National Spatial Data Infrastructure Research Program

Development of open source processing technology for

Application of spatial information SW

GeoCMS Installation Manual

TURBO SOFT CO.

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.

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

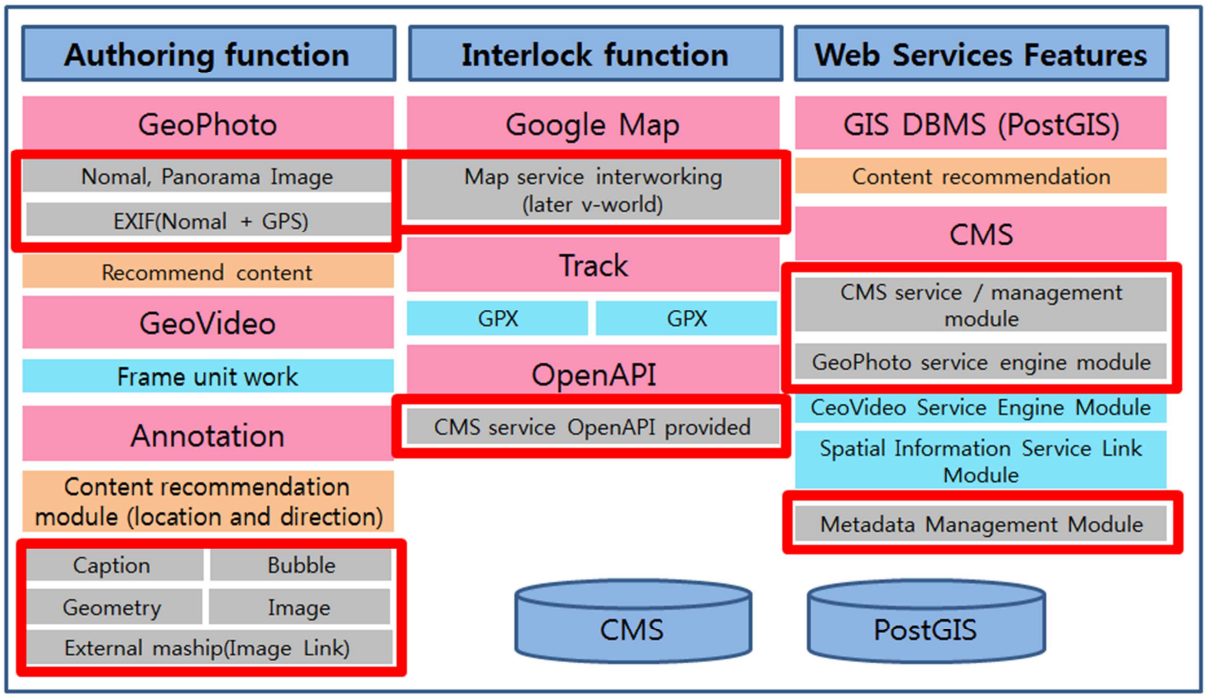
- Cost substitution and cheap introduction / utilization cost of public information system in the public sector
- Strengthen domestic SW industry ecosystem based on open source SW technology for spatial information
- To foster the spatial information software industry, to nurture specialized personnel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

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	

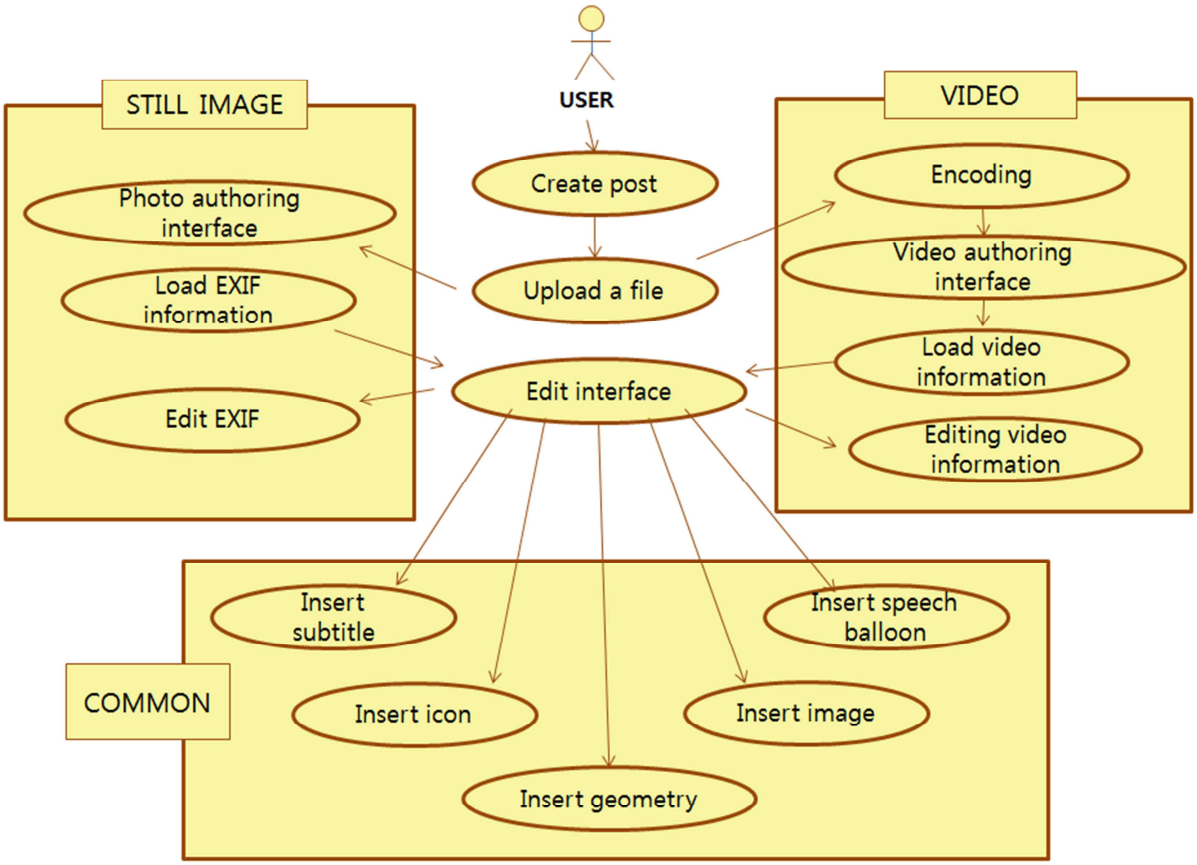
2.2. System structure



System structure diagram

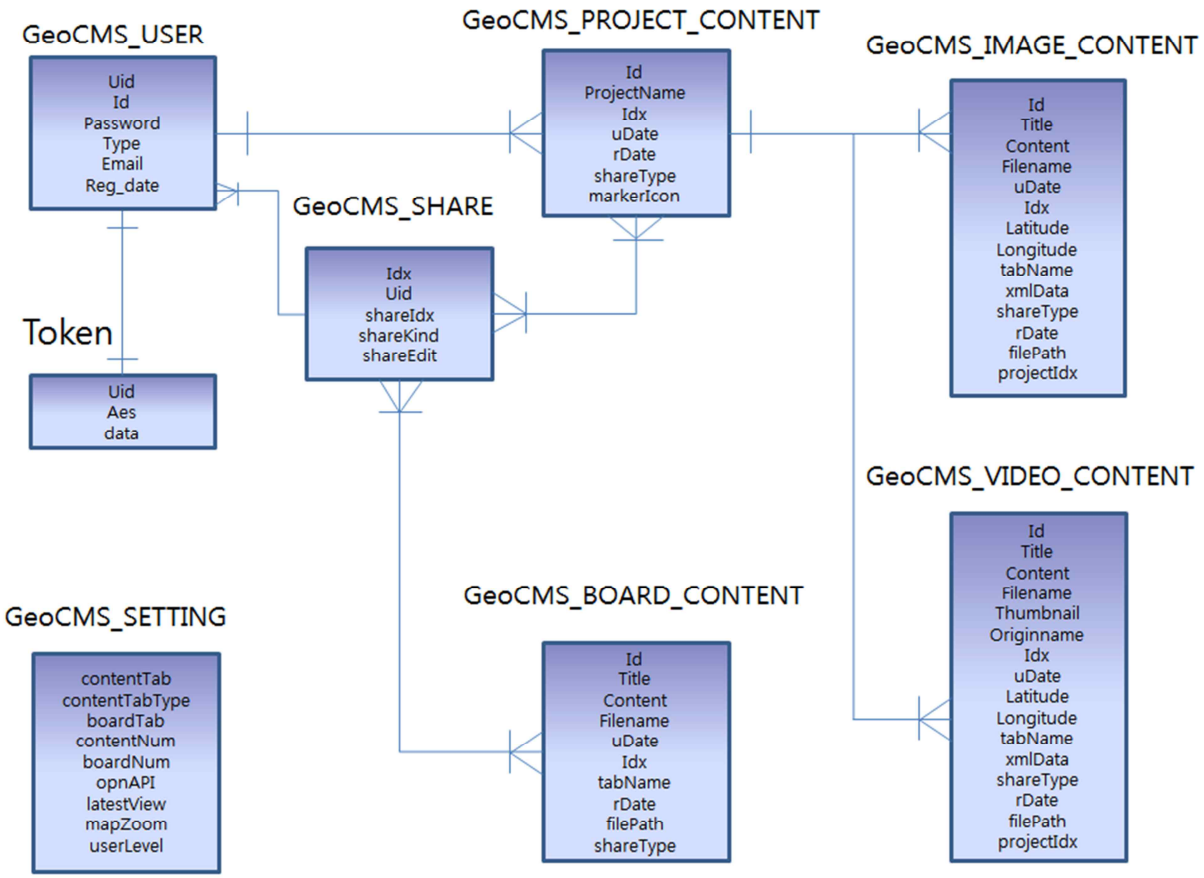
The GeoCMS platform is divided into authoring function, interworking function, and web service function.

2.3. Use case



Use case

2.4. Database


GeoCMS_USER
Uid
Id
Password
Type
Email
Reg_date
GeoCMS_PROJECT_CONTENT
Id
ProjectName
Idx
uDate
rDate
shareType
markerIcon
GeoCMS_IMAGE_CONTENT
Id
Title
Content
Filename
uDate
Idx
Latitude
Longitude
tabName
xmlData
shareType
rDate
filePath
projectIdx
GeoCMS_SHARE
Idx
Uid
shareIdx
shareKind
shareEdit
Token
Uid
Aes
data
GeoCMS_VIDEO_CONTENT
Id
Title
Content
Filename
Thumbnail
Originname
Idx
uDate
Latitude
Longitude
tabName
xmlData
shareType
rDate
filePath
projectIdx
GeoCMS_BOARD_CONTENT
Id
Title
Content
Filename
uDate
Idx
tabName
rDate
filePath
shareType
GeoCMS_SETTING
contentTab
contentTabType
boardTab
contentNum
boardNum
opnAPI
latestView
mapZoom
userLevel

2.5. XML Schema

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

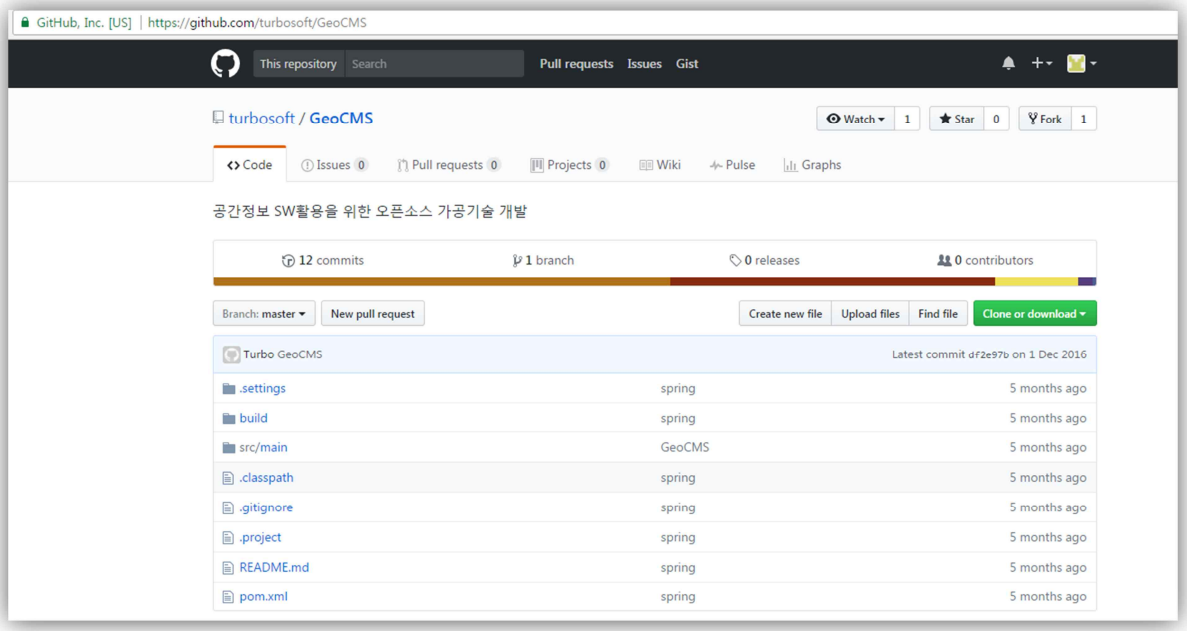
```
<?xml version="1.0" encoding="UTF-8"?>
<upcm_obj>
  - <obj>
        <id>g</id>
        <top>180</top>
        <left>255</left>
        <xstr>245_564</xstr>
        <ystr>176_419</ystr>
        <linecolor>#959595</linecolor>
        <backgroundcolor>#FF0000</backgroundcolor>
        <type>circle</type>
    </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>여기는 시청입니다.</text>
    </obj>
</upcm_obj>
```

XML Schema

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)

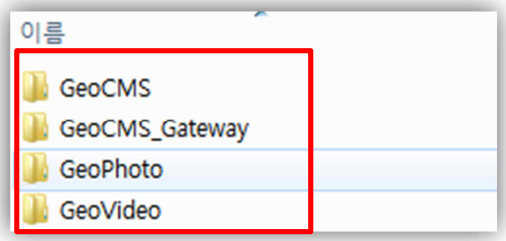
2.6. How to use GeoCMS

2.6.1. Download source files from GitHub



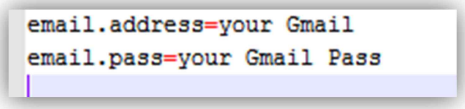
- GeoCMS
  https://github.com/turbosoft/GeoCMS
- GeoCMS_Gateway
  https://github.com/turbosoft/GeoCMS_Gateway
- GeoPhoto
  https://github.com/turbosoft/GeoPhoto
- GeoVideo
  https://github.com/turbosoft/GeoVideo

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

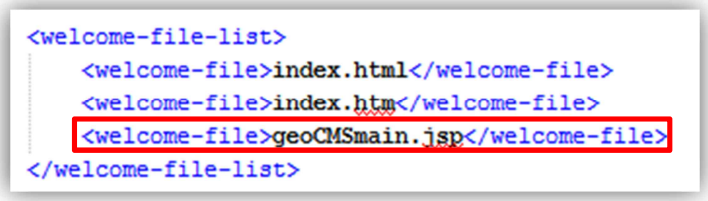
Set the admin mail and password to send a confirmation e-mail when searching for membership, ID and password in GeoCMS / src / main / webapp / WEB-INF / classes / properties / geocms.properties file.



2.6.3. Tomcat configuration

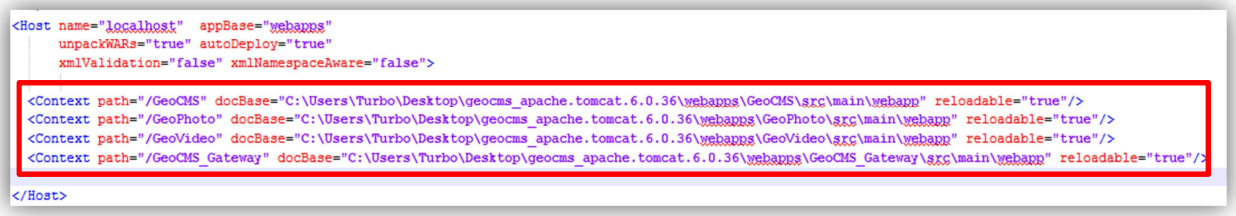
- web.xml

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



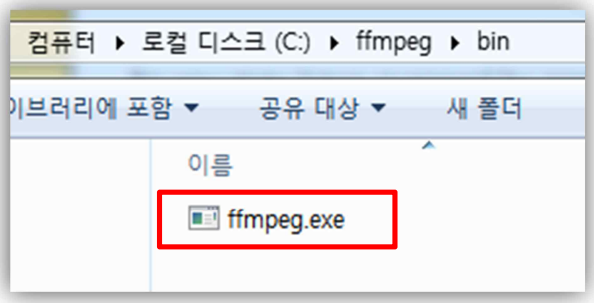
- server.xml

  Set the context to match the path.



2.6.4. When running GeoVideo

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



2.6.5. Create Table

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)

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)

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		(NULL)
boardNum	varchar(400)	utf8_general_ci	YES		(NULL)
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

- 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

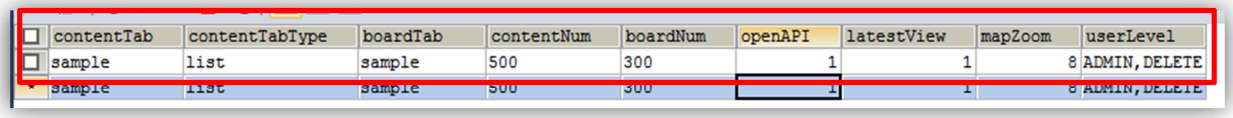
Change the url, username, password of the file to suit your environment

```
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

2.7.1. Before Using the Server

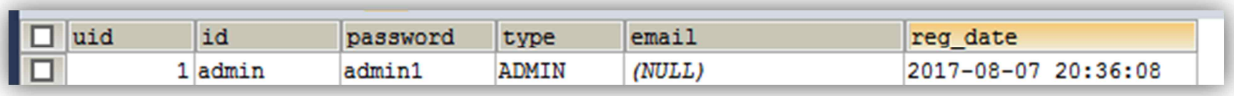
- Add a default value to the geocms_setting table.



contentTab	contentTabType	boardTab	contentNum	boardNum	openAPI	latestView	mapZoom	userLevel
sample	list	sample	500	300	1	1	8	ADMIN,DELETE
sample	list	sample	500	300	1	1	8	ADMIN,DELETE

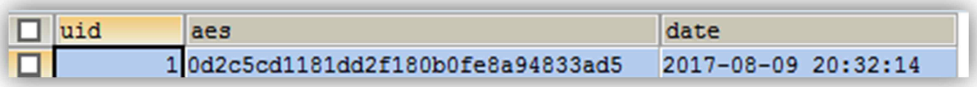
2.7.2. When creating an administrator account

- 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

- Add the above uid, aes, and data to the token table.
  (ase: random key for token management)



uid	aes	date
1	0d2c5cd1181dd2f180b0fe8a94833ad5	2017-08-09 20:32:14