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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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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2.2. System structure
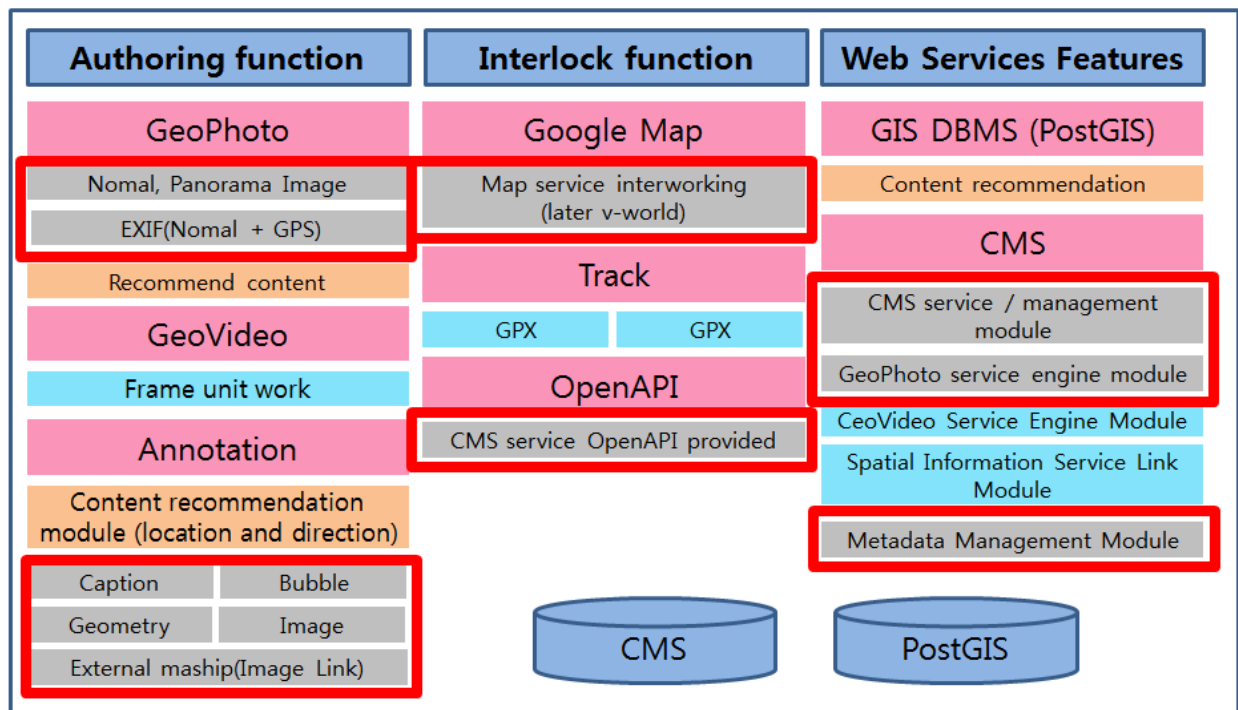
System structure diagram
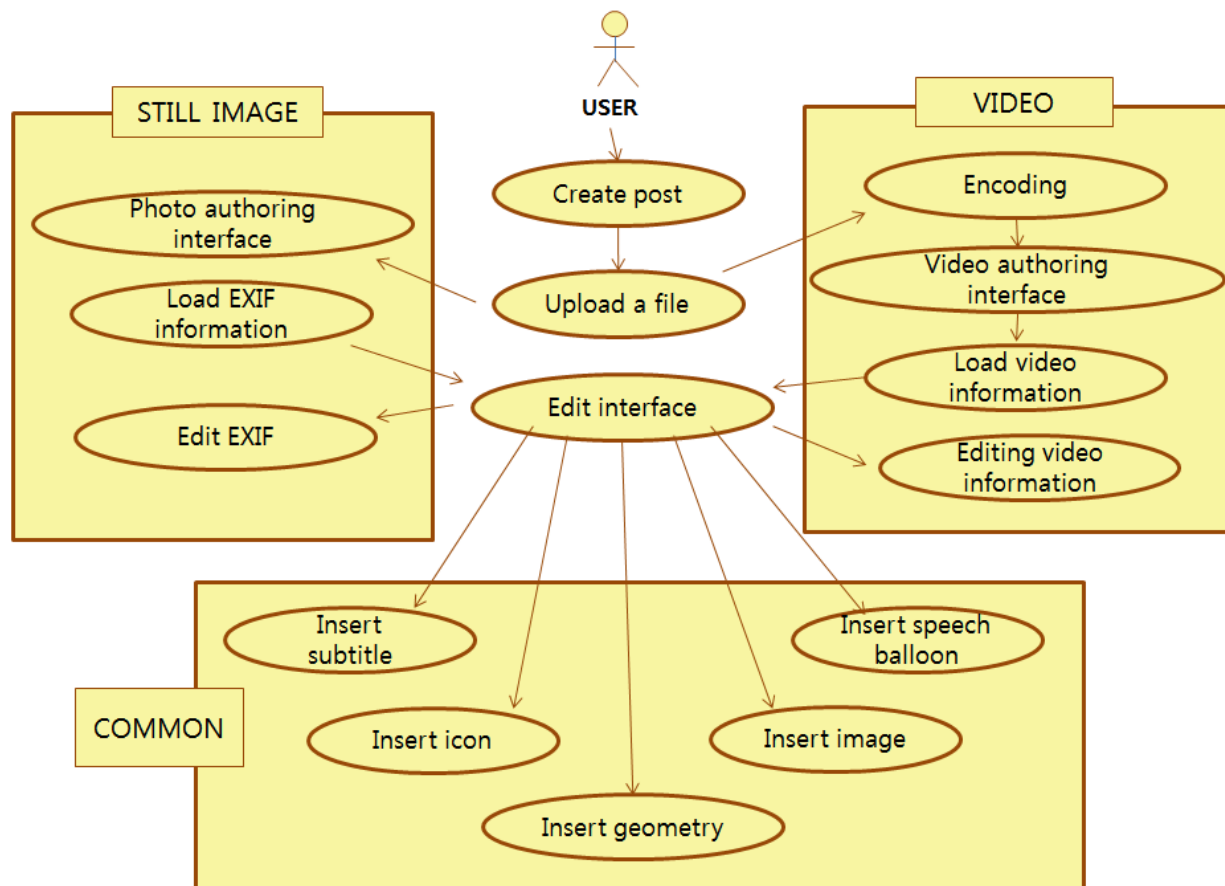
The GeoCMS platform is divided into authoring function, interworking function, and web service function.

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2.3. Use case

Use case

2.4. Database

GeoCMS_USER

- Uid
- Id
- Password
- Type
- Email
- Reg_date

Token

- Uid
- Aes
- data

GeoCMS_SHARE

- Idx
- Uid
- shareIdx
- shareKind
- shareEdit

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_VIDEO_CONTENT

- Id
- Title
- Content
- Filename
- Thumbnail
- Originname
- Idx
- uDate
- Latitude
- Longitude
- tabName
- xmlData
- shareType
- rDate
- filePath
- projectIdx

GeoCMS_SETTING

- contentTab
- contentTabType
- boardTab
- contentNum
- boardNum
- opnAPI
- latestView
- mapZoom
- userLevel

GeoCMS_BOARD_CONTENT

- Id
- Title
- Content
- Filename
- uDate
- Idx
- tabName
- rDate
- filePath
- shareType

Database

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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>여기는 시청입니다.</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
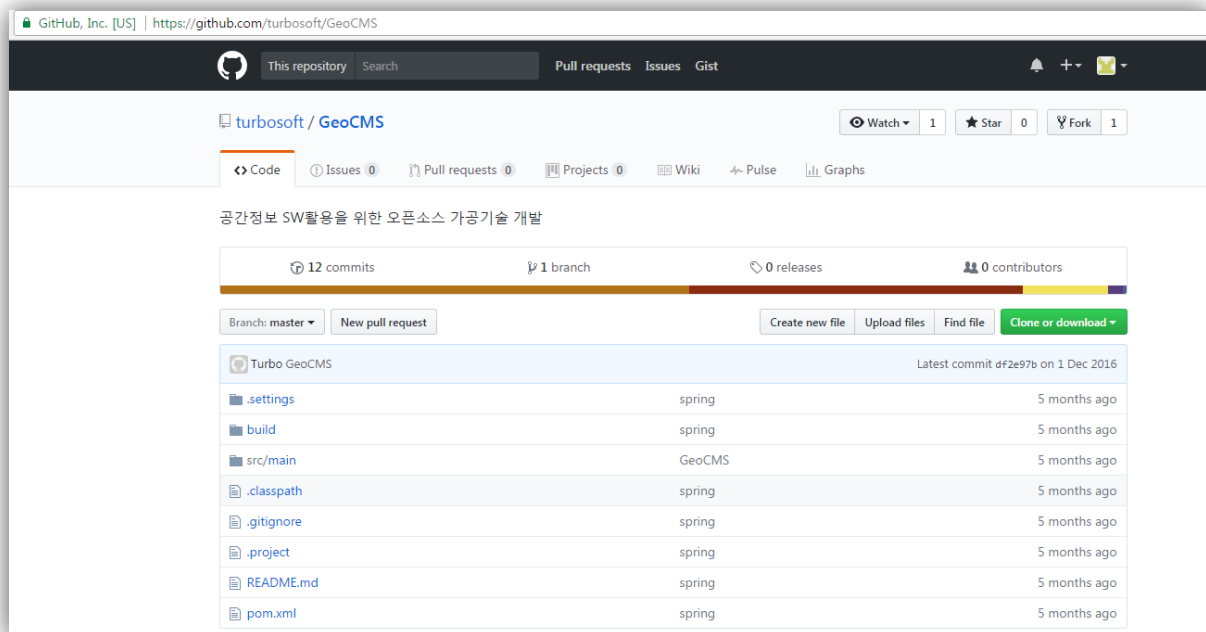
https://github.com/turbosoft/GeoCMS

● 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.
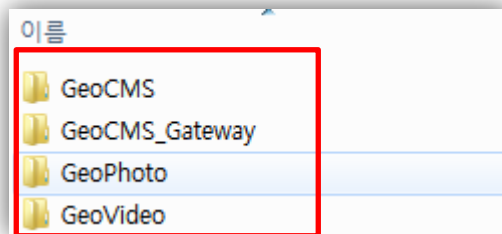
2.6.2. Email settings

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.

2.6.3. Tomcat configuration

- web.xml

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

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

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- 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.
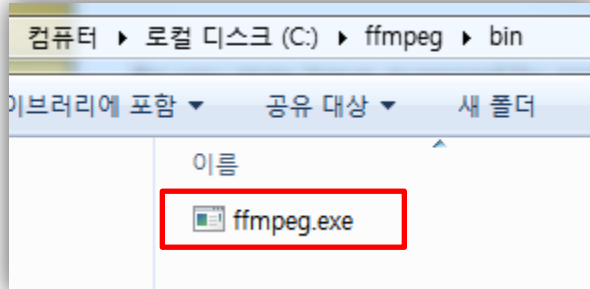
컴퓨터 ▸ 로컬 디스크 (C:) ▸ ffmpeg ▸ bin

이브러리에 포함 ▾   공유 대상 ▾   새 폴더

이름

ffmpeg.exe

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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)
```

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- 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)
```

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- 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
```

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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

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

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

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

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

uid	aes	date
1		2017-10-23 09:39:00

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

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2.7.3. If the upload button is not visible

- Chrome -> Settings -> flash search in search bar -> Content settings -> Flash -> Add current site to allow