Giga Creations Tools
“GCTools”

Created by: J. “Giga” Murphy <giga1699@gmail.com>

README File

http://www.gigacreations.net/

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About GCTools

Purpose

GCTools was designed to help web developers create dynamic, feature-rich, applications quickly. It was not intended to be a Content Management System (CMS), a web forum, a photo gallery, a login system, or anything in particular. Instead, GCTools aimed to enable developers to create anything they wanted.

This allowed GCTools to be extremely flexible, and streamlined. The developer only has to include those classes that he actually needs, not an entire library of functions that may, or may not, be needed. This is one of the reasons GCTools has been developed so extensively. The developers have put a lot of time into thinking about what it is that a developer may need, and how can we do it with the most simple implementation available.

History

The very first code of GCTools was written in early September, 2010. The initial idea was not to create a framework, but to develop a management system for an object-oriented design class at the University of Louisville. The initial code was fairly small, and only included a few classes.

At the time, PHP had not really been developed with objects in mind. Most code was small scripts that was reminiscent of old C code. Although objects existed in PHP, they had not been utilized to a large extent. This was the aim of J. “Giga” Murphy during his class... to show his class that PHP could be used as a viable object-oriented language for web development.

Following the class, development came to a halt as other classes took priority. The code was commited to a private Git repository, and was largely forgotten about until late April, 2011. At this time development ramped up.

Within a week more than 4 new classes were created, and much of the older code was optimized. GCTools also gained another developer, M. “Beanyhead” Parker. Not only was a new developer added, but the project was released under the GPL v3 license, and pushed to a public GitHub repository for others to utilize. This also enabled people in the community to add to the project, and help to improve it.

Thus, GCTools was officially born and put into open source development.

Future of GCTools

The future of GCTools at this moment is unknown. Open-source developers are still needed to help contribute to the project, and the project is still lacking some major features.

You may check on the status of GCTools at the project's website, http://www.gigacreations.net/

Contributing to GCTools

Contributions to the code of GCTools are always welcome. This is why we have released the code under the GPL v3 license. If you haven't already, feel free to fork our project on the GitHub site.

Additionally, if you'd like to become a long-term contributor to GCTools, please send us an e-mail at webmaster@gigacreations.net with some more information about you so we can add you as a contributor to the GitHub repository.

GCTools Files

cache.inc.php

Class Variables

1.) cacheDir – This defines the directory to store cached files. It must exist, and be writable.

Class Functions

1. Cache($cacheDir)
   (a) $cacheDir defines the directory to store cached files
   (b) Pre/Post Conditions:
      i. Precondition: The $cacheDir should be defined.
      ii. Postcondition: The cache class is initialized.
   (c) This function initializes the Cache class. It ensures that the cache directory exists, and is writable. If the directory does not exist, or is not writable, an exception is thrown.
2. getCacheDir()
   (a) Pre/Post Conditions:
      i. Precondition: $cacheDir should be set
      ii. Postcondition: Returns the $cacheDir, or FALSE otherwise
   (b) This function provides the user with the location of the cache directory.
3. setCacheDir($dir)
   (a) $dir defines the new location of the directory to store cached files.
   (b) Pre/Post Conditions:
      i. Precondition: $dir should be set, and a writable directory
      ii. Postcondition: Return TRUE on success, and FALSE otherwise
   (c) This function allows the user to change the location of the cache directory after the class has already been initialized.
4. createCache($file)
   (a) $file defines the path to the file to be cached
   (b) Pre/Post Conditions:
      i. Precondition: $file should be a valid file
      ii. Postcondition: Create a cache of the file and return TRUE on success, or FALSE on failure
   (c) This function allows the user to create a cache of a file.

Class example

```
<?php
require_once(“cache.inc.php”);

try {
	$cache = new Cache(“/path/to/my/cache/directory”)
}
catch (Exception $e) {
	//There was some kind of error, so handle it
}

if (!$cache->createCache(“/path/to/my/file”)) {
	//There was an error creating the cache
}

//We're done. The cached file is /path/to/my/cache/directory/file.cache.html
?>
```

computer.inc.php

Class Variables

1. id => Defines a unique ID for the computer system.
2. name => Defines the computer's name (generally the DNS name).
3. ip => Defines the IPv4 address of the computer.
4. ip6 => Defines the IPv6 address of the computer (if needed).
5. osType => Defines the type of operating system.
6. osName => Defines the operating system's name.
7. serial => Defines the serial number for the computer.
8. location => Defines a location for the computer.
9. make => Defines the make (manufacturer) of the computer.
10. model => Defines the model of the computer.
11. cpu => Defines CPU information.
12. ram => Defines RAM information.
13. hdd => Defines hard drive information.
14. licensing => Defines licensing information.
15. notes => Defines additional notes about the computer.

Class Functions

Class Example

database.inc.php

Class Variables

Database class

1.) dbType defines the type of database that is being used.

2.) dbLoc defines the location of the database. This can be an IP address, a hostname, a file location, etc

3.) dbUser defines the username used to connect to the database, if needed.

4.) dbPass defines the password used to connect to the database, if needed.

5.) dbName defines the name of the database to use.

6.) lastError defines the text of the last error that occurred, if any.

MySQL class

1.) myCon defines the MySQL connection

MSSQL class

This class is currently not functional

PGSQL class

This class is currently not functional.

SQLite class

This class is currently not functional.

Class Functions

Database class

1. (Protected) Database($loc, $user, $pass, $name, $type)
   (a) $loc defines the location of the database. This may be an IP address, a hostname or a location on the server.
   (b) $user defines the username used to login to the database.
   (c) $pass defines the password used in conjunction to the username to log into the server.
   (d) $name defines the default database to begin working with.
   (e) $type defines the type of database you will be working with.
   (f) Pre/Post-conditions:
      i. Precondition: The database location, username, password, name and type should be defined.
      ii. Postcondition: The class will set-up the variables that will be used to connect to the database, and conduct queries.

(g) This sets up the class to perform database operations.

2. hasError()
   (a) Pre/Post-conditions:
      i. Precondition: None
      ii. Postcondition: Returns TRUE if an error has occurred, and FALSE otherwise
   (b) This function will enable the user to check if an error has occurred during a database operation.
3. getLastError()
   (a) Pre/Post-conditions:
      i. Precondition: An error should have occurred.
      ii. Postcondition: Returns the error message the the database gave when the last error occurred.
   (b) This function gets the last error message provided by the database.
4. (protected) resetError()
   (a) Pre/Post-conditions:
      i. Precondition: None.
      ii. Postcondition: Any error is cleared from the class.
   (b) This function is used internally by the class to clear any previous errors that occurred.

MySQL class

1. MySQL($loc, $user, $pass, $name, $errorCallback=NULL)
   (a) $loc defines the location of the MySQL server. This can be either an IP address, or a hostname.
   (b) $user defines the username used to log into the MySQL server.
   (c) $pass defines the password used in conjunction with the username to log into the database.
   (d) $name defines the default database to use to perform database functions.
   (e) $errorCallback defines the callback function to send the error an additional way, if one occurs.
   (f) Pre/Post-conditions:
      i. Precondition: The location of the SQL server, the username, the password and the database name is given.
      ii. Postcondition: The MySQL server is connected to
   (g) This function connects to a MySQL server to perform MySQL functions. It will attempt to load the MySQL libraries, if they are not already loaded. It will also initialize it's parent Database class so you can use all the functionality of the abstract Database class.
2. (Private) connect()
   (a) Pre/Post-conditions:
      i. Precondition: The MySQL class should be set up properly.
      ii. Postcondition: The connection to the MySQL server is made, or errors or handled.
   (b) This function is the one that actually makes the connection to the MySQL database.

3. (Protected) throwError([$specialError])
   (a) $specialError defines a unique error that MySQL may not handle by itself, or an error that occurs before a MySQL connection is established
   (b) Pre/Post-conditions:
      i. Precondition: An error should have occurred
      ii. Postcondition: The error is created in the Database class with the proper information.
   (c) This function is called internally when any error has occurred during MySQL operations.
4. query($qString)
   (a) $qString defines the SQL Query string to be executed.
   (b) Pre/Post-conditions:
      i. Precondition: A query should be presented
      ii. Postcondition: The class will attempt to execute the query, and handle any errors.
   (c) SECURITY NOTE:
      i. The user is responsible for handling any sort of SQL injection type attacks. This function DOES NOT handle this by itself.
   (d) This function takes a SQL query, and tries to execute it on a MySQL database. It will also handle any errors that occur during the execution of the query.
5. changeDB($dbName)
   (a) $dbName defines the new database to use for queries.
   (b) Pre/Post-conditions:
      i. Precondition: A database name is given
      ii. Postcondition: The class attempts to change the database to use for MySQL operations. Returns TRUE on success, and FALSE on failure.
   (c) This function changes the database that is used to execute queries.
6. escapeString($string)
   (a) $string defines a string to escape using MySQL
   (b) Pre/Post-conditions:
      i. Precondition: A string should be given
      ii. Postcondition: The string is escaped using the current MySQL connection.
   (c) This function escapes a string to be safe in a MySQL query.
7. connected()
   (a) Pre/Post-conditions:
      i. Precondition: None
      ii. Postcondition: Returns TRUE if the MySQL connection is active, and FALSE otherwise
   (b) This function informs the user if the MySQL connection is still active, or not.
8. reconnect()

(a) Pre/Post-conditions:

i. Precondition: None

ii. Postcondition: Will close any current connection, and re-establish a connection to the MySQL server

(b) This function is used to reconnect to a MySQL server. It is used internally if the MySQL connection is lost, and can be used by the user to reconnect using the given credentials at initialization time.

MSSQL class

This class is not currently functional.

PGSQL class

This class is not currently functional.

SQLite class

This class is not currently functional.

Class example

MySQL class

```
<?php
require_once(“database.inc.php”);

try {
	$mysql = new MySQL(“hostname”, “username”, “password”, “database”);
}
catch (Exception $e) {
	//Something went wrong
	echo $mysql->getLastError();
}

//Let's do a query
$mysql->query(“SELECT * FROM `users` WHERE `username`='” . $mysql->escapeString($username) . “'”);

//Check if we're still connected
if (!$mysql->connected())
	$mysql->reconnect();
```

?>

MSSQL class

This class is not currently functional.

PGSQL class

This class is not currently functional.

SQLite class

This class is not currently functional.

error.inc.php

Class Variables

1. errorFrom => Defines the e-mail address to display in the “From:” header when sending an error e-mail
2. errorTo => Defines who error e-mails should be sent to
3. errorSubject => Defines the subject for the e-mail when sending error e-mails

Class Functions

1. Error($from, $to)
   (a) $from => Defines the from address for sending e-mails
   (b) $to => Defines the to address for sending e-mails
   (c) Pre/Post-conditions:
      i. Precondition: The from, and to, address should be defined
      ii. Postcondition: The Error class is set-up.
   (d) This is the constructor for the Error class. It sets up the class to be able to send error messages via e-mail to an individual, or group.
2. setErrorSubject($errorSubject)
   (a) $errorSubject => Defines the subject line for e-mails sent through this class
   (b) Pre/Post-conditions:
      i. Precondition: None
      ii. Postcondition: The subject line is set
   (c) This function sets the subject line for all e-mails sent via this class.
3. sendError($errorMessage)
   (a) $errorMessage => Defines the body of the e-mail
   (b) Pre/Post-conditions:
      i. Precondition: $errorMessage should be defined
      ii. Postcondition: An e-mail is sent to $to, from $from and containing the body $errorMessage
   (c) This function sends an e-mail to the defined “To:” address(es) with the given error message. This function may be used as the callback function in the MySQL class (as well as others).

Class Example

```
<?php
require_once(“error.inc.php”);


try {
```

```
	$error = new Error(“to@errormessage.com”, “from@errorsfrom.com”);
}
catch (Exception $e) {
	//Handle class init error here
}

$error->setErrorSubject(“THERE WAS AN ERROR!”);

$error->sendError(“There was an error in a script. Please go take a look at it.”);

?>
```

file.inc.php

Class Variables

1. fileLoc => Defines the location of the file on the system.
2. fileName => Defines the name of the file, to include any extension.
3. fileMIMEType => Defines the MIME type of the file.
4. fileBuffer => Defines a buffer that contains the file data.
5. fileSize => Defines the size of the file

Class Functions

1. File($file)
   (a) $file => Defines the location of the file on the system.
   (b) Pre/Post-conditoins:
      i. Precondition: $file should be defined, and an actual file on the system.
      ii. Postcondition: The File class is initialized, and ready for use by the user.
   (c) This function initializes the class, and prepares it for use by the user.
2. (private) addFile($file)
   (a) $file => Defines the location of the file on the system.
   (b) Pre/Post-conditions:
      i. Precondition: $file should be defined, and an actual file on the system.
      ii. Postcondition: Pull all needed data about the file, and fill class variables.
   (c) This function is the core function to this class. It is what actually pulls all the information about the file, and fills the class variables.
3. getFileName()
   (a) Pre/Post-conditions:
      i. Precondition: fileName should be set
      ii. Postcondition: Return the file name, or FALSE otherwise
   (b) This function returns the file name to the user.
4. getMIMEType()
   (a) Pre/Post-conditions:
      i. Precondition: fileMIMEType should be defines
      ii. Postcondition: Return the file's MIME type, or FALSE otherwise
   (b) This function provides the MIME type of the file to the user. It can be useful for limiting file uploads to particular MIME types, or utilizing it when sending an e-mail with an attachment.
5. getSize()

(a) Pre/Post-conditions:
    i. Precondition: fileSize should be defined
    ii. Postcondition: Return the file's size (in bytes), or FALSE otherwise
(b) This function provides the user with the file size, in bytes, of the file that has been loaded into the class.

6. getFile()
(a) Pre/Post-conditions:
    i. Precondition: fileBuffer should be defined
    ii. Postcondition: Return the binary file data, or FALSE otherwise
(b) This function provides the binary data to the user, which is great for attaching a file in an e-mail.

7. hadError()
(a) Pre/Post-conditions:
    i. Precondition: None
    ii. Postcondition: Returns TRUE if an error occurred, or FALSE otherwise
(b) This function enables the user to determine if an error occurred during initialization of the class.

8. moveFile($newFile)
(a) $newFile => Defines the new location and/or file name of the file
(b) Pre/Post-conditions:
    i. Precondition: $newFile should be set
    ii. Postcondition: Move the file, and return TRUE if it was a success, or FALSE otherwise
(c) This function allows a user to move a file on the system.

Class Example

```
<?php

require_once(“file.inc.php”);

try {
	$theFile = new File(“/loc/of/file/filename.txt”);
}
catch (Exception $e) {
	//Handle exceptions here
}

//Print information about the file
```

```
echo “File name: “ . $theFile->getFileName() . “<br>\n”;
echo “File size: “ . $theFile->getFileSize() . “ bytes<br>\n”;
echo “File MIME type: “ . $theFile->getMIMEType() . “<br>\n”;

?>
```

mail.inc.php

Class Variables

Attachment Class

There are currently no variables in this class. It is being phased out by the File class in file.inc.php.

EMail class

1. $mailTo = > Defines an array of “To:” address for e-mails
2. $mailCC => Defines an array of “CC:” address for e-mails
3. $mailBCC => Defines an array of “BCC:” addresses for e-mails
4. $mailFrom => Defines the “From:” address for e-mails
5. $mailReplyTo => Defines the “ReplyTo:” address fro e-mails
6. $mailSubject => Defines the subject of the e-mail
7. $mailMessage => Defines the body of the message
8. $mailAttachments => Defines an array of Attachments for the e-mail
9. $mailAddlHeaders => Defines any additional headers to be sent with the e-mail
10. (private)$mailSplit => Defines a splitting string that is used when sending e-mails with attachments.

Class Functions

Attachment Class

NOTE: This class is being phased out by the File class in file.inc.php.

1. Attachment($file)
   (a) $file => Defines a location, and file name, of a file on the system.
   (b) Pre/Post-conditions:
      i. Precondition: $file should be a file on the system.
      ii. Postcondition: Create a File class
   (c) This function is just an implementation of the File class. It was the predecessor to the File class, and has only been kept for backwards compatibility.
2. isError()
   (a) This function is again only for backwards compatibility. Please refer to the File class in file.inc.php.

EMail class

1. Email()
   (a) Pre/Post-conditions:

i. Precondition: None

ii. Postcondition: Set-up the Email class for use by the user

(b) This function prepares the EMail class for use by the user. It initializes all the variables needed.

2. addTo($address)

(a) $address => Defines a valid e-mail address

(b) Pre/Post-conditions:

i. Precondition: A valid e-mail address is supplied

ii. Postcondition: Return TRUE if the address was added, and FALSE otherwise

(c) This function add an e-mail address to the list of “To:” addresses.

3. (private) formatTo()

(a) This function is used to properly format the “To:” addresses for sending an e-mail using PHP's mail() function.

4. addCC($address)

(a) $address => Defines a valid e-mail address

(b) Pre/Post-conditions:

i. Precondition: A valid e-mail address is supplied

ii. Postcondition: Return TRUE if the address was added, and FALSE otherwise

(c) This function add an e-mail address to the list of “CC:” addresses.

5. (private) formatCC()

(a) This function is used to properly format the “CC:” addresses for sending an e-mail using PHP's mail() function.

6. addBCC($address)

(a) $address => Defines a valid e-mail address

(b) Pre/Post-conditions:

i. Precondition: A valid e-mail address is supplied

ii. Postcondition: Return TRUE if the address was added, and FALSE otherwise

(c) This function add an e-mail address to the list of “BCC:” addresses.

7. (private) formatBCC()

(a) This function is used to properly format the “BCC:” addresses for sending an e-mail using PHP's mail() function.

8. setFrom($address)

(a) $address => Defines a valid e-mail address

(b) Pre/Post-conditions:

i. Precondition: A valid e-mail address is provided

ii. Postcondition: The “From:” address is set

(c) This functions enables the user to set the “From:” address for e-mails sent through this class.

9. getFrom()
   (a) Pre/Post-conditions:
      i. Precondition: The “From:” address should be set
      ii. Postcondition: Return the “From:” address, or FALSE otherwise
   (b) This function allows the user to see what the currently set “From:” address is set to. If one is not set, the function returns FALSE.
10. setReplyTo($address)
   (a) $address => Defines a valid e-mail address
   (b) Pre/Post-conditions:
      i. Precondition: A valid e-mail address is provided
      ii. Postcondition: The “Reply-to:” header is set
   (c) This function enables the user to set the “Reply-to:” header for e-mails set out using this class. This allows the user to define a specific “From:” address, but have the default reply action go to the “Reply-to:” address.
11. getReplyTo()
   (a) Pre/Post-conditions:
      i. Precondition: The “Reply-to:” address should be set
      ii. Postcondition: Returns the “Reply-to:” address, or FALSE otherwise
   (b) This function allows the user to know the currently set “Reply-to:” address. If one is not currently set, the function will return FALSE.

Class Example

navigation.inc.php

Class Variables

Class Functions

Class Example

photo.inc.php

Class Variables

Class Functions

Class Example

security.inc.php

Class Variables

Class Functions

Class Example

session.inc.php

Class Variables

Class Functions

Class Example

user.inc.php

Class Variables

Class Functions

Class Example

Credits

Code Contributors

1.) M. “Beanyhead” Parker
    1. E-Mail: beanyhead@gmail.com
    2. Website: http://www.nomits.com/
2.) R. Rios

Change Log

This is in the works

License

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GPL v3 License

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Preamble

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make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

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1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

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