National Spatial Data Infrastructure Research Program

Development of open source processing technology for

Application of spatial information SW

GeoCMS Installation Manual

GeoCMS manual	Project classification	Land Spatial Information Research Project
	Project Name	GeoCMS

1.1. Business overview

Internationally, the importance of utilizing spatial information is increasing, but the spatial information infrastructure including open source software based on domestic is weak, and the level of practical application of related technology is still low, so it relies on foreign software.

Accordingly, we developed an open source based system for generating and managing new and user-space-based new media space information contents on the web and mobile, gained import substitution effect of foreign-based software, improved technology self-reliance, The goal is to do.

1.2. Business background and necessity

In recent years, services such as Instagram, Vine, and YouTube have emerged as a result of increasing demand for services for various new media space information collected through mobile terminals and for linking with external systems. However, this is a simple media management / service technology, Technology for combined service with information service is very limited.

To solve this problem, it is necessary to provide services for efficient management and service of new media space information that is diversified according to the development of mobile and computing technologies such as Google Glass and panoramic space image. In the case of developing / distributing system in open source form, It is possible to manage users' participation in new media space information in private.

1.3. Business Goals

The ultimate goal is to implement and provide open source spatial information content management system (GeoCMS), which will be utilized by public and private operators and put into practical use.

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1) New media space information contents authoring and publishing technology development

2) New media space information analysis and service engine technology development

3) User-Participated Web / Mobile based Geospatial Content Management System (GeoCMS) technology development

4) Development of technology for linking and utilizing public and commercial space information systems

1.4. Benefit

1.4.1. Technical expectation effect

- Overcome the dependency of specific foreign SWs and reduce SW acquisition and maintenance costs
- Enhance technology self-reliance with development of open source software for spatial information led by domestic technology, and successfully commercialize R & D results
- Quickly develop and validate high-level SWs to quickly implement products

1.4.2. Economic / Industrial Expected Effects

- Cost substitution and cheap introduction / utilization cost of public information system in the public sector
- Strengthen domestic SW industry ecosystem based on open source SW technology for spatial information
- To foster the spatial information software industry, to nurture specialized personnel for spatial information software development and to create jobs

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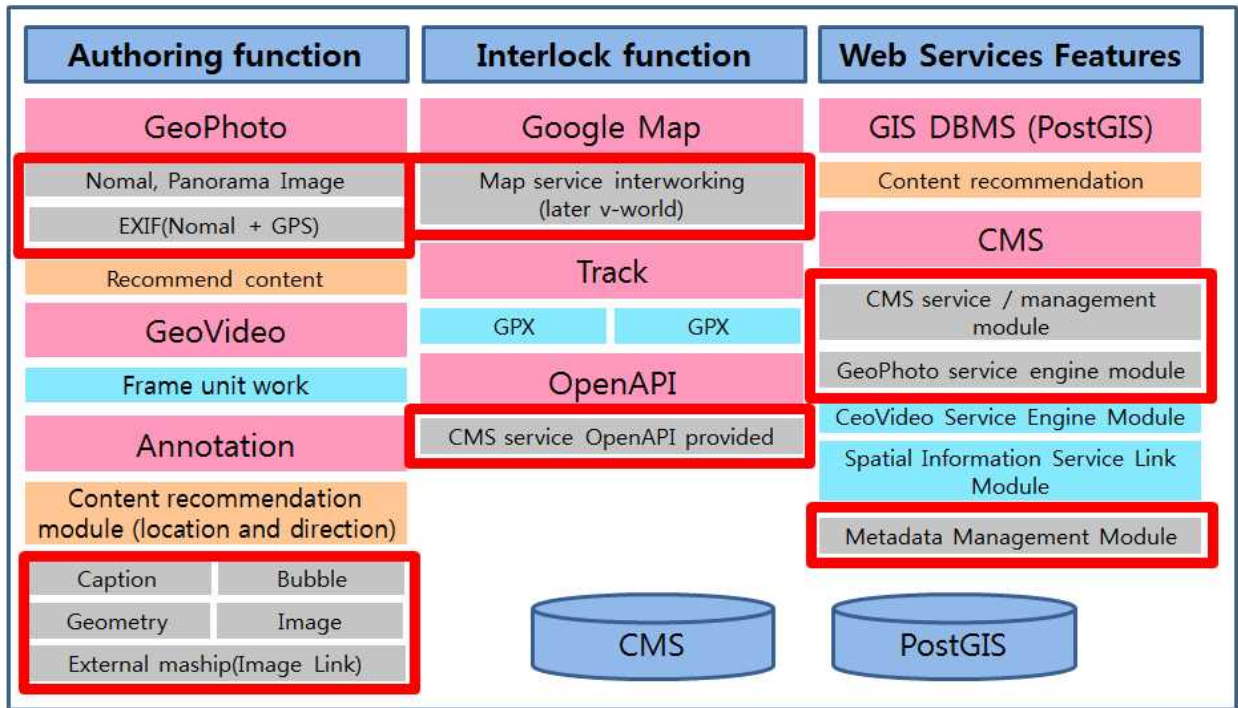| GeoCMS manual	Project classification	Land Spatial Information Research Project
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2. Development Contents

2.1. GeoCMS Operating Environment

Software Information		
operating system	server	Apache Tomcat 6.0
	Client	Chrome 44+
Uniqueness (Product activation requirements)		External map engines (such as GoogleMaps) and Open APIs (such as Google Geocoding) should be available. DB : MySQL
Hardware Information		
Other environment		2.4GHz, 4G RAM, Windows XP Professional

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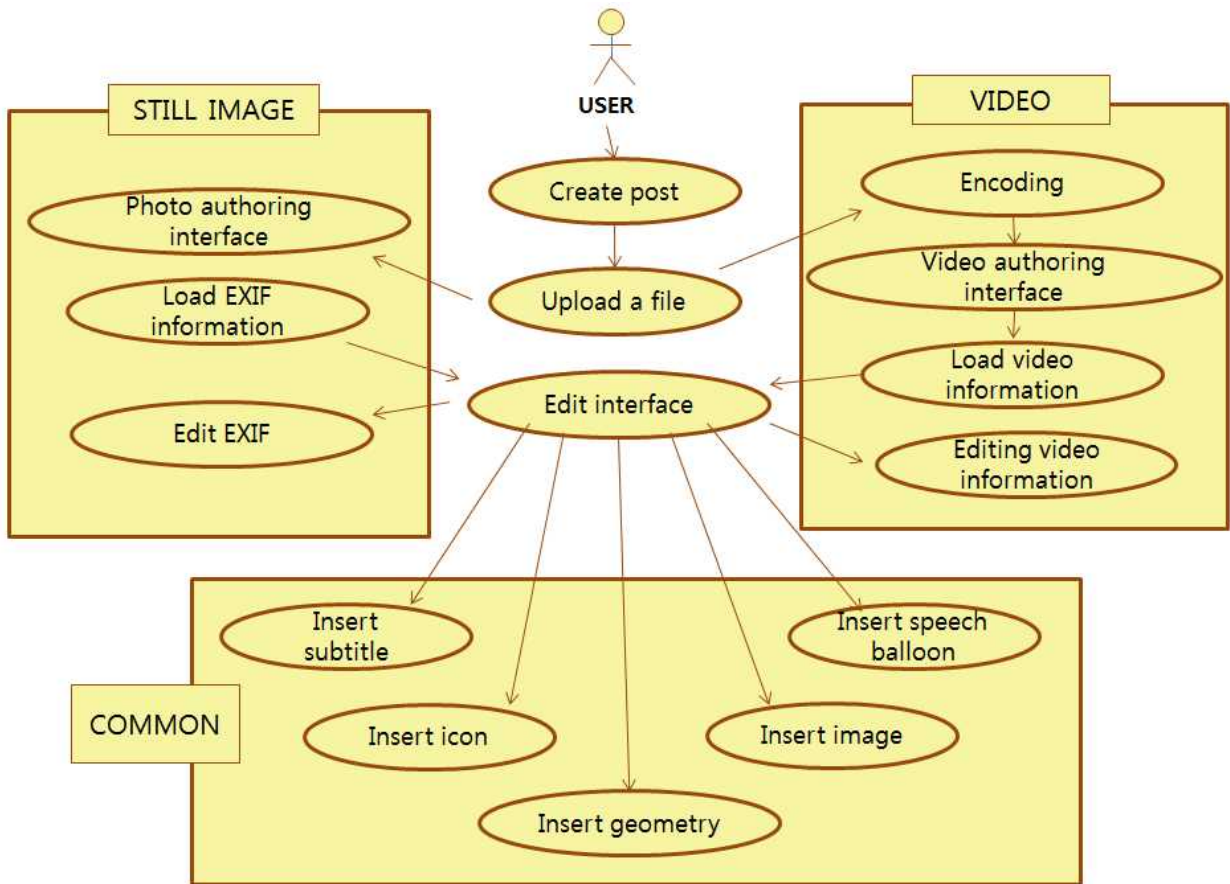| GeoCMS manual	Project classification	Land Spatial Information Research Project
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2.2. System structure

System structure diagram

The GeoCMS platform is divided into authoring function, interworking function, and web service function.

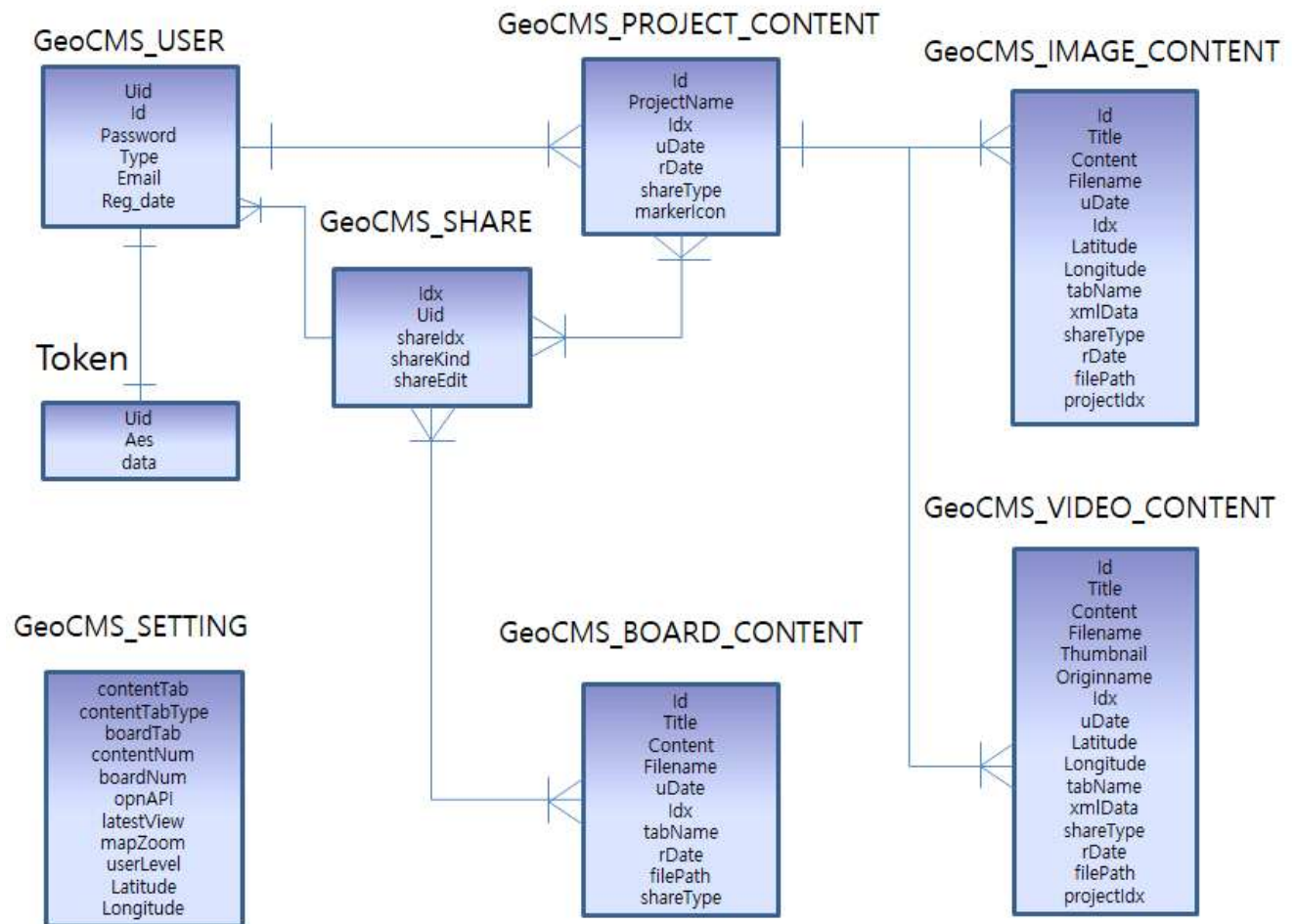| GeoCMS manual	Project classification	Land Spatial Information Research Project
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2.3. Use case

Use case

2.4. Database

Database

2.5. XML Schema

When the photo and video content information is stored in XML and shared, it is composed of the following schema

```xml
<?xml version="1.0" encoding="UTF-8"?>
<upcm_obj>
  - <obj>
        <id>g</id>
        <top>180</top>
        <left>255</left>
        <xstr>245_564</xstr>
        <ystr>176_419</ystr>
        <linecolor>#959595</linecolor>
        <backgroundcolor>#FF0000</backgroundcolor>
        <type>circle</type>
    </obj>
  - <obj>
        <id>i</id>
        <top>42.98611900390625</top>
        <left>203.9930617529297</left>
        <width>74px</width>
        <height>67px</height>
        <src>/egov/images/geoImg/icon/black/d4.png</src>
    </obj>
  - <obj>
        <id>c</id>
        <top>359.0972335058594</top>
        <left>293.10764</left>
        <href>false</href>
        <underline>false</underline>
        <italic>false</italic>
        <bold>false</bold>
        <fontsize>Normal</fontsize>
        <fontcolor>#fff100</fontcolor>
        <backgroundcolor/>
        <text> Here is City Hall.</text>
    </obj>
</upcm_obj>
```

XML Schema

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Type	Tag Name	Description
All	Upcm_obj	Top-level Tag name
All	obj	Authored Annotation Information Tag
All	id	Annotation ID Tag
All	top	Top Position coordinate value
All	left	Left position coordinate value
Icon	width	Width value of icon
Icon	height	Height value of icon
Icon	src	Src (externally accessible URL) path of the icon
Caption, Bubble	href	External reference link URL path
Caption, Bubble	underline	Underline Attribute value of Text
Caption, Bubble	italic	Italic Attribute value of Text
Caption, Bubble	bold	Bold Attribute value of Text
Caption, Bubble	fontsize	Text size attribute value of Text
Caption, Bubble	fontcolor	Color attribute value of Text
All	backgroundcolor	Annotation background color value
Caption, Bubble	text	User string value
Geometry	xstr	Geometry X Point value
Geometry	ystr	Geometry Y Point value
Geometry	linecolor	Line color attribute value of the geometry
Geometry	type	Type property value of geometry (point, circle, rect)

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2.6. How to use GeoCMS

2.6.1. Download source files from GitHub

- ● GeoCMS
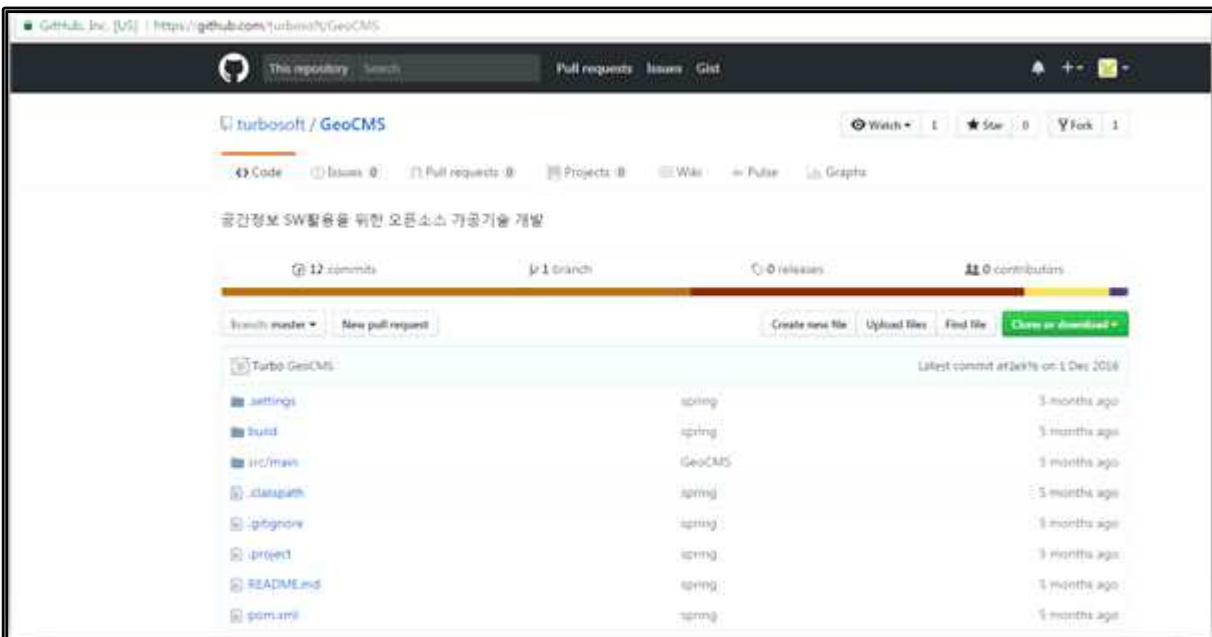
  https://github.com/turbosoft/GeoCMS

- ● GeoCMS_Gateway

  https://github.com/turbosoft/GeoCMS_Gateway

- ● GeoPhoto

  https://github.com/turbosoft/GeoPhoto

- ● GeoVideo

  https://github.com/turbosoft/GeoVideo

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After decompressing into the webapps folder of Tomcat 6.0, change the folder names to GeoCMS, GeoPhoto, GeoVideo, and GeoCMS_Gateway respectively.
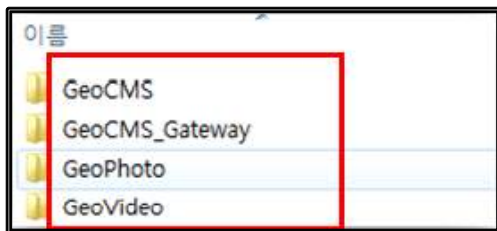
2.6.2. Email settings

Set the admin mail and password to send a confirmation e-mail when searching for membership, ID and password in GeoCMS / src / main / webapp / WEB-INF / classes / properties / geocms.properties file.

- Administrator email is only available for Gmail. After logging in, connect to the following link and change Allow lower security app to Enable. (Required to use Gmail SMTP.)
  https://www.google.com/settings/security/lesssecureapps
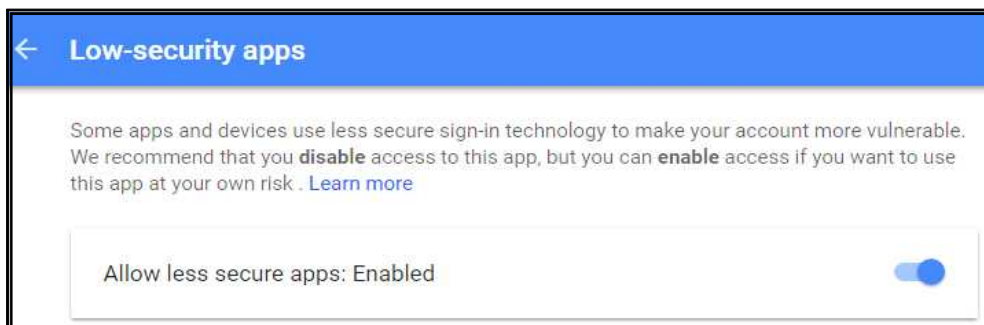
2.6.3. Tomcat configuration

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```
<welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>geoCMSmain.jsp</welcome-file>
</welcome-file-list>
```

- tomcat/conf/web.xml

    Set the geoCMSmain.jsp file in the welcome-file.

- server.xml

    Set the context to match the path

```
<Host name="localhost"  appBase="webapps"
    unpackWARs="true" autoDeploy="true"
    xmlValidation="false" xmlNamespaceAware="false">

    <Context path="/GeoCMS" docBase="C:\Users\Turbo\Desktop\geocms_apache.tomcat.6.0.36\webapps\GeoCMS\src\main\webapp" reloadable="true"/>
    <Context path="/GeoPhoto" docBase="C:\Users\Turbo\Desktop\geocms_apache.tomcat.6.0.36\webapps\GeoPhoto\src\main\webapp" reloadable="true"/>
    <Context path="/GeoVideo" docBase="C:\Users\Turbo\Desktop\geocms_apache.tomcat.6.0.36\webapps\GeoVideo\src\main\webapp" reloadable="true"/>
    <Context path="/GeoCMS_Gateway" docBase="C:\Users\Turbo\Desktop\geocms_apache.tomcat.6.0.36\webapps\GeoCMS_Gateway\src\main\webapp" reloadable="true"/>

</Host>
```

2.6.4. When running GeoVideo

- Download the ffmpeg.exe file from https://ffmpeg.zeranoe.com/builds/ and change the file path.

컴퓨터 ▶ 로컬 디스크 (C:) ▶ ffmpeg ▶ bin

|브러리에 포함 ▼   공유 대상 ▼   새 폴더

이름

ffmpeg.exe

2.6.5. Create Table

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Create a table using the GeoCMS_DB script.txt file in the GeoCMS folder.

(MYSQL must be installed.)

- geocms_board_content (board table)

```
Field       Type           Collation        Null    Key     Default  Extra
----------  -------------  ---------------  ------  ------  -------  --------------
id          varchar(200)   utf8_general_ci  YES             (NULL)
title       varchar(200)   utf8_general_ci  YES             (NULL)
content     varchar(4000)  utf8_general_ci  YES             (NULL)
filename    varchar(200)   utf8_general_ci  YES             (NULL)
uDate       datetime       (NULL)           YES             (NULL)
idx         int(11)        (NULL)           NO      PRI     (NULL)   auto_increment
tabName     varchar(200)   utf8_general_ci  YES             (NULL)
rDate       datetime       (NULL)           YES             (NULL)
filePath    text           utf8_general_ci  YES             (NULL)
shareType   int(1)         (NULL)           YES             (NULL)
```

- geocms_image_content (image table)

```
Field       Type           Collation        Null    Key     Default  Extra
----------  -------------  ---------------  ------  ------  -------  --------------
id          varchar(200)   utf8_general_ci  YES             (NULL)
title       varchar(200)   utf8_general_ci  YES             (NULL)
content     varchar(200)   utf8_general_ci  YES             (NULL)
filename    varchar(200)   utf8_general_ci  YES             (NULL)
uDate       datetime       (NULL)           YES             (NULL)
idx         int(11)        (NULL)           NO      PRI     (NULL)   auto_increment
latitude    decimal(20,15) (NULL)           YES             (NULL)
longitude   decimal(20,15) (NULL)           YES             (NULL)
tabName     varchar(200)   utf8_general_ci  YES             (NULL)
xmlData     text           utf8_general_ci  YES             (NULL)
shareType   int(1)         (NULL)           NO              (NULL)
rDate       datetime       (NULL)           YES             (NULL)
filePath    text           utf8_general_ci  YES             (NULL)
projectIdx  int(11)        (NULL)           YES             (NULL)
```

- geocms_project_content (project table)

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```
Field        Type          Collation        Null   Key     Default  Extra
-----------  ------------- ---------------  ------  ------  -------  --------------
id           varchar(200)  utf8_general_ci  NO              (NULL)
projectName  text          utf8_general_ci  NO              (NULL)
idx          int(11)       (NULL)           NO      PRI     (NULL)   auto_increment
uDate        datetime      (NULL)           NO              (NULL)
rDate        datetime      (NULL)           NO              (NULL)
shareType    int(1)        (NULL)           NO              (NULL)
markerIcon   varchar(200)  utf8_general_ci  YES             (NULL)
```

● geocms_video_content (video table)

```
Field        Type           Collation        Null   Key     Default  Extra
-----------  -------------- ---------------  ------  ------  -------  --------------
id           varchar(200)   utf8_general_ci  YES             (NULL)
title        varchar(200)   utf8_general_ci  YES             (NULL)
content      varchar(200)   utf8_general_ci  YES             (NULL)
filename     varchar(200)   utf8_general_ci  YES             (NULL)
thumbnail    varchar(200)   utf8_general_ci  YES             (NULL)
originname   varchar(200)   utf8_general_ci  YES             (NULL)
idx          int(11)        (NULL)           NO      PRI     (NULL)   auto_increment
uDate        datetime       (NULL)           YES             (NULL)
latitude     decimal(20,15) (NULL)           YES             (NULL)
longitude    decimal(20,15) (NULL)           YES             (NULL)
tabName      varchar(200)   utf8_general_ci  YES             (NULL)
xmlData      text           utf8_general_ci  YES             (NULL)
shareType    int(1)         (NULL)           NO              (NULL)
rDate        datetime       (NULL)           YES             (NULL)
filePath     text           utf8_general_ci  YES             (NULL)
projectIdx   int(11)        (NULL)           YES             (NULL)
```

● Token (token table)

```
Field   Type          Collation        Null   Key     Default  Extra
------  ------------- ---------------  ------  ------  -------  ------
uid     int(11)       (NULL)           NO      PRI     (NULL)
aes     varchar(128)  utf8_general_ci  YES             (NULL)
date    datetime      (NULL)           YES             (NULL)
```

● geocms_user (user table)

```
Field     Type          Collation        Null   Key     Default  Extra
--------  ------------- ---------------  ------  ------  -------  --------------
uid       int(20)       (NULL)           NO      PRI     (NULL)   auto_increment
id        varchar(20)   utf8_general_ci  NO      PRI
password  varchar(30)   utf8_general_ci  YES             (NULL)
type      varchar(30)   utf8_general_ci  YES             (NULL)
email     varchar(50)   utf8_general_ci  YES             (NULL)
reg_date  datetime      (NULL)           YES             (NULL)
```

● geocms_setting (Screen setting information table)

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```
Field            Type             Collation          Null    Key     Default
-------------    -------------    ---------------    ------  ------   --------------------------
contentTab       varchar(400)     utf8_general_ci    YES             sample
contentTabType   varchar(400)     utf8_general_ci    YES             list
boardTab         varchar(400)     utf8_general_ci    YES             sample
contentNum       varchar(400)     utf8_general_ci    YES             500
boardNum         varchar(400)     utf8_general_ci    YES             300
openAPI          int(1)           (NULL)             YES             1
latestView       int(1)           (NULL)             YES             1
mapZoom          int(10)          (NULL)             YES             8
userLevel        varchar(100)     utf8_general_ci    YES             ADMIN,DELETE,MODIFY,WRITE
latitude         decimal(20,15)   (NULL)             YES             (NULL)
longitude        decimal(20,15)   (NULL)             YES             (NULL)
```

- geocms_share (share table)

```
Field        Type          Collation          Null    Key     Default    Extra
---------    -----------   ---------------    ------  ------   -------    ---------------
idx          int(11)       (NULL)             NO      PRI      (NULL)     auto_increment
uid          int(11)       (NULL)             NO               (NULL)
shareIdx     int(11)       (NULL)             NO               (NULL)
shareKind    varchar(20)   utf8_general_ci    NO               (NULL)
shareEdit    char(1)       utf8_general_ci    YES              N
```

2.6.6. GeoCMS DB Connection Settings

- Src/main/webapp/WEB-INF/spring/config/config.properties of GeoCMS_Gateway

Change the url, username, password of the file to suit your environment

```
jdbc.driver=com.mysql.jdbc.Driver
jdbc.url=jdbc:mysql://localhost:3306/upcms?useUnicode=yes&characterEncoding=UTF-8
jdbc.username=geocms
jdbc.password=geocms1
```

2.7. Using the service

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2.7.1. Before Using the Server

● Add a default value to the geocms_setting table.

contentTab	contentTabType	boardTab	contentNum	boardNum	openAPI	latestView	mapZoom	userLevel	latitude	longitude
sample	list	sample	500	300	1	1	8	ADMIN,DELETE,MODIFY,WRITE	(NULL)	(NULL)

Query : insert into geocms_setting values ('sample', 'list', 'sample',500, 300,1,1,8,'ADMIN,DELETE,MODIFY,WRITE', null, null);

2.7.2. When creating an administrator account

● Add uid, id, pass, type (ADMIN) to the geocms_user table.

(Type: admin, delete, modify, write, the default is modify)

	uid	id	password	type	email	reg_date
☐	1	admin	admin1	ADMIN	(NULL)	2017-08-07 20:36:08

Qyery : insert into geocms_user (id, password, type, email, reg_date) values ('admin','admin1','ADMIN',null, now());

● Add the above uid, data to the token table.

The aes key is automatically set and saved at login. (aes: random key for token management)
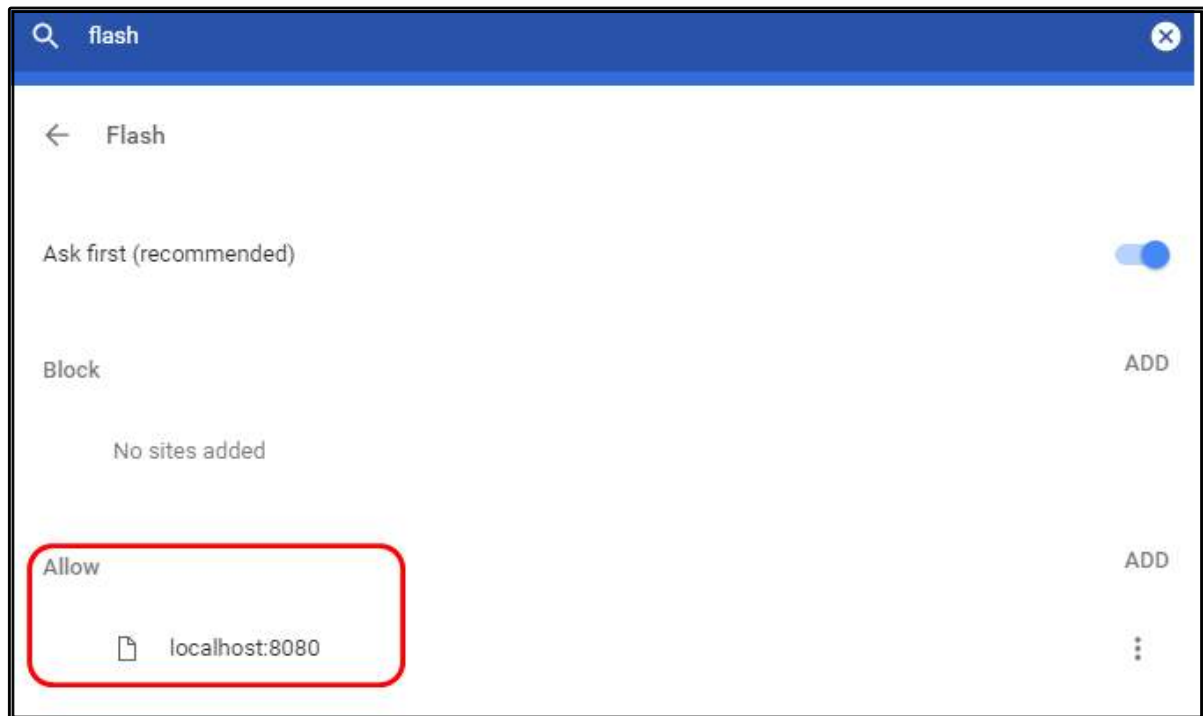
	uid	aes	date
☐	1		2017-10-23 09:39:00

Query : insert into token (uid, date) value (1, now());

2.7.3. If the upload button is not visible

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● Chrome -> Settings -> flash search in search bar -> content setting -> Flash
-> Add current site to allow

2.7.4 Main logo and bottom UI modifications

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```
GeoCMS › src › main › webapp › images › geoImg › main_images

foot_logo01.gif
foot_logo02.gif
logo.jpg
logout.png
more.png
```

● Edit main log

   Save the name of the logo image you want to change as logo.jpg in GeoCMS / src / main / webapp / images / geoImg / main_images. (Image size is 152 * 57)

● Bottom UI fix

  - Save the image to be placed at the bottom in GeoCMS / src / main / webapp / imagese / geoImg / main_images and modify the contents of GeoCMS / src / main / webapp / WEB-INF / jsp / footer.jsp. (Image size is 100 * 38)

  - Change the foot_logt02.git of the tag to the image name to be displayed first and the foot_logo01.git of the second <img> tag to the image name to be displayed second.

  - When changing the address and phone number, change the <div> tag Correct the contents and save.

```
<img src="<c:url value='/images/geoImg/main_images/foot_logo02.gif'/>" style="margin-left:420px; margin-top:10px; float:left; height: 38px;">
<img src="<c:url value='/images/geoImg/main_images/foot_logo01.gif'/>" style="margin-left:15px; margin-top:10px; float:left; height: 38px;">
<div id="ftext" style="margin:15px 0 0 20px; float:left; text-align: left;">
    (431-712) GyeongGi-Do AnYang-Si DongAn-Gu SiminDaeRo 254  <b>Tel.</b> 031-380-0114 <b>Fax.</b> 031-380-0470 <b>E-mail.</b> webmaster@krihs.re.kr<br>
    copyright(c) 2014 Korea Research Institute For Human Settlements. All Rights reserved
</div>
```

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