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
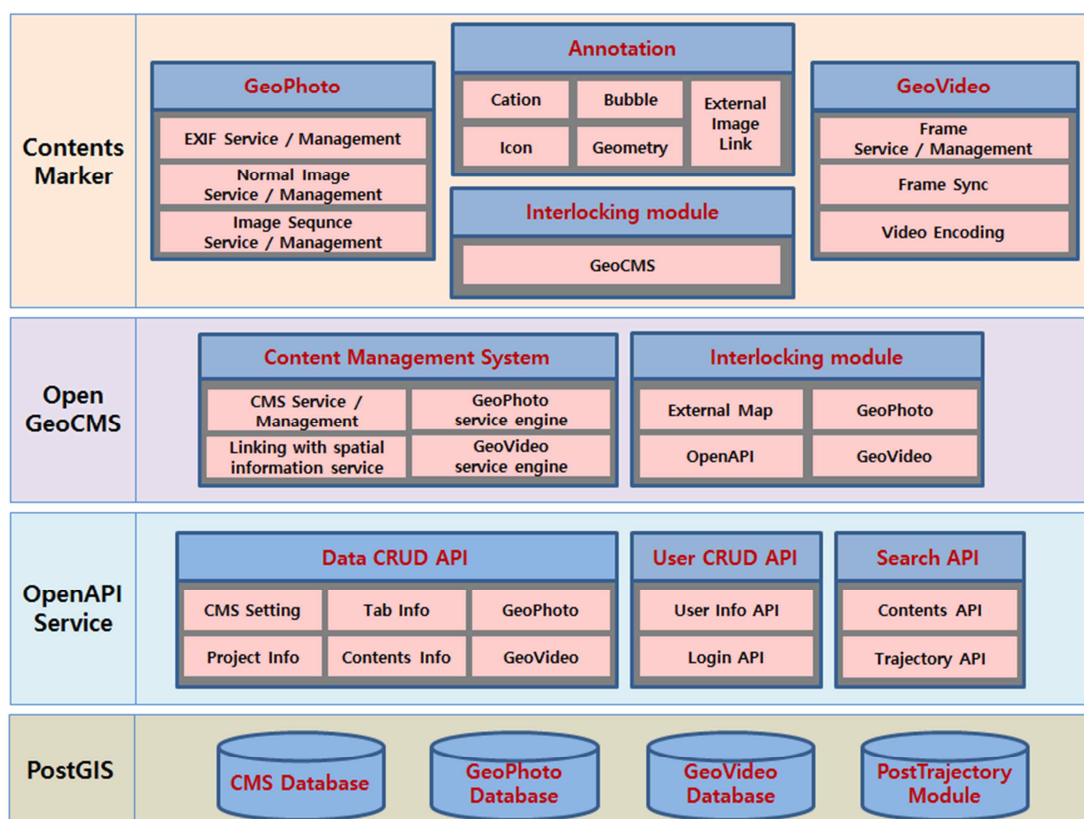
<table>
<tr><td colspan="3" align="center">Software Information</td></tr>
<tr><td rowspan="2">operating system</td><td>server</td><td>Apache Tomcat 6.0</td></tr>
<tr><td>Client</td><td>Chrome 44+</td></tr>
<tr><td>Uniqueness
(Product
activation
requirements)</td><td colspan="2">External map engines (such as GoogleMaps) and Open APIs (such as Google Geocoding) should be available.
DB :PostgreSQL 9.6</td></tr>
<tr><td colspan="3" align="center">Hardware Information</td></tr>
<tr><td>Other environment</td><td colspan="2">2.4GHz, 4G RAM, Winows 10</td></tr>
</table>

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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

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2.4. Database
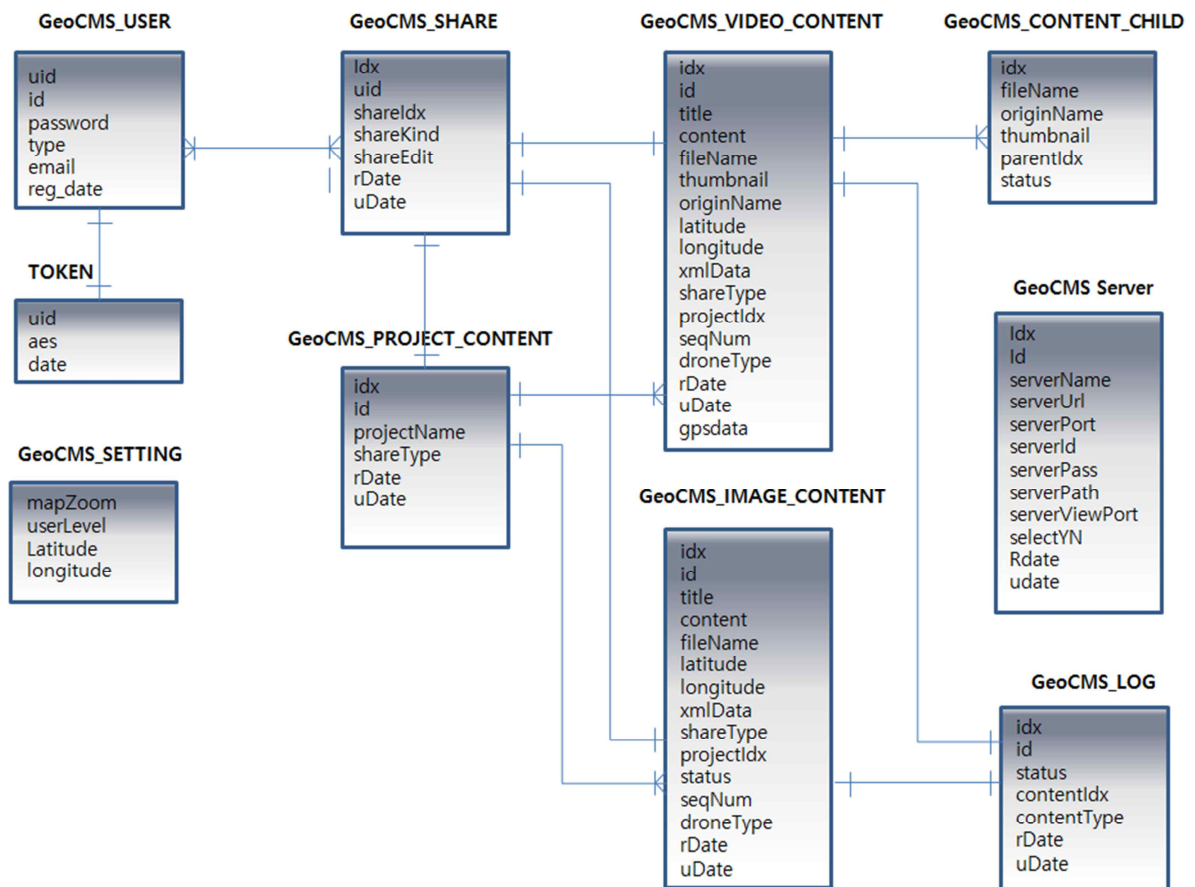
Database

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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"?>
<GeoCMS>
  - <obj>
        <id>g</id>
        <top>300</top>
        <left>235</left>
        <xstr>235_391</xstr>
        <ystr>294_420</ystr>
        <linecolor>#ff0</linecolor>
        <backgroundcolor>#FF0000</backgroundcolor>
        <type>rect</type>
    </obj>
  - <obj>
        <id>b</id>
        <top>250</top>
        <left>232</left>
        <href>false</href>
        <underline>false</underline>
        <italic>false</italic>
        <bold>true</bold>
        <fontsize>H1</fontsize>
        <fontcolor>#ffffff</fontcolor>
        <backgroundcolor>#0000ff</backgroundcolor>
        <text>방지턱 입니다.</text>
    </obj>
  - <obj>
        <id>i</id>
        <top>268</top>
        <left>390</left>
        <width>79px</width>
        <height>68px</height>
        <src>/GeoPhoto/images/geoImg/icon/black/d130.png</src>
    </obj>
</GeoCMS>
```

XML Schema

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Type	Tag Name	Description
All	GeoCMS	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
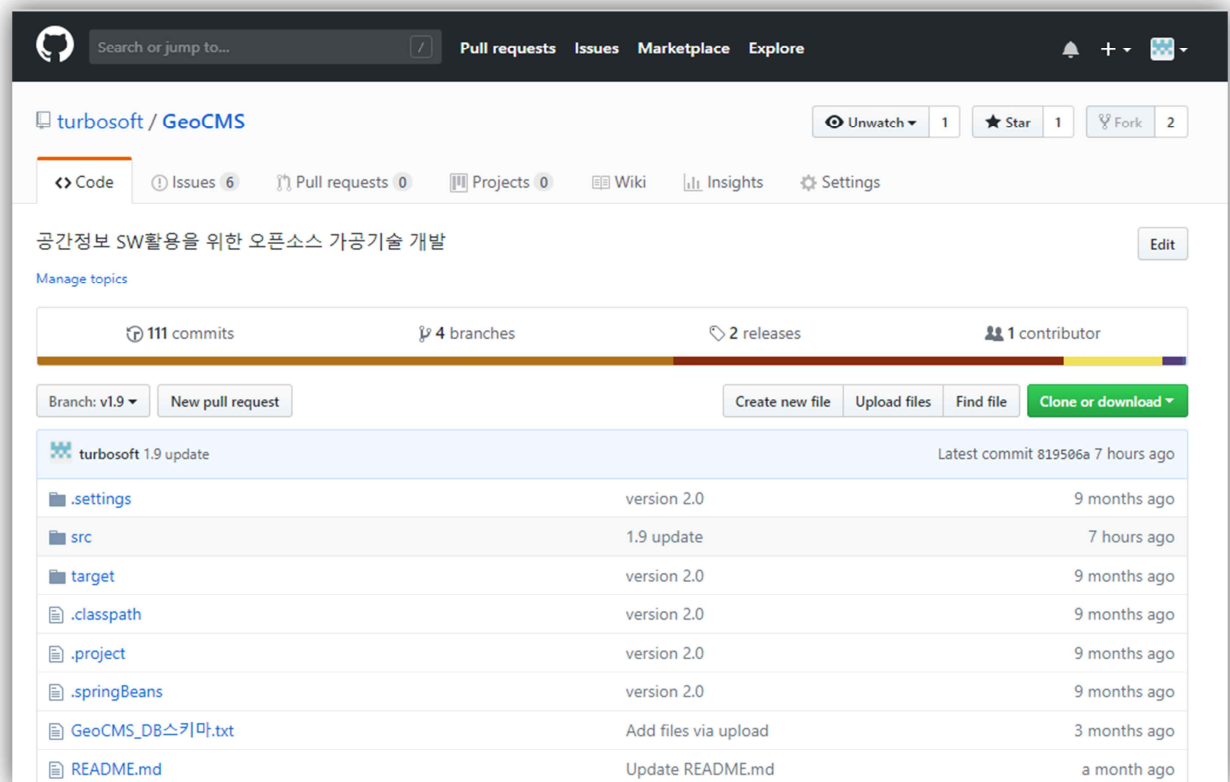
https://github.com/turbosoft/GeoCMS

● GeoCMS_Gateway

https://github.com/turbosoft/GeoCMS_Gateway

● GeoPhoto

https://github.com/turbosoft/GeoPhoto

● GeoVideo

https://github.com/turbosoft/GeoVideo

- Uncompress the webapps folder in Tomcat 6.0 and change the folder names to GeoCMS, GeoPhoto, GeoVideo, and GeoCMS_Gateway respectively.
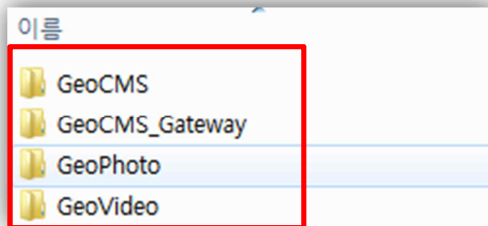
2.6.2. Email and server settings

- GeoCMS/src/main/webapp/WEB-INF/classes/properties/geocms.properties
- GeoPhoto/src/main/webapp/WEB-INF/classes/properties/geocms.properties
- Assign administrator email and password to send confirmation e-mail when registering membership, ID and password in file.

```
1 email.address=your gmail
2 email.pass=your gmail Pass
```

- Administrator email can only be used with Gmail. After logging in, access the following link to turn on Allow less secure apps to use. (Required to use Gmail SMTP.)
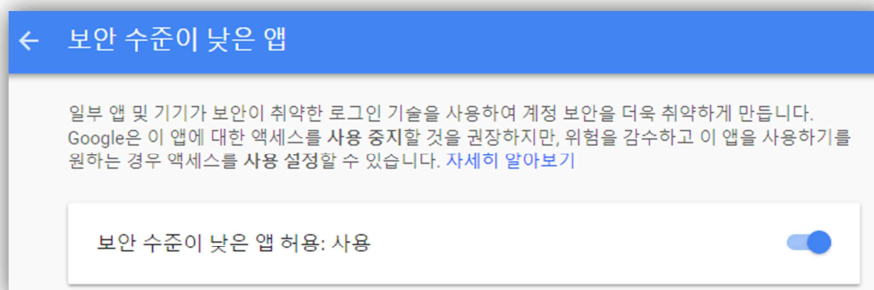
https://www.google.com/settings/security/lesssecureapps

2.6.3. Tomcat configuration

- tomcat/conf/web.xml
- Set geoCMSmain.jsp file in 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>
```

- 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.
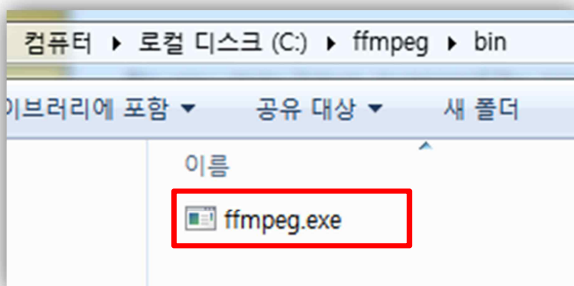
컴퓨터 ▸ 로컬 디스크 (C:) ▸ ffmpeg ▸ bin

이브러리에 포함 ▾   공유 대상 ▾   새 폴더

이름

ffmpeg.exe

- Download the exiftool.exe file from https://sourceforge.net/projects/exiftool and change the file path.

-GeoCMS_Gateway

```
package kr.co.turbosoft.util;

public class FFmpegSetting {

    private String ffmpeg_dir_and_file_name = "C:\\ffmpeg\\bin\\ffmpeg";
    private String exiftool_file_name = "C:\\ffmpeg\\exiftool";
```

- GeoCMS

```
package kr.co.turbosoft.geocms.util;

public class FFmpegSetting {

    private String ffmpeg_dir_and_file_name = "C:\\ffmpeg\\bin\\ffmpeg";
```

2.6.5. Create Table

- Create a table using the GeoCMS_DB script.txt file in the GeoCMS folder.
- (PostgreSQL must be installed.)

- geocms_content_child (Video subtables)

Columns						
Name	Data type	Length	Precision	Not NULL?	Primary key?
idx	bigint			Yes	Yes
filename	character varying	200		Yes	No
originname	character varying	200		Yes	No
thumbnail	character varying	200		No	No
parentidx	bigint			Yes	No
status	character varying	20		No	No

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- geocms_image_content (image table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
idx	bigint			Yes	Yes
id	character varying	200		No	No
title	character varying	200		No	No
content	character varying	200		No	No
filename	character varying	200		No	No
latitude	numeric	25	20	No	No
longitude	numeric	25	20	No	No
xmldata	text			No	No
sharetype	integer			Yes	No
projectidx	bigint			No	No
status	character varying	20		No	No
seqnum	bigint			No	No
dronetype	character varying	1		No	No
rdate	timestamp without time zone			No	No
udate	timestamp without time zone			No	No

- geocms_log (log write table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
idx	bigint			Yes	Yes
id	character varying	20		Yes	No
status	character varying	20		Yes	No
contentidx	text			No	No
contenttype	character varying	10		No	No
rdate	timestamp without time zone			No	No
udate	timestamp without time zone			No	No

- geocms_project_content (project table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
idx	bigint			Yes	Yes
id	character varying	200		Yes	No
projectname	text			Yes	No
sharetype	integer			Yes	No
rdate	timestamp without time zone			Yes	No
udate	timestamp without time zone			Yes	No

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- geocms_server(server table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
idx	bigint			Yes	Yes
id	character varying	200		No	No
servername	character varying	200		No	No
serverurl	character varying	500		No	No
serverport	bigint			No	No
serverid	character varying	200		No	No
serverpass	character varying	200		No	No
serverpath	character varying	200		No	No
serverviewport	bigint			No	No
selectyn	character varying	1		No	No
rdate	timestamp without time zone			No	No
udate	timestamp without time zone			No	No

- geocms_setting (setting table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
mapzoom	bigint			No	No
userlevel	character varying	100		No	No
latitude	numeric	25	20	No	No
longitude	numeric	25	20	No	No

- geocms_share (share table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
idx	bigint			Yes	Yes
uid	bigint			Yes	No
shareidx	bigint			Yes	No
sharekind	character varying	20		Yes	No
shareedit	character	1		No	No
rdate	timestamp without time zone			Yes	No
udate	timestamp without time zone			No	No

- geocms_user (user table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
uid	bigint			Yes	Yes
id	character varying	20		Yes	Yes
password	character varying	30		No	No
type	character varying	30		No	No
email	character varying	50		No	No
reg_date	timestamp without time zone			No	No

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- geocms_video_content (video table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
idx	bigint			Yes	Yes
id	character varying	200		No	No
title	character varying	200		No	No
content	character varying	200		No	No
filename	character varying	200		No	No
thumbnail	character varying	200		No	No
originname	character varying	200		No	No
latitude	numeric	25	20	No	No
longitude	numeric	25	20	No	No
xmldata	text			No	No
sharetype	integer			Yes	No
projectidx	bigint			No	No
seqnum	bigint			No	No
dronetype	character varying	1		No	No
rdate	timestamp without time zone			No	No
udate	timestamp without time zone			No	No
gpsdata	text			No	No

- token (token table)

Name	Data type	Length	Precision	Not NULL?	Primary key?
uid	bigint			Yes	Yes
aes	character varying	128		No	No
date	timestamp without time zone			No	No

2.6.6. GeoCMS DB Connection Settings

- Change the URL, username, and password in the src / main / webapp / WEB-INF / spring / config / config.properties file of GeoCMS_Gateway to suit your environment.

```
jdbc.driver=org.postgresql.Driver
jdbc.url=jdbc:postgresql://localhost:5432/postgres
jdbc.username=postgres
jdbc.password=postgres
```

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2.7. Using the service

2.7.1. Setting Table Defaults Before Using the Server

● When creating an administrator account, add uid, id, pass, type (ADMIN) to the geocms_user table. (type: admin, delete, modify, write, default is MODIFY)

	uid bigint	id character varying (20)	password character varying (30)	type character varying (30)	email character varying (50)	reg_date timestamp without time zone
1	1	admin	admin1	ADMIN	[null]	2018-01-16 18:04:38.185799

Query : insert into   geocms_user (id, password, type, email, reg_date)

values ('admin','admin1','ADMIN',null, now());

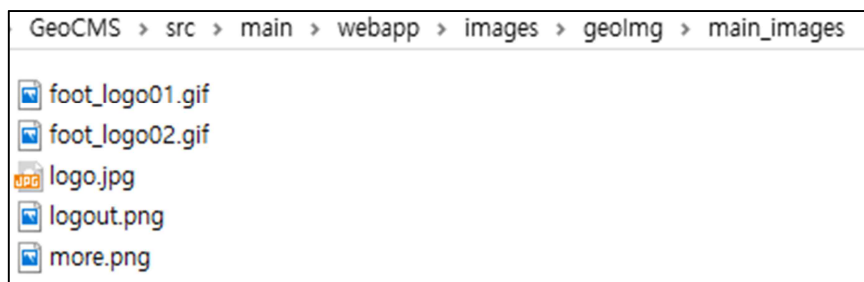● Add the above uid and data to the token table.
The aes key is automatically set and saved at login. (aes: random key for token management)

	uid bigint	aes character varying (128)	date timestamp without time zone
1	1	[null]	2018-01-17 18:10:14.489707

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

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2.7.2 Edit main logo and bottom UI

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

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

● Modify the main logo Save the name of the logo image to be changed in the GeoCMS / src / main / webapp / images / geoImg / main_images folder as logo.jpg. (Image size is 152 * 57)

● Modify the bottom UI

– Save the image to be placed in the bottom of GeoCMS / src / main / webapp / imagese / geoImg / main_images folder 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 <img> tag to the image name to be displayed first, and change the foot_logo01.git of the second <img> tag to the image name to be displayed second

– When changing the address and phone number, edit the contents of the <div> tag and save it.

```
<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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