList	“cameraAndroidAPIDAO.selectCameraPhotoAlb umInfoList”

Inquire image tails	/cmr/cameraPhotoAlbumDetail.do	selectPhotoAlbum	"cameraAndroidAPIDAO.selectCameraPhotoAlbumInfo"
Delete image	/cmr/deleteCameraPhotoAlbum.do	deleteCameraPhotoAlbum	"cameraAndroidAPIDAO.deleteCameraPhotoAlbumInfo"
Delete image file	/cmr/deleteCameraPhotoAlbumFile.do	deleteCameraPhotoAlbumFile	"cameraAndroidAPIDAO.deleteCameraPhotoAlbumInfoFile"
Inquire image	/cmr/getImage.do	getImageInfo	"cameraAndroidAPIDAO.selectImageFileInfo"



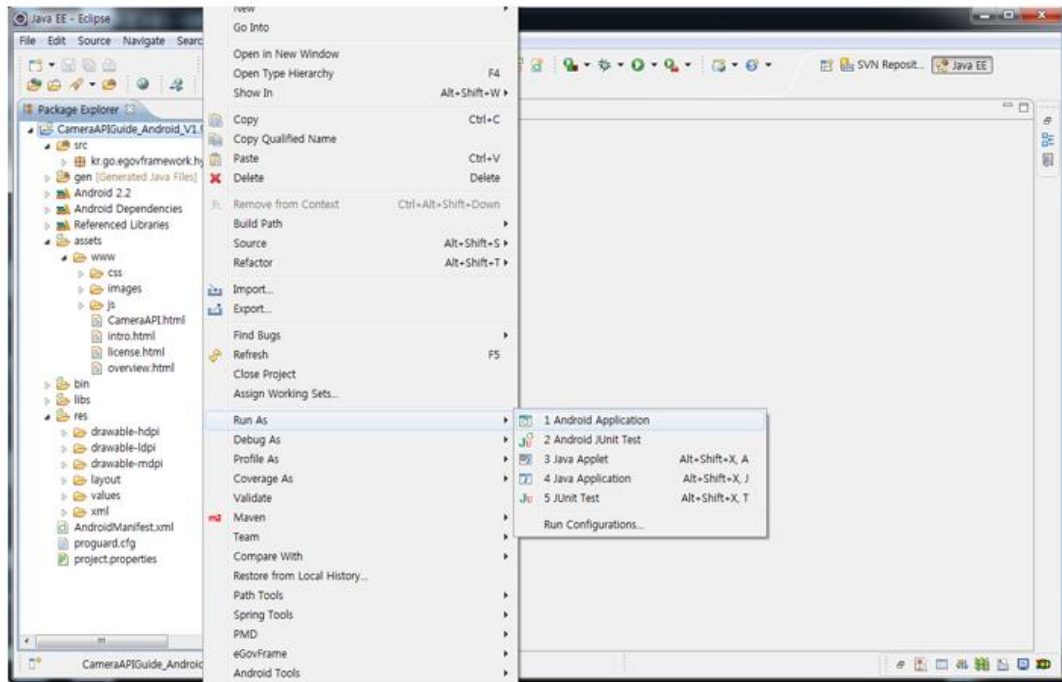
- List: requests details of the selected list.
- View more: loads 10 more image lists on server.
- List: calls server's image list page.
- Delete: deletes selected image.

Compiling, debugging, distributing

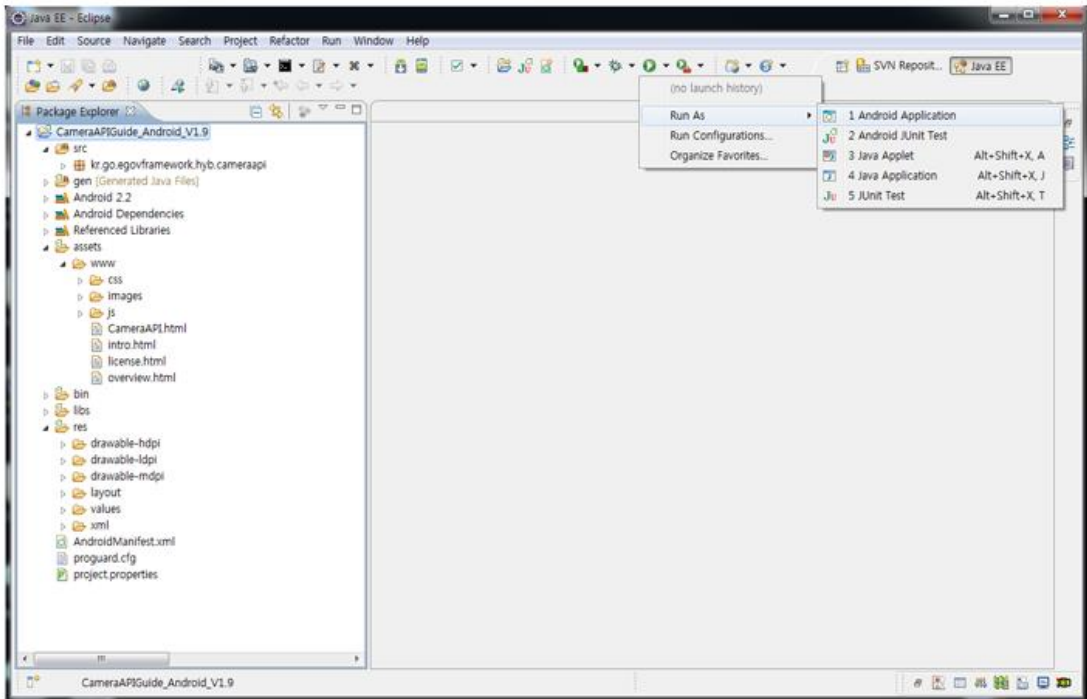
Compiling

How to CameraAPI Device Application

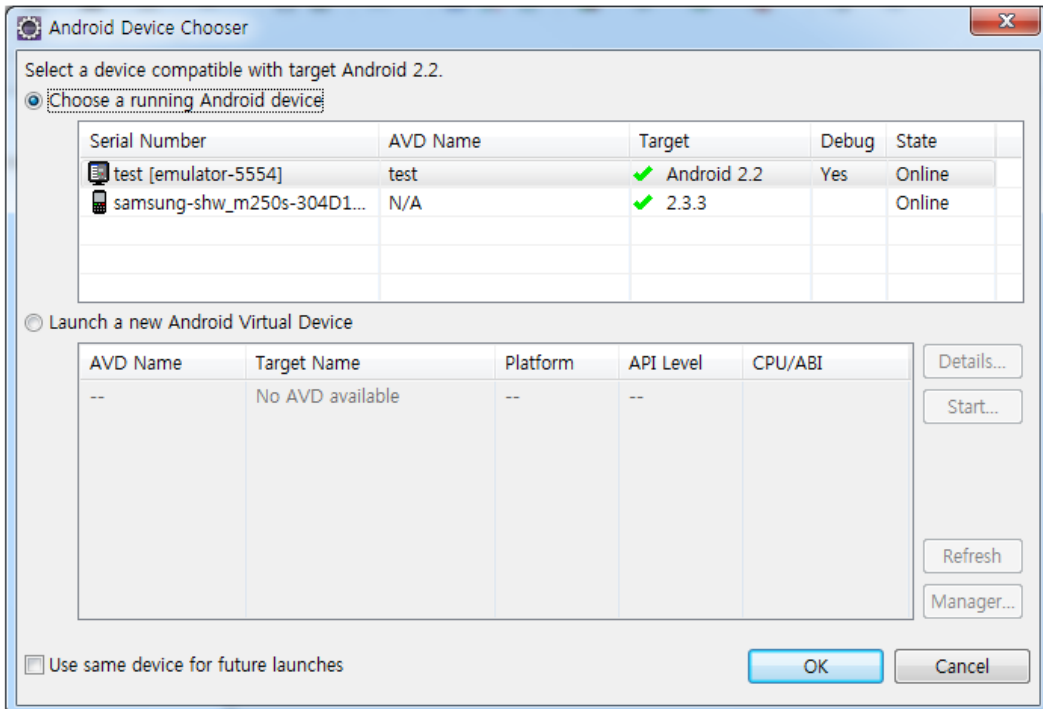
- Choose project > Right-click > Run As > Android Application



- Top menu > Run As > Android Application



- Select target to run > emulator, Device(debug mode)



- Program display on the emulator



- Program display on the device



Camera API 디바이스
가이드 프로그램 

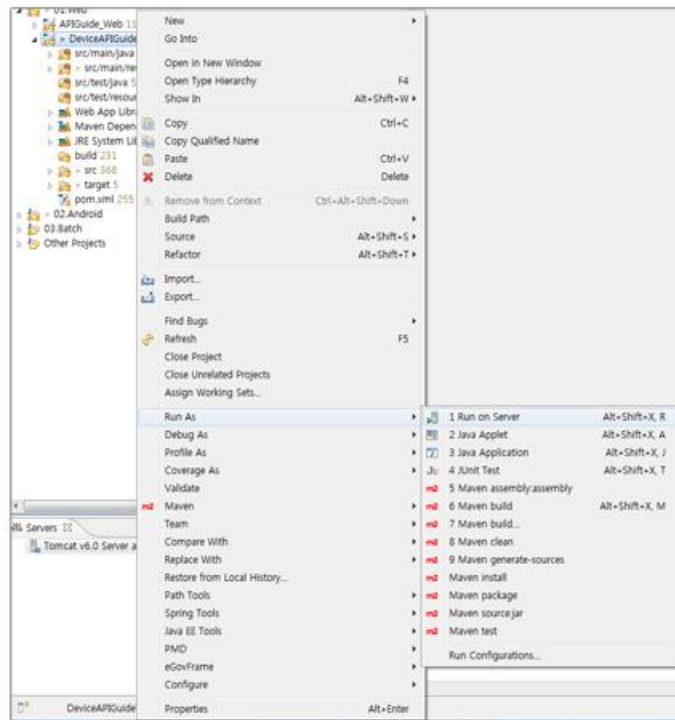


행정안전부



How to CameraAPI Server Applicaton

- Right-click on the project and click on Run As>Run On Server in order to run the CameraAPI server-side Guide Program.



- When the build is successfully completed, a message reading 'Server Startup in xxx ms' will display on the console window on the Eclipse.

```

2012-09-14 09:15:49,759 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Returning cached instance of singleton bean 'org.springframework.web.servlet.mvc.annotation.AnnotationMethodMapping'
2012-09-14 09:15:49,767 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Returning cached instance of singleton bean 'org.springframework.web.servlet.mvc.annotation.AnnotationMethodMapping'
2012-09-14 09:15:49,768 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Creating instance of bean 'org.springframework.web.servlet.mvc.annotation.AnnotationMethodMapping'
2012-09-14 09:15:49,771 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Finished creating instance of bean 'org.springframework.web.servlet.mvc.annotation.AnnotationMethodMapping'
2012-09-14 09:15:49,771 DEBUG [org.springframework.web.servlet.DispatcherServlet] Unable to locate RequestToViewNameTranslator with name 'viewNameTranslator': using default
2012-09-14 09:15:49,771 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Returning cached instance of singleton bean 'org.springframework.web.servlet.mvc.annotation.AnnotationMethodMapping'
2012-09-14 09:15:49,772 DEBUG [org.springframework.web.servlet.DispatcherServlet] Returning cached instance of singleton bean 'viewResolver'
2012-09-14 09:15:49,772 DEBUG [org.springframework.web.servlet.DispatcherServlet] Published WebApplicationContext of servlet 'action' as ServletContext attribute with name [org.springframework.web.servlet.DispatcherServlet]
2012-09-14 09:15:49,772 INFO [org.springframework.web.servlet.DispatcherServlet] FrameworkServlet 'action': initialization completed in 1373 ms
2012-09-14 09:15:49,772 DEBUG [org.springframework.web.servlet.DispatcherServlet] Servlet 'action' configured successfully
2012. 9. 14 오전 9:15:49 org.apache.coyote.http11.Http11Protocol start
정보: Starting Coyote HTTP/1.1 on http-80
2012. 9. 14 오전 9:15:49 org.apache.jk.common.ChannelSocket init
정보: JK: ajp13 listening on /0.0.0.0:8009
2012. 9. 14 오전 9:15:49 org.apache.jk.server.JkMain start
정보: Jk running ID=0 time=0/30 config=null
2012. 9. 14 오전 9:15:49 org.apache.catalina.startup.Catalina start
정보: Server startup in 7209 ms
  
```

Debugging

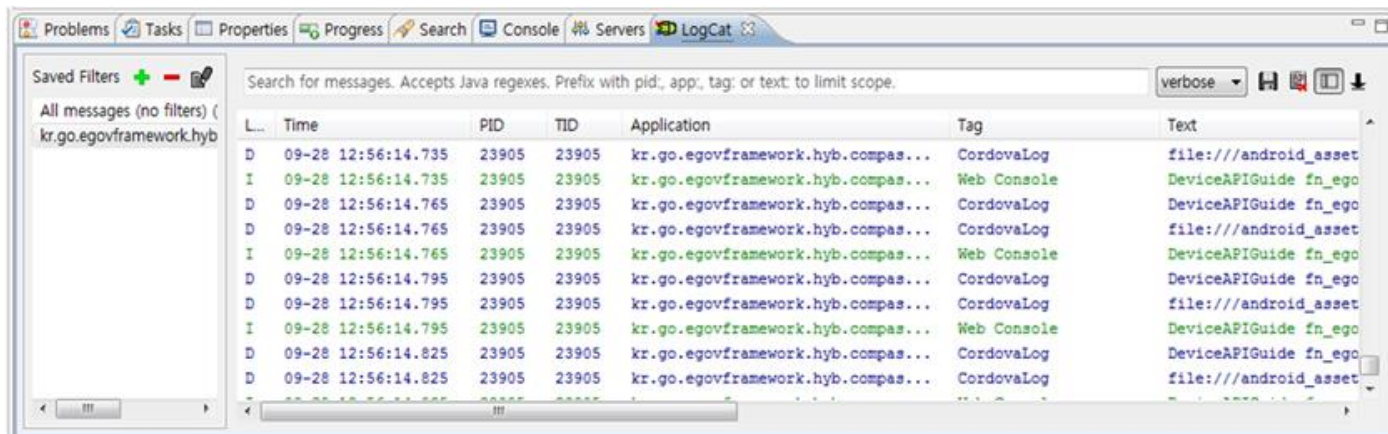
Use console.log in order to check the details on any errors on the device application, and to conduct debugging. Debug codes in console.log are available in JavaScript syntaxes that you can use in both Eclipse and Xcode.

See the following for how to code console.log:

```

function fn_egov_network_check(doCheck)
{
    console.log('DeviceAPIGuide fn_egov_network_check');
    var networkState = navigator.network.connection.type;
    ...
}
  
```

When the debugging code is executed, check out the following console message appears:



Camera device API Guide Program will output the following console information for debugging.

Debug code	Debug information
DeviceAPIGuide fn_egov_deviceConfig Success	Successfully acquired the device's server information.
DeviceAPIGuide fn_egov_getPhotoAlbumInfo Success	Successfully loaded the image in the gallery or image taken with built-in camera.
DeviceAPIGuide fn_egov_insertSuccess request Completed	Successfully uploaded image file.
DeviceAPIGuide fn_egov_selectPhotoAlbumDetail request Completed	Successfully inquired image details.
DeviceAPIGuide fn_egov_selectPhotoAlbumList request Completed	Successfully inquired photo list.
DeviceAPIGuide fn_egov_deletePhotoAlbumInfo request Completed	Successfully deleted image.
DeviceAPIGuide fn_egov_checkPhotoAlbum request Completed	Successfully conducted image title overlap check.

Distribution

Download Camera Device API Guide: [Click](#)

References

- UX/UI library : jQuery Mobile [Click](#)
- Phonegap 4.3.0 : [Click](#)