

## **zlib compression in HTTP Server (Server)**

### **Description**

In this problem, you need to implement an HTTP server that supports zlib compression using Python's built-in libraries. The server should handle GET requests to the /status endpoint and return a JSON response. When the client includes **Accept-Encoding: deflate** in the request headers, the server must compress the response using **zlib** compression.

Your task is to create both:

1. An HTTP server that listens on localhost:8080 and handles compression
2. An HTTP client that can connect to the server and decompress responses

### **Server Requirements:**

- Listen on localhost port 8080
- Accept only one client connection at a time
- Receive up to 4096 bytes from each client
- Handle GET requests to /status endpoint
- Return JSON object: {"name": "myServer", "status": "online"} (use json library)
- Apply zlib compression using zlib.compress when Accept-Encoding: deflate is present in request headers
- Return 404 for any other endpoints
- Close client connection after each request

### **Input**

The programs should not require any command-line input. Both server and client should be implemented as standalone Python scripts that can be executed directly.

### **Output (without unit test)**

#### **Server Output:**

Server listening on ('localhost', 8080)

Connection from ('127.0.0.1', 54172)

```
Request header: ['GET /status HTTP/1.1', 'Host: localhost',  
'Accept-Encoding: deflate', 'Connection: close', '', '']
```

Server shutting down...

### **Output (with unit test)**

When running the unit tests for both server and client implementations, the expected output should show successful test assertions:

#### **Server Test Output:**

- ✓ Server listening on port 8080
- ✓ Server receives 4096 bytes from client
- ✓ Sent correct JSON response without compression
- ✓ HTTP response includes deflate compression header
- ✓ zlib compression and decompression works correctly