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(54) **SYSTEMS AND METHODS FOR DETECTING AND DISABLING MALICIOUS SCRIPT CODE**

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(57)

ABSTRACT

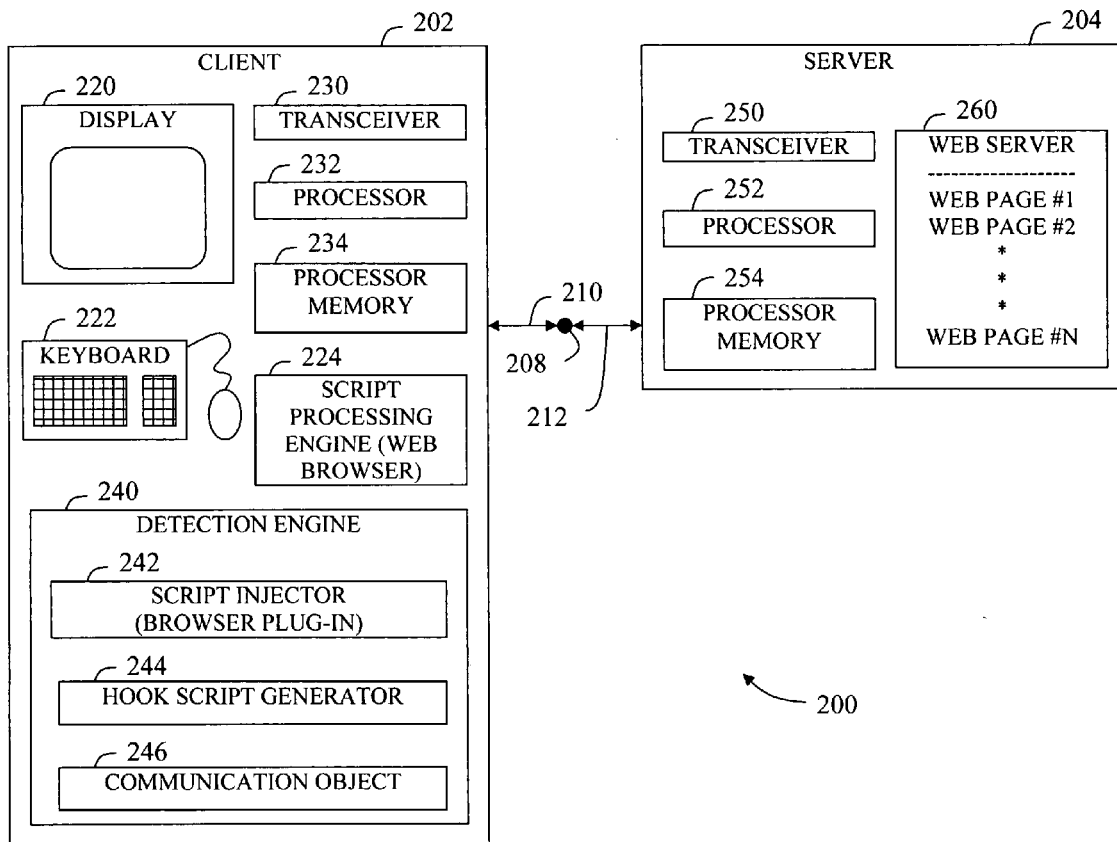
In accordance with at least one embodiment of the present invention, a device for receiving and processing data content having at least one original function call includes a hook script generator and a script processing engine. The hook script generator is configured to generate a hook script having at least one hook function. Each hook function is configured to supersede a corresponding original function. The script processing engine is configured to receive and process a combination of the hook script and the data content. The hook function corresponding to the data content original function is executed when the original function is called. The hook function provides a run-time detection and control of the data content processing.

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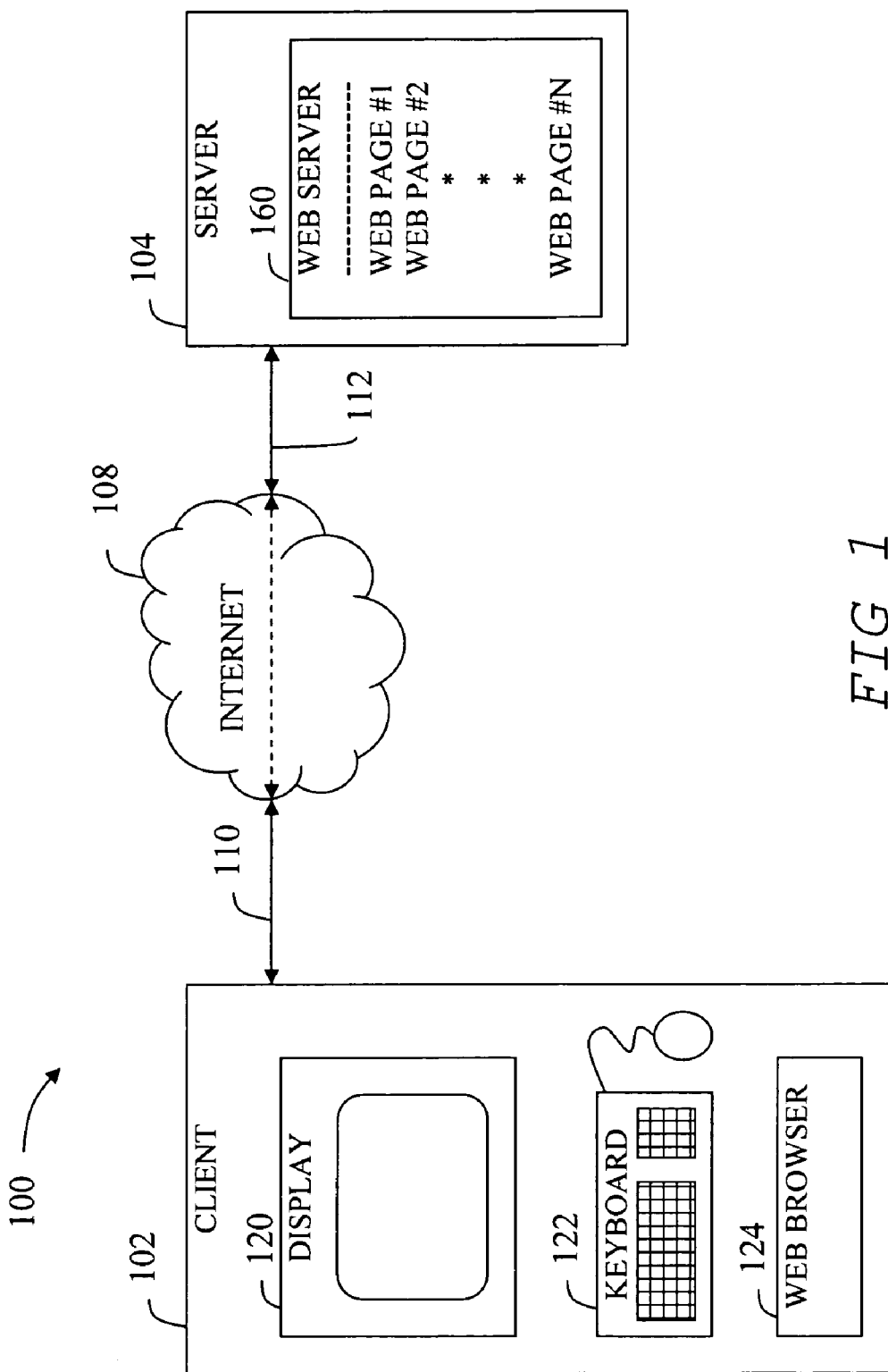


FIG 1
- PRIOR ART -

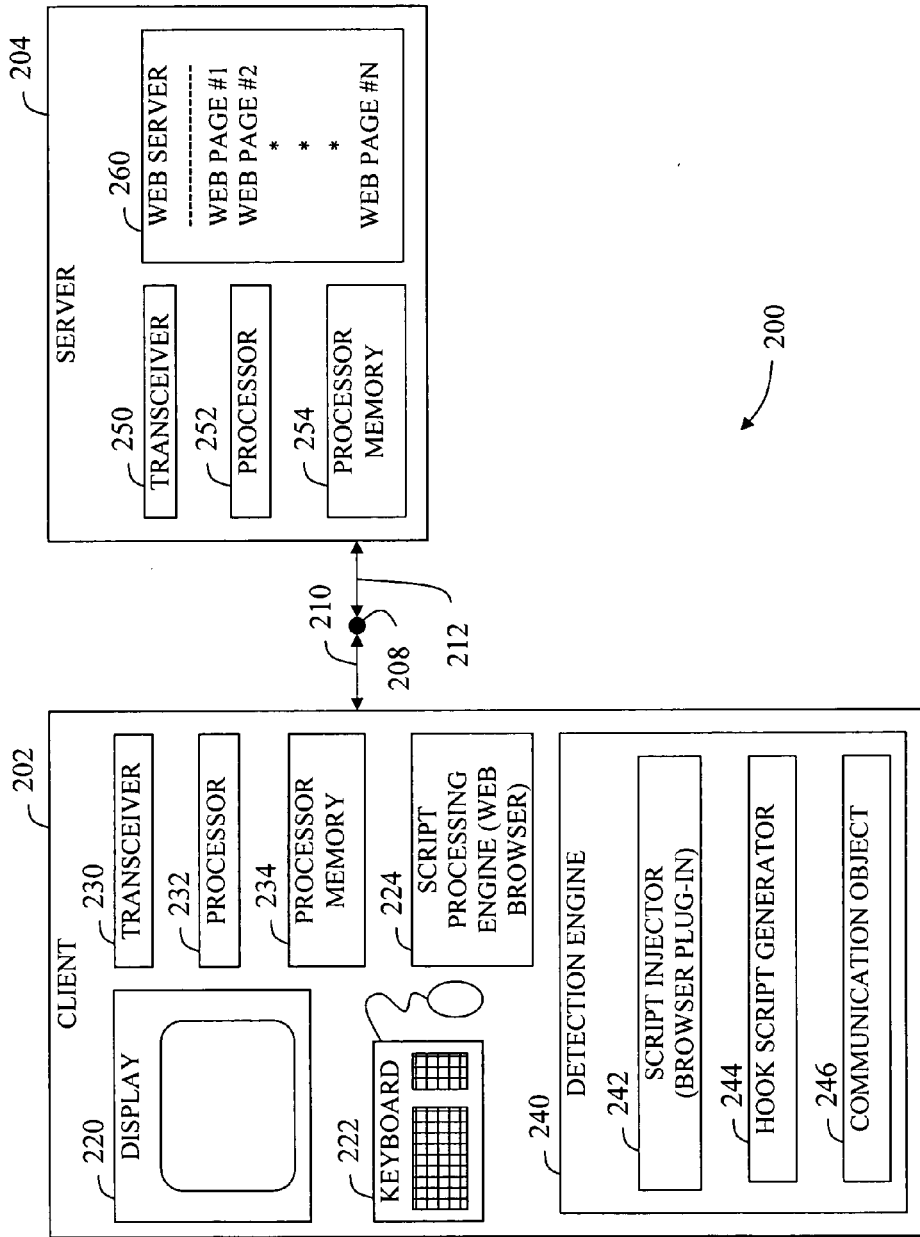


FIG 2

```
// Original Script
<SCRIPT language="JavaScript">
var Req;
Req = new XMLHttpRequest("Microsoft.XMLHTTP");
// Open the request object with MKCOL and specify that it will be sent asynchronously.
Req.Open("MKCOL", folderURL, false);
</SCRIPT>
```

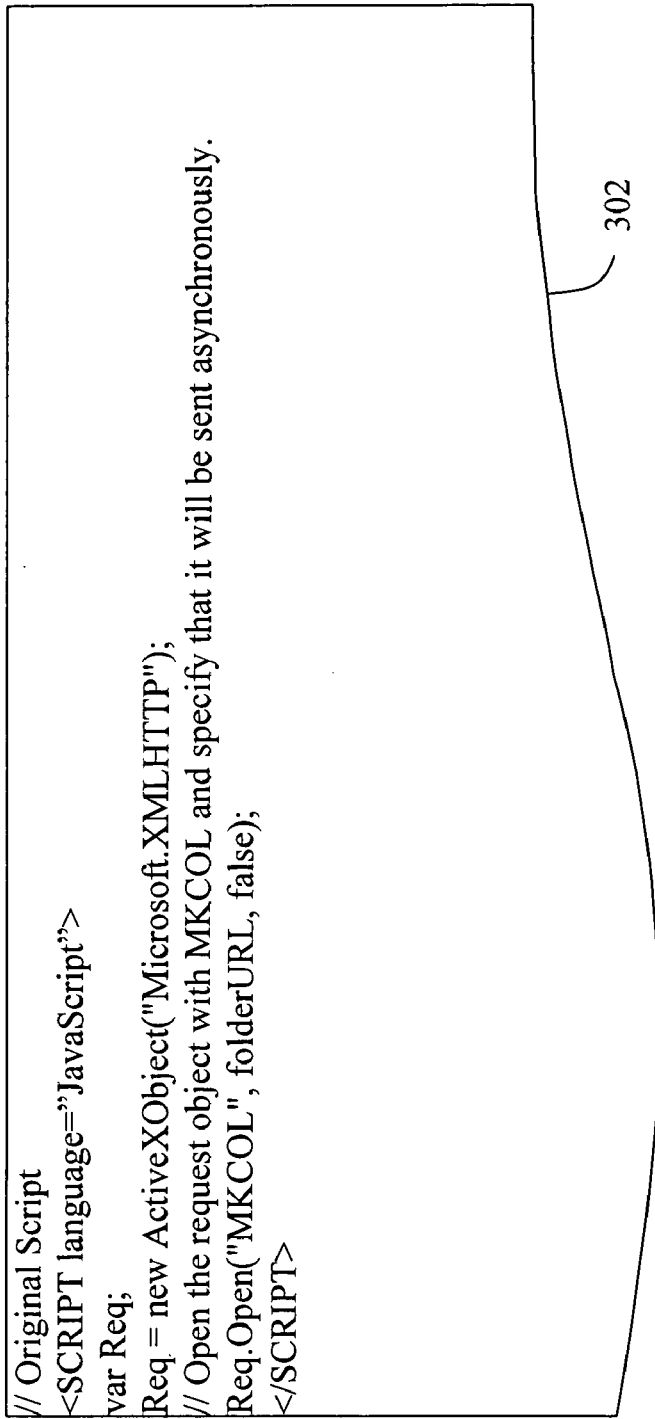


FIG 3

```

// Generated Hook Script (Highly simplified example)
<SCRIPT language="JavaScript">
realAXO = ActiveXObject;
function myXMLObject(realconstructor) {
    // Generated code (create Microsoft.XMLHTTP wrapper object and return it)
}
function HookedActiveXObject(objname) {
    // Security checks go here
    if (objname == "Microsoft.XMLHTTP") {
        return new myXMLObject(realAXO);
    } else {
        return realAXO(objname); // if no more security checks are needed
    }
}
ActiveXObject = HookedActiveXObject;
</SCRIPT>
// Original Script
<SCRIPT language="JavaScript">
var Req;
Req = new ActiveXObject("Microsoft.XMLHTTP");
// Open the request object with MKCOL and specify that it will be sent asynchronously.
Req.Open("MKCOL", folderURL, false);
</SCRIPT>
    
```

FIG 4

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