Assignment Specification (Performance Testing with JMeter)

1. Response Time (Average, Median, 90% Line, 95% Line, and 99% Line)

- Response Time is a crucial metric that indicates how quickly the server responds to requests from users.
  - Average Response Time: The average response time remains stable across different load sizes:
    - For 1 user, it was 515 ms.
    - For 10 users, it increased slightly to 483 ms.
    - For 50 users, it was 474 ms.
    - For 100 users, it was 472 ms.

This shows that the server handles load well, as the increase in user count does not significantly impact the average response time.

  - Median Response Time: The median response time for the home page and category page remains steady, which means that for 50% of the requests, the response time is relatively fast and consistent.
    - For 100 users, the median time for the Petstore Home Page was 707 ms, and for the Category Page, it was 235 ms.

These median times indicate that the server performs efficiently for the majority of requests.

  - 90%, 95%, and 99% Lines: The 90th, 95th, and 99th percentile values help identify the tail-end performance.
    - For 100 users, the 99th percentile response time for the Home Page was 769 ms, while the Category Page remained faster at 261 ms.
    - This indicates that even at peak loads, 99% of requests are being processed within acceptable time frames, especially for the category pages.

2. Throughput

- Throughput measures how many requests are being processed per second, providing insight into the system's capacity to handle concurrent users.
  - For 1 user, throughput was 1.9 requests/sec.
  - For 10 users, throughput increased to 5.5 requests/sec.

- For 50 users, it was 25.7 requests/sec.
- For 100 users, it reached 51.3 requests/sec.

The throughput increases proportionally with the number of users, which indicates the server scales effectively to meet demand. There was no drastic drop in throughput with increased load, demonstrating good server optimization for concurrent requests.

3. Error Percentage

- The error percentage across all the tests was 0%, meaning all the requests were successfully processed, and the system handled the load without failures.

This is a positive sign of system stability, especially under increasing loads.

4. Data Transferred (Received and Sent KB/sec)

- As the number of users increased, the amount of data transferred (both received and sent) also increased:
  - For 1 user, it received 9.45 KB/sec and sent 0.30 KB/sec.
  - For 100 users, it received 249.97 KB/sec and sent 8.02 KB/sec.

This suggests that the data volume handled by the server scales appropriately with the user load, which means that the server's bandwidth capacity is sufficient for these loads.