# Tasks

* Add prom-client <https://github.com/siimon/prom-client> integration to the book and author services.
* Add custom metrics:
  + What to measure:
    - Request count (metric name: request\_count, tags: ControllerName, ServiceName)
    - Error count (metric name: error\_count, tags: ControllerName, ServiceName)
    - Endpoints execution time (metric name: execution\_duration, tags: ControllerName, ServiceName)
* As additional metrics you could integrate <https://github.com/jochen-schweizer/express-prom-bundle> or <https://github.com/tdeekens/promster>
* Add Prometheus to the docker compose and configure to scrap metrics.
* Add Grafana and connect to Prometheus. (AlertManager configuration is not needed)
* Import dashboards to Grafana:
  + Docker container dashboard
  + Add dashboard to visualize custom metrics
    - Request count rate
    - Error count rate
    - Execution duration for each endpoint

Note: As alternative solution you could try to use *appmetrics* library <https://github.com/RuntimeTools/appmetrics> along with <https://github.com/CloudNativeJS/appmetrics-prometheus>, but pure *prom-clien*t solution is more customizable.

# Links

Basic Configuration:

* Prometheus docker compose: <https://prometheus.io/docs/guides/cadvisor/> .
* Grafana + Prometheus: <https://www.bogotobogo.com/DevOps/Docker/Docker_Prometheus_Grafana.php> .
* Docker container dashboard: <https://grafana.com/grafana/dashboards/893> .
* How to import Grafana dashboard: <https://grafana.com/docs/grafana/latest/dashboards/export-import/> .

Examples and Tutorials:

* Node.js Monitoring with Prometheus and Grafana <https://codersociety.com/blog/articles/nodejs-application-monitoring-with-prometheus-and-grafana>
* Monitoring Node.js apps with Prometheus <https://community.tibco.com/wiki/monitoring-your-nodejs-apps-prometheus>
* Node.js Performance Monitoring with Prometheus <https://blog.risingstack.com/node-js-performance-monitoring-with-prometheus/>

Main Solution:

* prom-client library <https://github.com/siimon/prom-client>
* express prometheus bundle <https://github.com/jochen-schweizer/express-prom-bundle>
* promster library <https://github.com/tdeekens/promster>

Alternative Solution:

* appmetrics library <https://github.com/RuntimeTools/appmetrics>
* appmetrics dashboard <https://github.com/RuntimeTools/appmetrics-dash>
* appmetrics Prometheus intergration <https://github.com/CloudNativeJS/appmetrics-prometheus>

# Result

* Docker-compose with Grafana and Prometheus has to be committed to the source control.
* Code changes has to be committed to the source control.
* Commit name System-observability-session-3