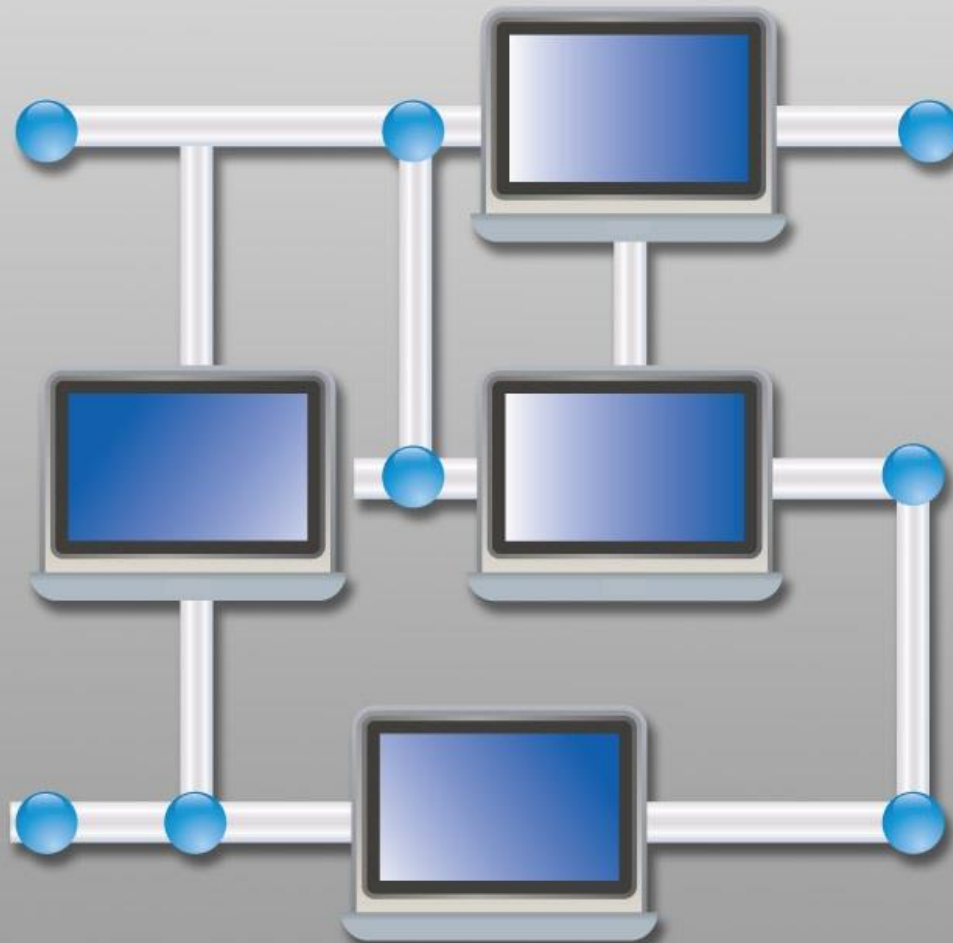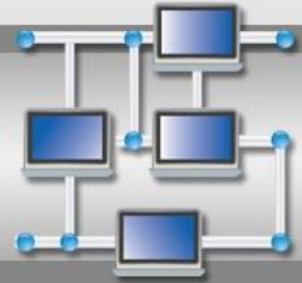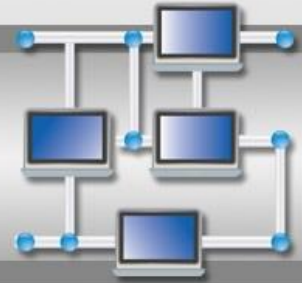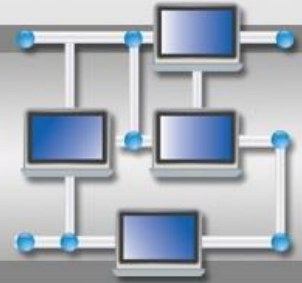# HTTP Server

Requirements

- Implement part of the HTTP protocol.
  - Threaded (multiple clients)
  - GET only.
  - Error handling
    - Page Not found
    - Bad Request
    - Redirection
    - Internal Server Error
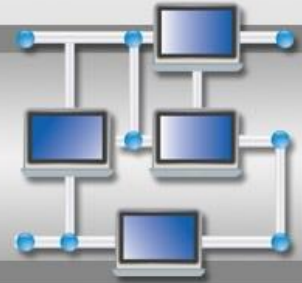
Starting the Server

- Accept multiple clients by starting a thread for each accepted connection.

- Keep on accepting requests from the remote client until the client closes the socket (sends a zero length message)

- For each received **request**, the server must reply with a **response.**

Receiving Request

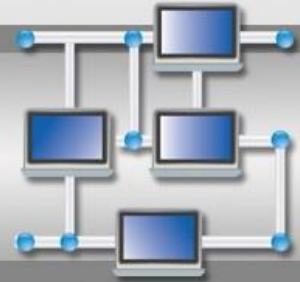- The received request must be a valid HTTP request, else return 400 Bad Request
  - Check single space separating the request line parameters.
    - Method URI HTTPVersion
  - Check blank line separating the header lines and the content, even if the content is empty
  - Check valid URI
  - Check at least request line and host header and blank lines exist.
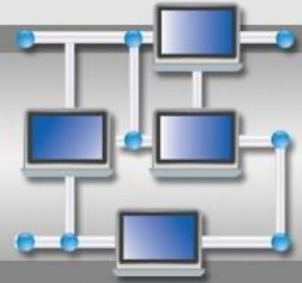
Response Headers

- The response should include the following headers:
  - Content-Type:
    - We will use only text/html
  - Content-Length:
    - The length of the content
  - Date:
    - Current DateTime of the server
  - Location:
    - Only if there is redirection.
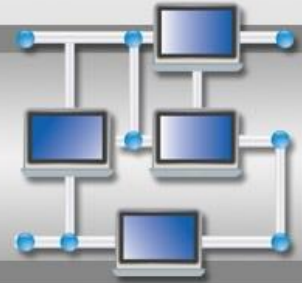
Handling Request

- Using Configuration.RootPath, map the URI to the physical path
  - Example: configuration.RootPath= "c:\intepub\wwwroot\fcis1" and URI = "/aboutus.html" then physical path= "c:\intepub\wwwroot\fcis1\aboutus.html"

Redirection

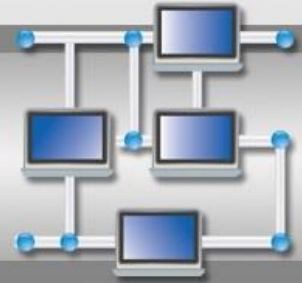- If the URI exists in the configuration.RedirectionRules, then return 301 Redirection Error and add location header with the new redirected URI.

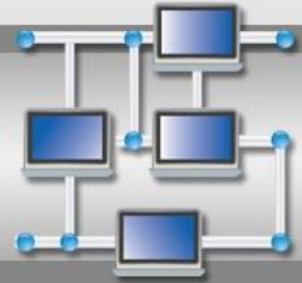- The content should be the content of the static page "redirect.html"

Not Found

- If the physical file is not found return 404 Not Found error.

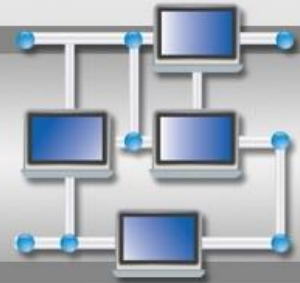- The content should be the content of the static page "Notfound.html"

Bad Request

- If there is any parsing error in the request, return 400 Bad Request Error.

- The content should be loaded with the content of the static page "BadRequest.html"

Internal Server Error

- If there is any unknown exception, return 500 Internal Server Error.

- The content should be the content of the static page "InternalError.html"

- Run the server
- Try the following URIs in the web browser:

http://localhost:1000/aboutus2.html
should display aboutus2.html page

http://localhost:1000/aboutus.html
should display aboutus2.html (redirection)

http://localhost:1000/main.html
should display main page

http://localhost:1000/blabla.html
should display 404 page.