CONTROL OS FROM WEB INTERFACE

Execute System API Calls as well as general operations of an OS From Web Framework

Group No. 3

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MODULES

* Execute System Commands
* Traversing and Creating Directories
* Searching for files as well as folders
* File Upload and Download
* Create and Edit Files
* Create PDF Files
* Full Database Administration
* String Encoding and Decoding

Prerequisites

* PHP
* HTML
* CSS
* MySQL
* Geany Text Editor
* Apache 2.0 HTTP Server
* OS : Windows and Linux

Platform

* The aforesaid modules can also be executed on both Linux and Windows platform.

Execute System Commands

* Networking Commands
* System Administrating Commands
* File System Commands
* Process Administrating Commands
* Server Side Commands

Traversing and Creating Directories

* Moving through the different folders graphically and viewing directory as well as file contents.

* Create new directories on the server.

File Upload And Download

* Uploading and Downloading files from user end by http downloading system.

Create and Edit Files

* Creating new files in any format specified by their extensions.
* Edit any file already present on the server.
* Permissions of any file can be changed.

Create PDF Files

* We can even create PDF Files from this web interface
* In the PDF we can embed images as well as HTML and even interactive form fields.

Full Database Administration

* Creating, Deleting and Updating database, tables …
* Dumping database.
* Processing SQL Queries.

String Encoding and Decoding

* Encode and Decode strings in different encryption formats (MD5, BASE64, sha1, crypt, crc32).
* Encode and Decode URLs.
* Encode and Decode Decimal to Hexadecimal number system.

Next Day Planning

* Template Designing
* Directory Traversal in Web GUI
* Embedding images by not giving source from any different website or from local web directory

Template Designing Module (By Amit Kumar Mondal)

* For designing the proper template that will suit all the needs of executing all the modules, we have used normal HTML 5.0 and embedded CSS.

* We have used Kompozer Tool for implementing HTML 5.0 tags as well as CSS.

* We have used Geany Text Editor for implementing all the aforesaid phenomena.

Directory Traversal (Module By Anamika Bedi)

* In this section we have implemented the basic concept of system administration. We have implemented this module what we can find in the host OS.

* We have even implemented a Graphical User Interface(GUI) for executing this module.

Directory Traversal Module Explanation

* In this section we have used general concept of File Handling.
* In this section we have used a file handling pointer for accessing the files as well as directories and we have used directory operations such as opendir(), readdir() for traversing through the directories and implemented a Global Array for storing the directory records.

Continued.

* For displaying the directories in ascending order we have implemented sort() function as well.
* We can move through the directories up to root (/) directory and can handle the file pointer as well for displaying its contents also.

New Method for Displaying Image Module (By Amit Kumar Mondal)

* A new technique has been implemented for displaying images in this site.
* We didn't take the source for implementing images for this site.(no URL from different site or local directory)
* Implementation is based on base64 encoding and decoding technique.
* The toolbar images as well as directory images are encoded in base 64 encoding using base64 encoder.

Continued.

* And we have stored the converted encoding in an associative array.

* Whenever we need specific images to be displayed, only the base64_decode() function comes to action.

* This function decodes the encoding and displays the images in their respective places as well.

Next Day Planning

* SQL Administration in a web interface just like what we can find in phpMyAdmin
* Displaying and killing running system processes in web GUI.
* Making directories and displaying in the previous module (Traversing Directory in Web GUI)
* Reading file contents only

SQL Web Interface module (By Amit Kumar Mondal)

* In this project, we have even implemented SQL Web Interface like what can be found in phpMyAdmin. From this module we can develop tables as well as databases easily and even we can execute SQL queries quickly. This is mainly a Graphical User Interface of MySQL which is hardcoded using PHP. For developing this section we have implemented the global functions of PHP like mysql_list_dbs() , mysql_create_db(), mysql_list_tables, mysql_query().

Continued

* Even in some sections, we have implemented MySQLi database rather using MySQL. MySQLi is more functional than of MySQL.This is the main reason of implementing mysqli for some parts of this module.

Making Directories module (By Akash Patra)

* In this module we have implemented system API call mkdir for creating directories and for patching the created directory to be shown in the upper GUI directory traversal, we have implemented some more processing to that previous module to check whether any directory is created or not. If that module find it true, then the module displays the created directory in that GUI otherwise not.

Reading File Contents (Module by Sahashrangshu Mohanty)

* This module is responsible for reading the file contents using PHP Function file_get_contents()
* This module is very much effective if the processing script is found to be chmodded to 777 (R-W-X)
* If it is found to be true, then any contents from any file can be displayed like we can get contents from /etc/passwd.

Displaying & Killing System Processes (Module By Mudit Khemka)

* This is done using system API call which is inbuilt in PHP.
* POSIX Functions are implemented here for displaying as well as killing system processes.
* The posix function call for killing system process
* ```php
  <?php
    $running=posix_kill($pid, 0);
    if(posix_get_last_error()==1)
      $running=true;
  ?>
  ```

Continued.

* The POSIX thread libraries are a standards based thread API for C/C++. It allows one to spawn a new concurrent process flow. It is most effective on multi-processor or multi-core systems where the process flow can be scheduled to run on another processor thus gaining speed through parallel or distributed processing. Threads require less overhead than "forking" or spawning a new process because the system does not initialize a new system virtual memory space and environment for the process.

Continued

* For displaying system process, we have executed the command "ps aux && ps –e " and displayed the output in tabular form.

* This function is used for getting the Process ID

* <?php
echo posix_getpid();   ?>

Next Day Planning

* Making as well as editing files
* Executing system commands
* Direct directory traversal
* Encoding module (Multiple Encoders)
* Uploading files to the working directory
* Host OS Security Info Retrieval

Making and Editing Files Module(By Akash Patra)

* This module is developed for proper administration of file handling.
* From this module we can have that much permissibility for administrating the file which are stored in the "/" file system.
* We can even create new files with mentioning their extensions as well.
* In this module, we have implemented normal file_get_contents() , fgets() and fread() function for having the contents from the files which are previously stored.

Continued.

* For editing and creating files, we have implemented file_put_contents() and fwrite() functions.

Direct Directory Traversal Module (By Anamika Bedi)

* As per our previous directory traversal module, we can traverse through the directories but not directly.

* This module is meant for traversing through the directories directly.

* Suppose we are in /var/www and we want to go to /home/amit/Desktop/Share. Then we need to write only to which directory we want to traverse, and just ENTER.We will be there directly.

Encoding Module (By Mudit Khemka)

* This is a simple module. We have taken the advantage of implementing encoding and encrypting functions in a Web GUI format.

* From this module we can have the opportunity of encrypting as well as decrypting string in Base64, MD5, CRC32, SHA URL Encoding formats.

System Command Execution Module (By Amit Kumar Mondal)

* This is the most required module for having the proper success of this project.

* From this module we can execute any system commands from this Web GUI.

* We have implemented POSIX System API call for this module.

* And the system() and shell_exec() API call for executing shell scripts as well as system commands.

Continued.

* As we know that php is totally derived from C Libraries and after then it is totally modified to its external libraries, so every functions from C Library has come to php libraries.

* We implemented system() function which we can also find in C/C++.

* This function is used for executing system commands of Host OS (Windows/Linux)

Uploading Module (By Shahashrangshu Mohanty)

* This is the module for uploading files to the current working directory. This module also supports uploading files to anywhere in the "/" file system.
* This is not a ftp upload. This module has been created by implementing HTTP Upload mechanism.
* This module first checks if the current script is given permission 777 then it can execute this uploading mechanism as a root user.

Host Security Info Module(By Amit Kumar Mondal)

* This module is implemented under the base of System Command Execution module.
* This module can retrieve the proper information of firewalls, cURL, wget, gcc, perl, apache version, MySQL version, RAM, httpd.conf, lynx, hosts, /dev and so on.
* This is really helpful as for getting such info we don't need to execute commands any more. Just a single click can retrieve these infos.

PDF File Creation [HTML Embedding] Module (By Amit Kumar Mondal)

* This module is really useful for any one as pdf creator is so costly.
* From this module, one can easily create PDF Files from this web interface
* Fpdf libraries are used for creation of pdf files.
* Fpdf are general libraries for encoding pdf files.
* In this module we can write HTML codes in the provided text area and that will be shown to the pdf file.

PDF File Creation [Image Embed] module (By Amit Kumar Mondal)

* In this section we have implemented image to be embedded in the pdf file

* We have to give the source of the image and it will be automatically cropped to a specific size and will be embedded in the pdf file.

Next Day Planning

* Searching for specific files and folders
* File Permission viewing as well as changing like CHMOD
* Cut, Copy and Paste Method Implementation for files
* Chat with the Framework Users

Searching for Files and Folders Module (By Mudit Khemka)

* In this module we have demonstrated the general method of regular expression using preg_match() and preg_match_all().

* From this module we can search through the directory as well as files using names.

File Permission Change Module (By Amit Kumar Mondal)

* This module is platform independent.From this module we can change the permission of file as well as directories.

* We have not used system function call to implement thia module.We have implemented hexadecimal notation changing scheme for implementing CHMOD in windows as well as in Linux.

Cut, Copy and Paste Module (By Anamika Bedi)

* This is really a superb module that can make this web interface really friendly for the end user.

* In this module we can cut, copy and paste files wherever we want.

Chat Module (By Amit Kumar Mondal)

* This module is developed using simple AJAX and PHP.
* This module is developed as there can be different users who can contact each other for server configuration and get help.
* This is really helpful for contacting administrators as well.