Many computational systems provide a logging service so system administrators can keep tabs on a system's activity as well as diagnose problems based on knowledge gleaned from the logs. Continuous and automated processing log entries can speed up the identification of problems as well as the process of implementing corrective measures. Web servers are examples of such systems. A web server log contains information regarding HTTP-based accesses to web pages hosted by the server, including the Internet Protocol (IP) address of the host accessing the page, the time of particular access, the number of bytes sent by the server, and the specific page addresses that have been served. I have included one sample file, please use that. This file is space-separated and has the columns:

```
IPAddress Timestamp Request ResponseCode NumberOfBytes
```

Write an application in Beam or Spark (Java or Python) that reads in this log file produced by a web server.

1. For each unique IP, compute the total number of bytes served to that IP address.
2. Extend the application to compute the total number of bytes served per time window of 1 hour, (with tumbling windows) for each unique IP.

Please make any assumptions as appropriate, and if possible please try to avoid SparkSQL.

Deliverables

Please put the code into a separate project (or directory).
Tar/gz or zip the contents of your takehome into a single archive.
Please make sure that the code runs with the file provided
Please include a short write-up explaining your implementation (<1 page)