**Summary**

Reads an input and determines if it is a valid url and breaks it down into parts to output. If invalid, it points out what parts are incorrect.

**Input**

{} denotes optional

Accepts a 1 line input with no spaces in the form of a url in the form of protocol://domain{:port}/path{?parameters}.

**Returns**

If valid url given conditions:

1. Protocols: only accept http, https, ftp, ftps.

2. Domain: must be of the form <x>.<y>.<z>, and z must be one of com, net, edu, biz, gov.

Note: strictly speaking this component is called ‘host’.

3. Port: starts with the ‘:’ character and a number between 1 to 65535), e.g. :8080. This component is optional.

4. File path: must start with a ‘/’ and end with ‘.html’ or ‘.htm’.

5. Parameters: starts with the ‘?’ character, e.g. ?name=Bob. This component is optional.

[] denotes input values

*Outputs*

Protocol: [url protocol]

Domain: [url domain]

Port: [url port] (or N/A with none)

File path: [url path]

Parameters: [url parameters] (blank if none)

If invalid url given above conditions:

*Outputs*

(lines do not appear if that part is valid)

Protocol: [url protocol] is not a valid protocol

Domain: [url domain] is an invalid domain

Port: port number must be between 1 and 65535

File path: [url path] is not a valid path

(Parameters cannot be invalid)