

CS371

Web Application Programming

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Prereqs

- Fluent in Java
 - You should be able to solve most problems at codingbat.com in a couple of minutes. *If you struggle in solving these problems, then **you are not ready** to take this course*
- Self Learner
 - Proficient in high-level programming concepts, and able to teach yourself the basics of other C-like languages (PHP, JavaScript)
- Good understanding of OO techniques: inheritance, methods, interface, ...
 -



What is Web Programming?

Web Apps
vs.
“Other Apps”

Web Apps vs. Web Pages

Unique Characteristics of *WebApps*?

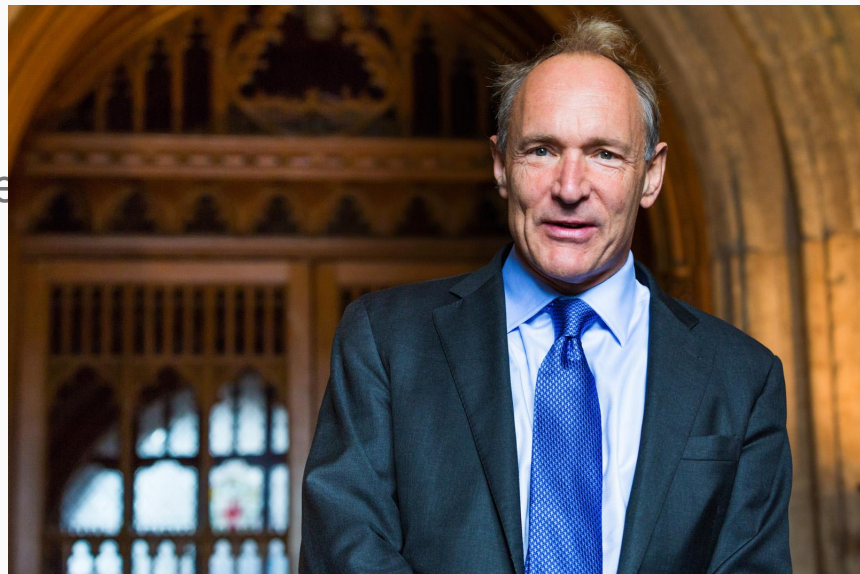
Categories of “Other Apps”

- Desktop Applications
- Mobile Applications
- Embedded Programs

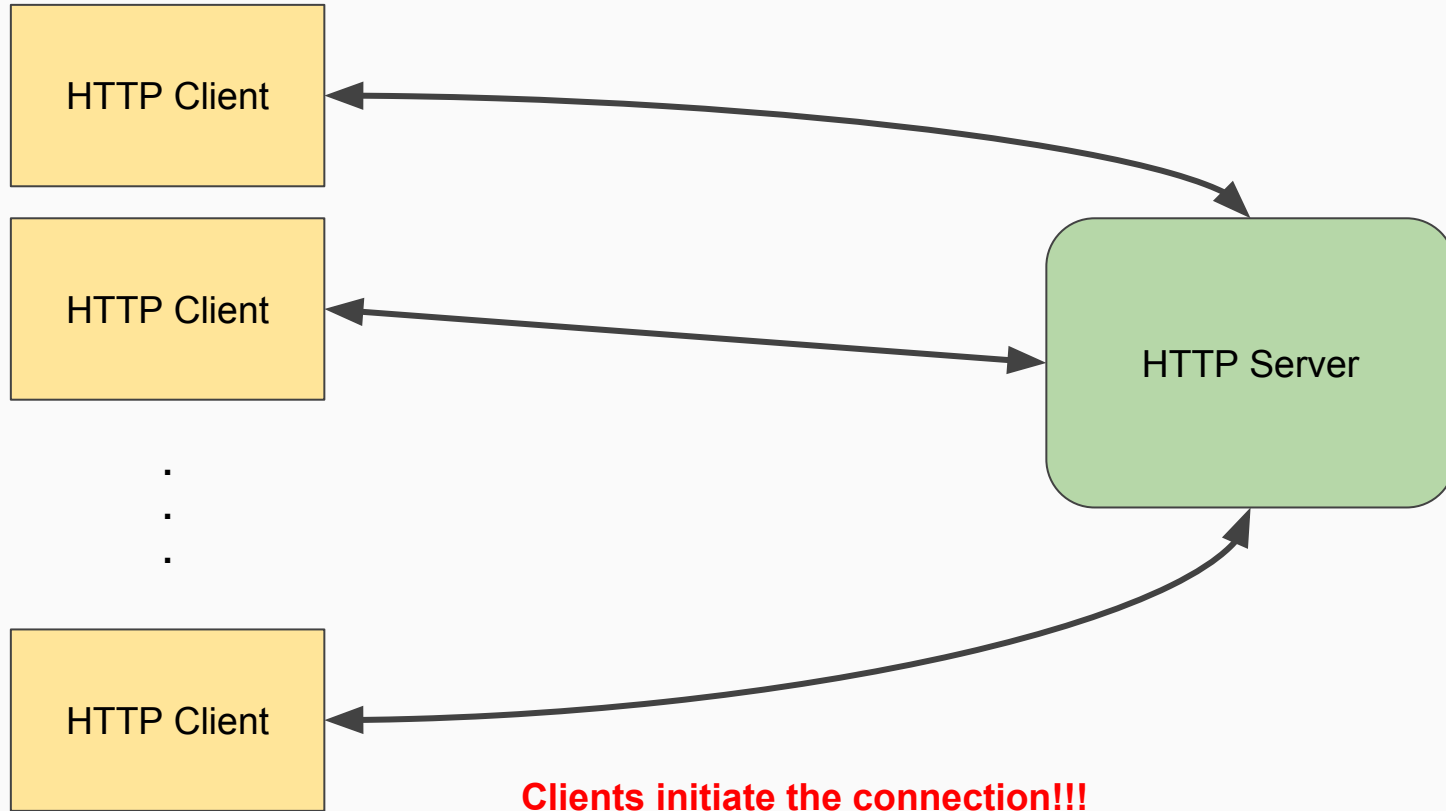
Interactive Questionnaires

HTTP

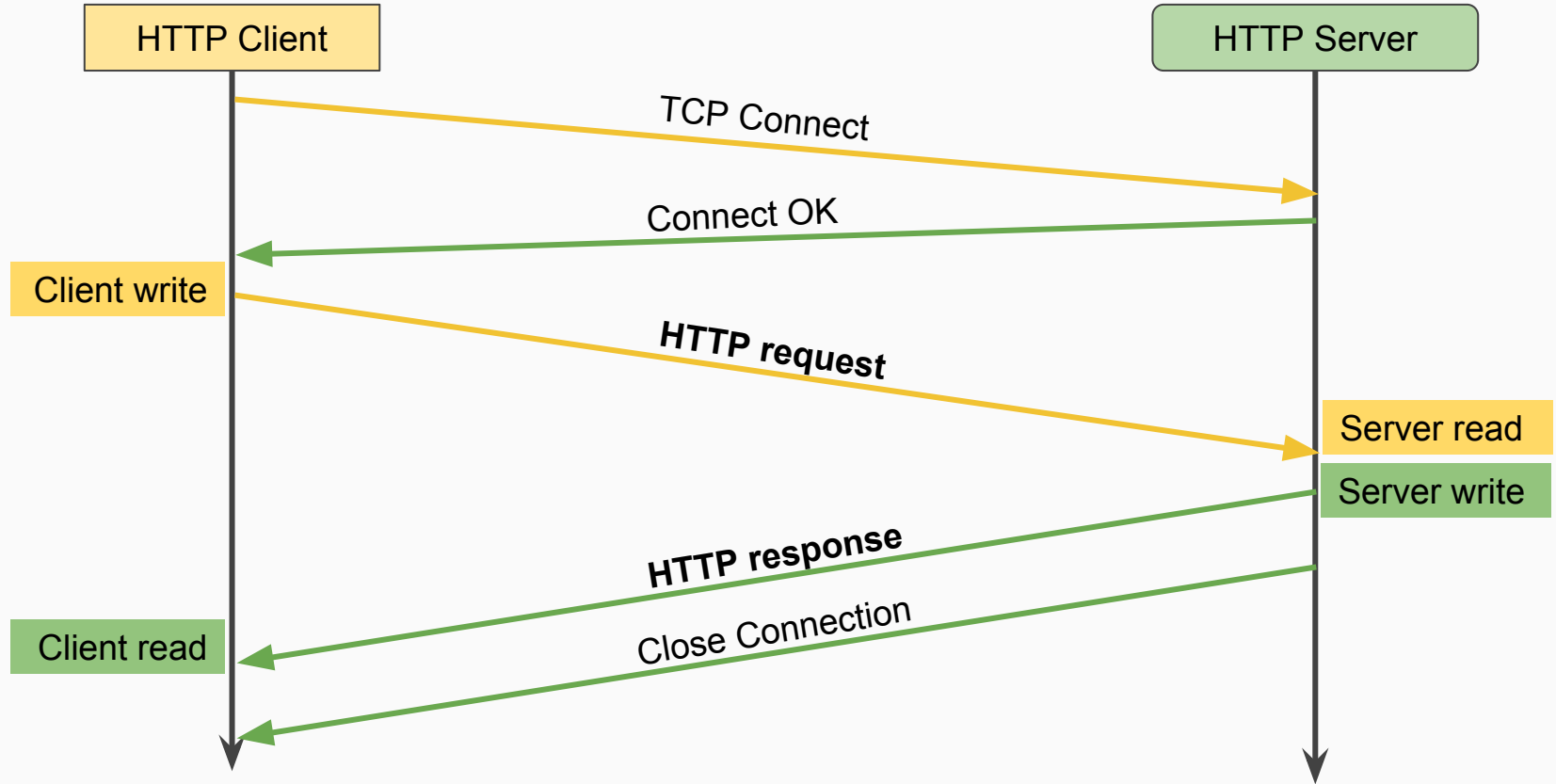
- HyperText Transfer Protocol
- Invented by Tim Berners Lee
- A protocol for delivering resources over the web
- TCP connections, default port 80
- HTTP client
- HTTP server (listening on port 80)
- Stateless communications



HTTP Communication Model



Transaction Timeline Details



Start line: **request/response**

Header1: value1
Header2: value2
... more header lines here ...
HeaderN: valueN

One blank line

[optional message body goes here]

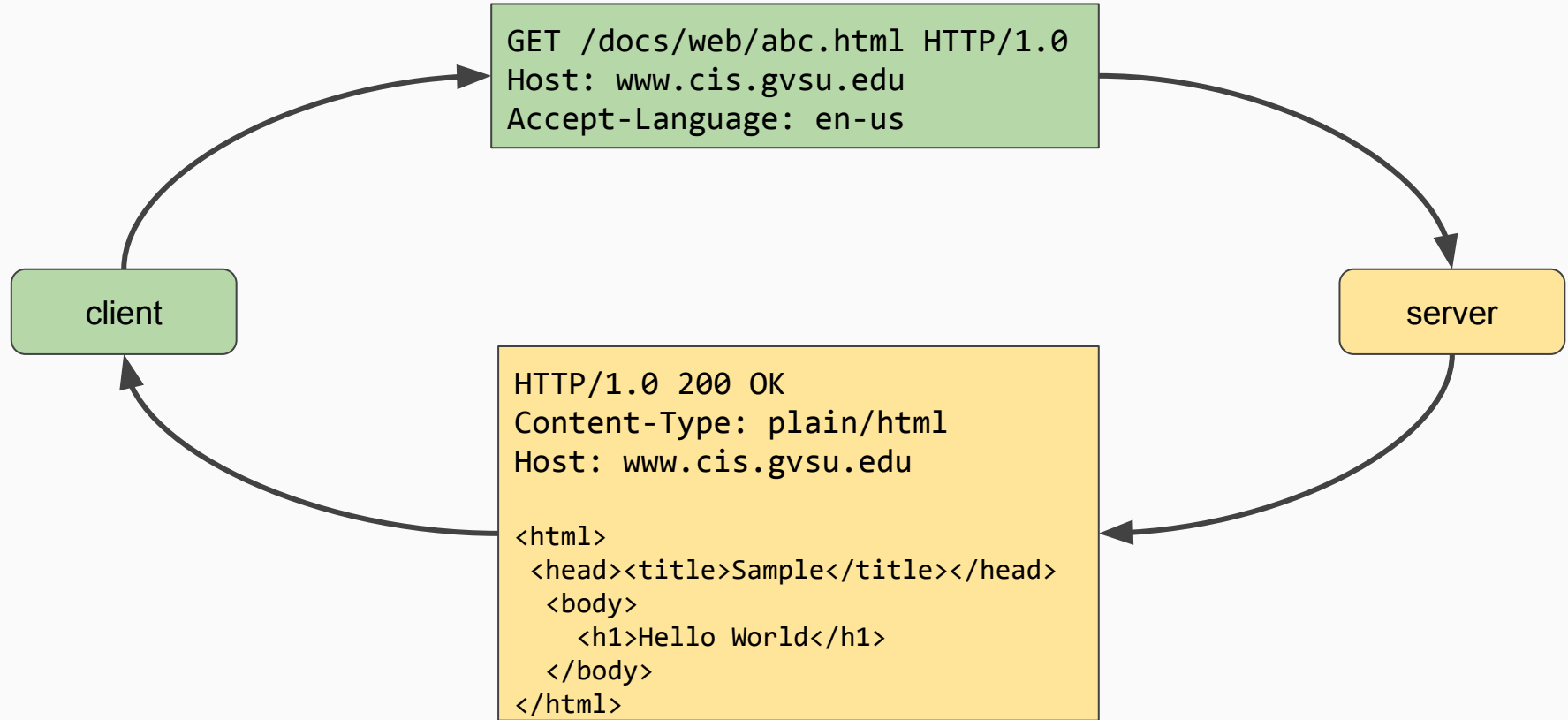
HTTP 1.0 Message Format

- Always begin with the initial request/response line
- **Optional** header lines
- A blank line (**required**)
- **Optional** message body that may span multiple lines of data

HTTP 1.0 Commands (Request Methods)

- GET
- HEAD (like GET but the server responds only with header, no data)
- POST

Request and Response Messages



Telnet Demo

Connecting to a Web Server via telnet

(1) Connect to EOS Web Server (<http://www.cis.gvsu.edu/~youruserid>)

```
telnet www.cis.gvsu.edu 80  
GET /~youruserid HTTP/1.0
```

(2) Connect to your own local server (open two terminals)

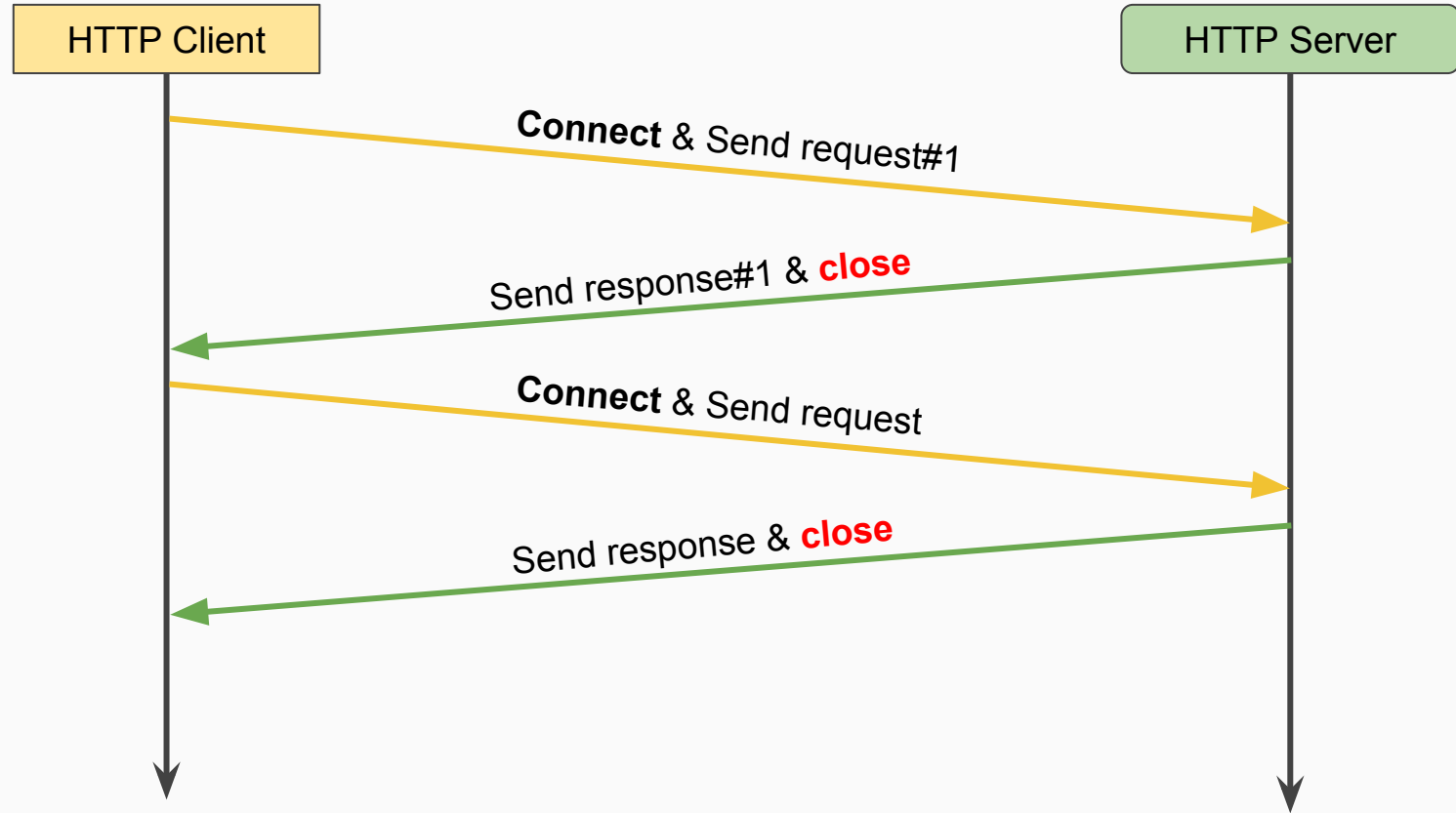
```
python -m SimpleHTTPServer  
Serving HTTP on 0.0.0.0 port 8000 ...
```

```
telnet localhost 8000  
GET /files/in/your/dir HTTP/1.0
```

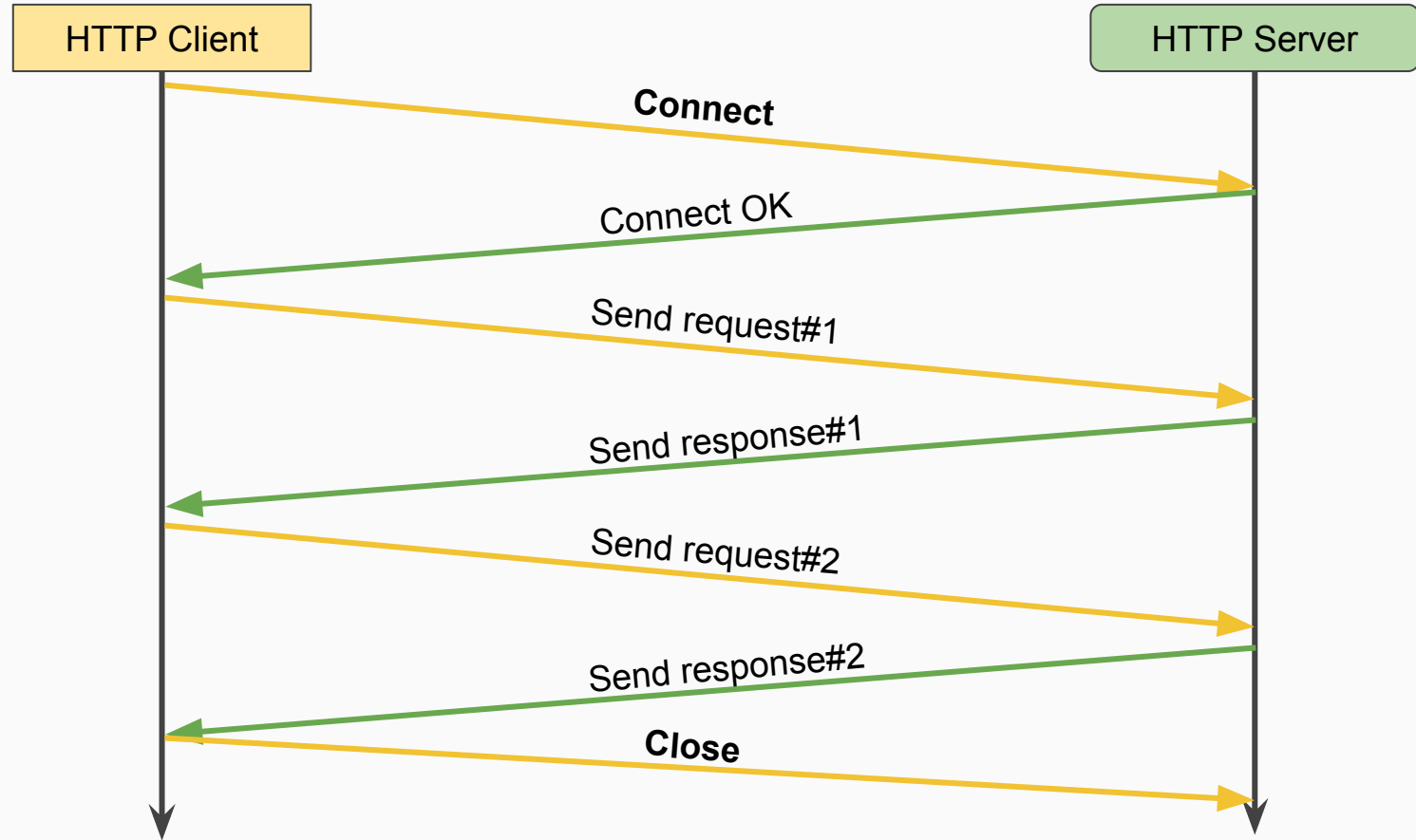

HTTP Status Code

Status Code	Description
1xx	Informational messages
2xx	Success messages
3xx	Redirect message
4xx	Error on the client's part
5xx	Error on the server's part

Non-Persistent HTTP 1.0 Connections



Persistent HTTP 1.1 Connections



HTTPS

- HTTP Secure
- HTTP over TLS (Transport Layer Security)
- HTTP over SSL (Secure Socket Layer)

Secure Transaction Timeline (over Persistent Connection)

