THE COMMON GATEWAY INTERFACE

The **Common Gateway Interface** (**CGI**) is a standard (see RFC3875: CGI Version 1.1) that defines how webserver software can delegate the generation of webpages to a console application. Such applications are known as CGI scripts; they can be written in any programming language, although scripting languages are often used. In simple words the CGI provides an interface between the webservers and the clients.

Purpose

The task of a webserver is to respond to requests for webpages issued by clients (usually web browsers) by analyzing the content of the request (which is mostly in its URL), determining an appropriate document to send in response, and returning it to the client.

If the request identifies a file on disk, the server can just return the file's contents. Alternatively, the document's content can be composed on the fly. One way of doing this is to let a console application compute the document's contents, and tell the web server to use that console application. CGI specifies which information is communicated between the webserver and such a console application, and how.

The webserver software will invoke the console application as a command. CGI defines how information about the request (such as the URL) is passed to the command in the form of arguments and environment variables. The application is supposed to write the output document to standard output; CGI defines how it can pass back extra information about the output (such as the MIME type, which defines the type of document being returned) by prepending it with headers.

CGI linkage

CGI programs often are stored in a directory named cgi-bin
- Some CGI programs are in machine code, but Perl programs are usually kept in source form, so perl must be run on them
- A source file can be made to be “executable” by adding a line at their beginning that specifies that a language processing program be run on them first

For Perl programs, if the perl system is stored in
/usr/local/bin/perl, as is often is in UNIX
systems, this is
#!/usr/local/bin/perl -w

- An HTML document specifies a CGI program with the hypertext reference attribute, href, of an anchor tag, <a>, as in

```
<a href =
"http://www.cs.uccs.edu/cgi-bin/reply.pl>"
Click here to run the CGI program, reply.pl
</a>
```

```
<!-- reply.html - calls a trivial cgi program
-->
<html>
<head>
<title>
HTML to call the CGI-Perl program reply.pl
</title>
</head>
<body>
This is our first CGI-Perl example
<a href =
"http://www.cs.ucp.edu/cgi-bin/reply.pl">
Click here to run the CGI program, reply.pl
</a>
</body>
</html>
```

- The connection from a CGI program back to the requesting browser is through standard output, usually through the server
- The HTTP header needs only the content type, followed by a blank line, as is created with:

```
print "Content-type: text/html \n\n";
```

```
#!/usr/local/bin/perl
# reply.pl – a CGI program that returns a
# greeting to the user
print "Content-type: text/html \n\n",
"<html> <head> \n",
"<title> reply.pl example </title>",
" </head> \n", "<body> \n",
"<h1> Greetings from your Web server!",
" </h1> \n </body> </html> \n";
```

Source : http://elearningatria.files.wordpress.com/2013/10/cse-vii-programming-the-web-10cs73-notes.pdf