Prepared by: Hager Abdal Hamid Essa
Student ID: 2205239

1. 📊 Request Summary

- **Total Requests:** 10,000
- **GET Requests:** 9,952
- **POST Requests:** 5

2. 🌐 Unique IP Addresses

- **Total Unique IPs:** 1,753
- **Examples:**
  - `66.249.73.135`: 482 requests
  - `37.11.0.8`: 13 requests
  - `216.143.11.118`: 7 requests

3. ❌ Failed Requests

- **Total Failures:** 220
- **Failure Rate:** 2.20%

4. 🔝 Most Active IPs

- **Most Active IP Overall (GET):** `66.249.73.135` (482 requests)
- **Most Active IP (POST):** `78.173.140.106` (3 POST requests)

5. 🗓️ Daily Averages

- **Average Requests per Day:** 2,500

6. 📅 Failures by Day

Date	Failed Requests
19/May/2015	66
18/May/2015	66
20/May/2015	58
17/May/2015	30

7. ⏰ Requests per Hour

Hour	Requests
00	361
01	360
02	365
...	...
14	**498** (peak)
23	356

8. 📈 Request Trend

- Traffic is steady across hours, with peaks between **10:00 to 20:00**, especially at **14:00 (498)** and **15:00 (496)**.

9. 🛠️ Status Code Breakdown

Code	Description	Count
200	OK	9126

304	Not Modified	445
404	Not Found	213
301	Moved Permanently	164
206	Partial Content	45
500	Internal Server Error	3
416	Range Not Satisfiable	2
403	Forbidden	2

10. 🕑 Failures by Hour

Hour	Failures
05	15
09	18
13	12
19	10
...	...

Failures are slightly concentrated between **05:00 – 13:00**.

☑ Analysis Suggestions

1. Reduce Number of Failures

- **404 Errors:** May indicate missing pages or broken links. Review URL routing and site structure.
- **500 Errors:** These are critical. Suggest reviewing backend logs for exceptions or resource issues.

2. Critical Days and Times

- Highest failures occurred on **18th, 19th, and 20th May** — further investigation is required.
- Monitor the **morning hours (05:00–09:00)** where error rates spike.

3. Security Concerns

- IP `66.249.73.135` made **482 requests**, which could be normal or a bot. Consider:
  - Rate limiting
  - Bot detection
  - GeoIP tracking to flag unusual locations

4. System Improvements

- **Monitoring & Alerts:** Use tools like **Prometheus, Grafana**, or **ELK Stack** for real-time log tracking.
- **Auto-Scaling:** Implement to manage high traffic hours.
- **Enhanced Logging:** Use structured formats (e.g., JSON) with more metadata (user-agent, geo, device).

5. Balance GET vs. POST

- GET dominates; POST usage is minimal.
- Investigate POST failures (e.g., form submissions, API issues).
- Ensure security around POST requests (e.g., input validation, CSRF protection).

📄 Conclusion

The analysis highlights moderate error rates (2.2%), a strong trend of GET traffic, and a few days with spike failures that require immediate attention. With improved monitoring, rate control, and logging practices, the system can be made significantly more resilient and secure.