Tracking recent events through recent Wikipedia changes using Storm

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Aim

- Correlate # of article changes *within* a language to recent events.
  - For English, German, Spanish and Japanese.

- Correlate article changes *between* languages to recent events.
  - By using Wikipedia's "in another language: English" feature.

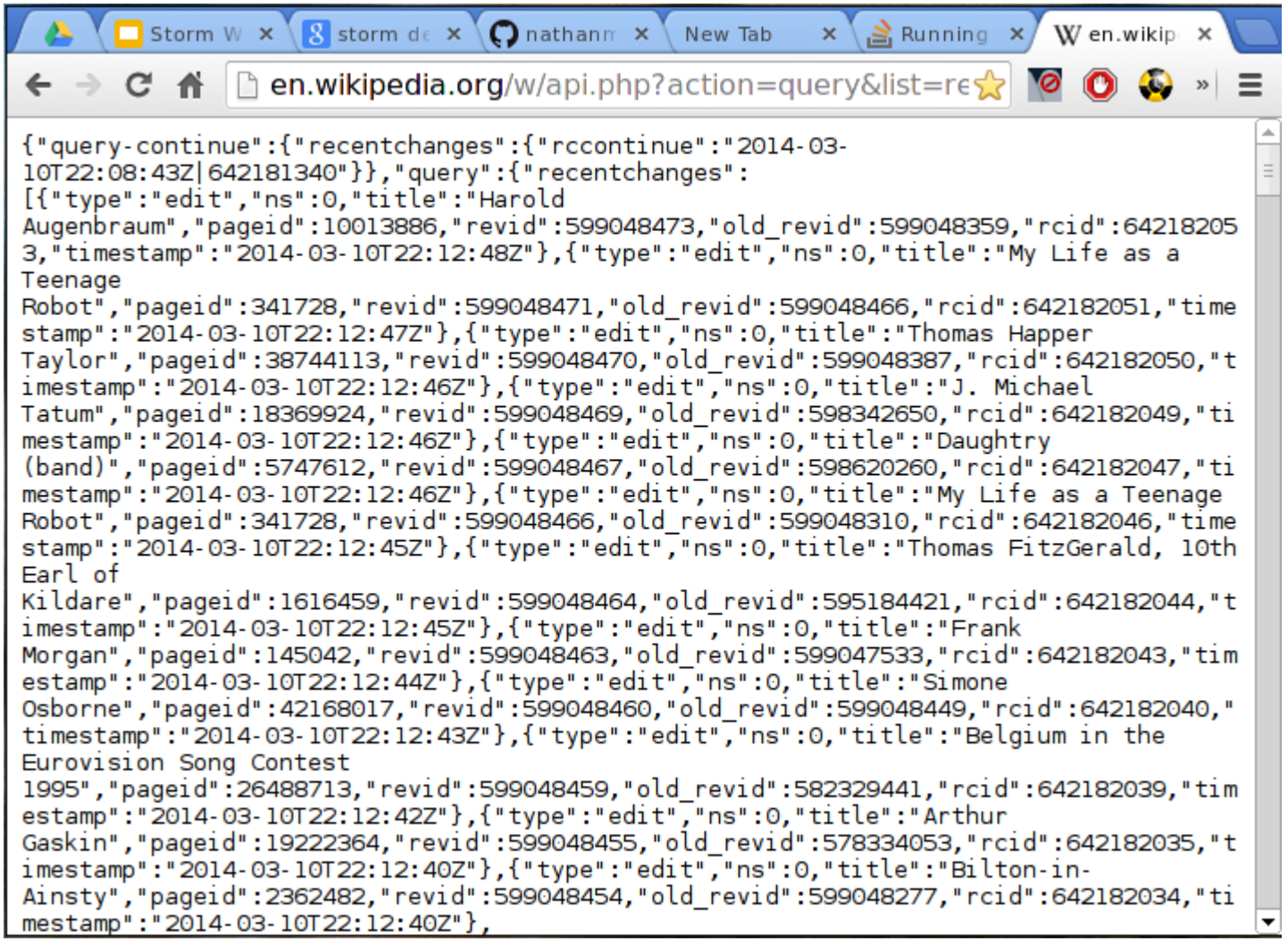
Data collection

- #Recent changes per article per language
  - For: English, Spanish, German and Japanese

- Use streaming windows of 2-6 hours and see how event changes for the top 100 events

- Depending on necessity I may make use of approximate counting in the counting phases.

Input stream - JSON data!

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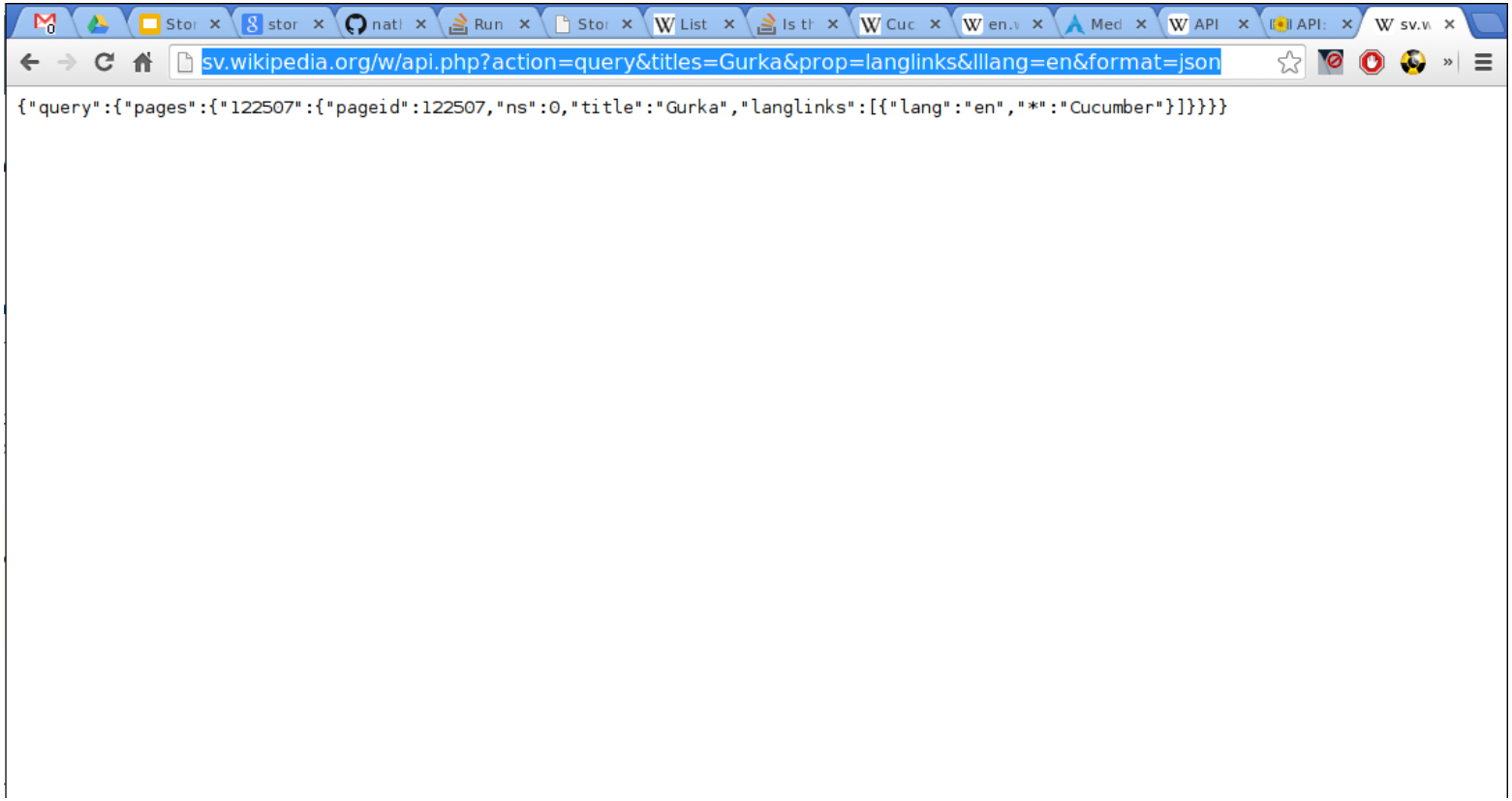
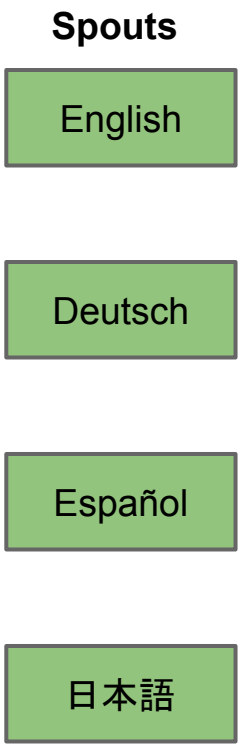
Article conversion to English Wikipedia



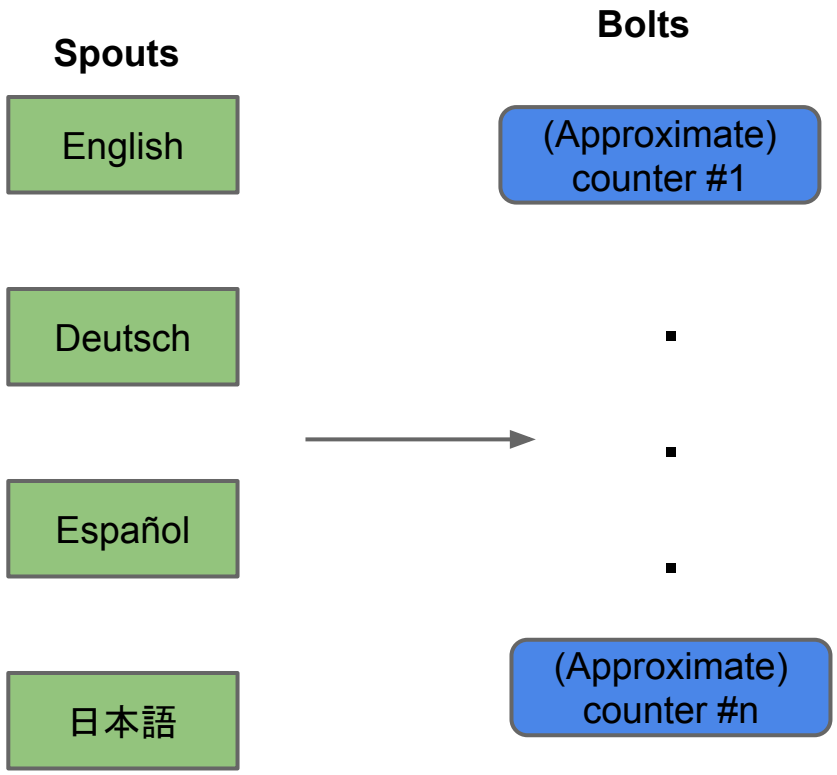
Storm Intro/Recap

- Stream Processing Engine
- Programmers create explicit DAGs (topologies) of custom or built in functions
- External inputs (spouts), external outputs (sinks), processing elements (bolts)

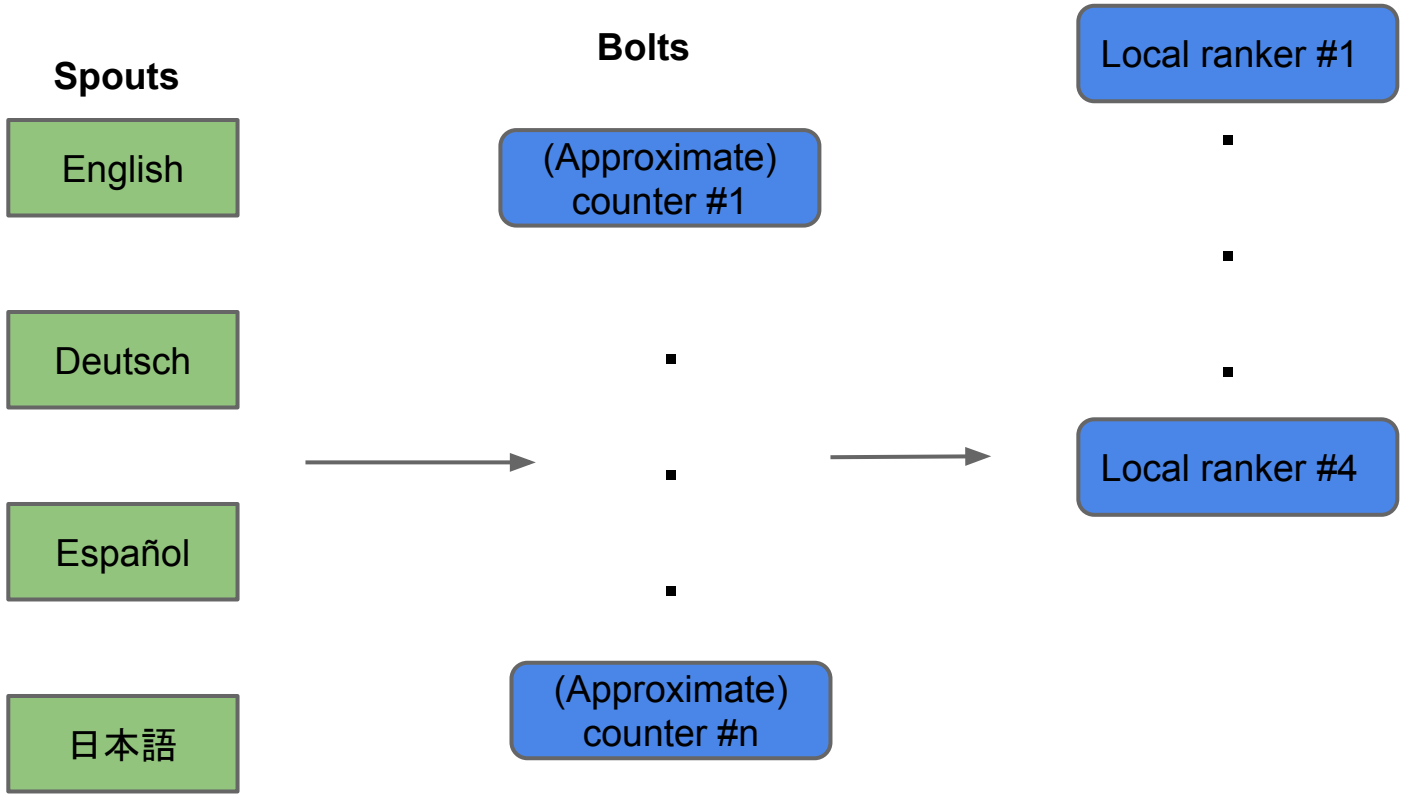
Storm topology



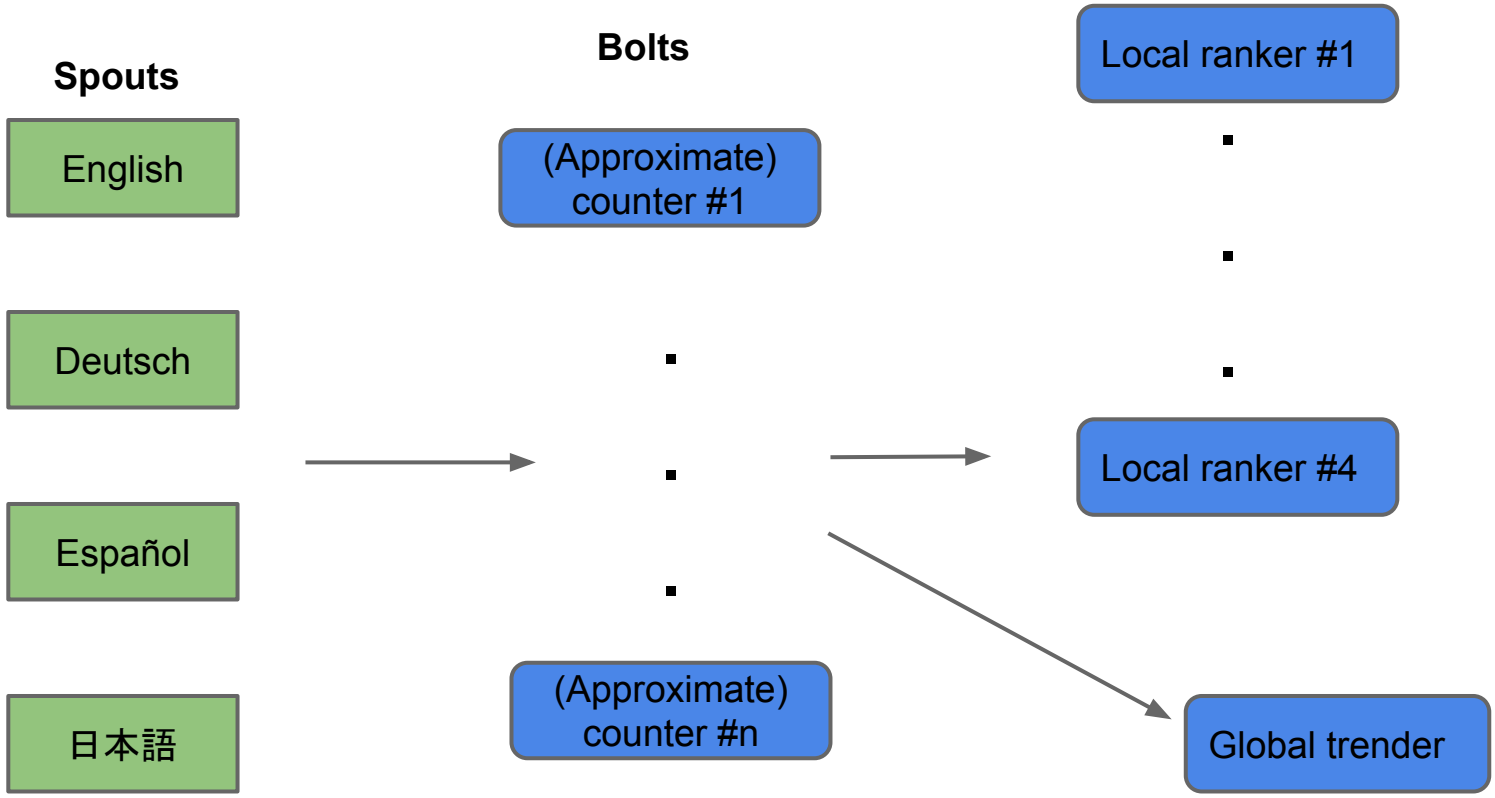
Storm topology



Storm topology



Storm topology



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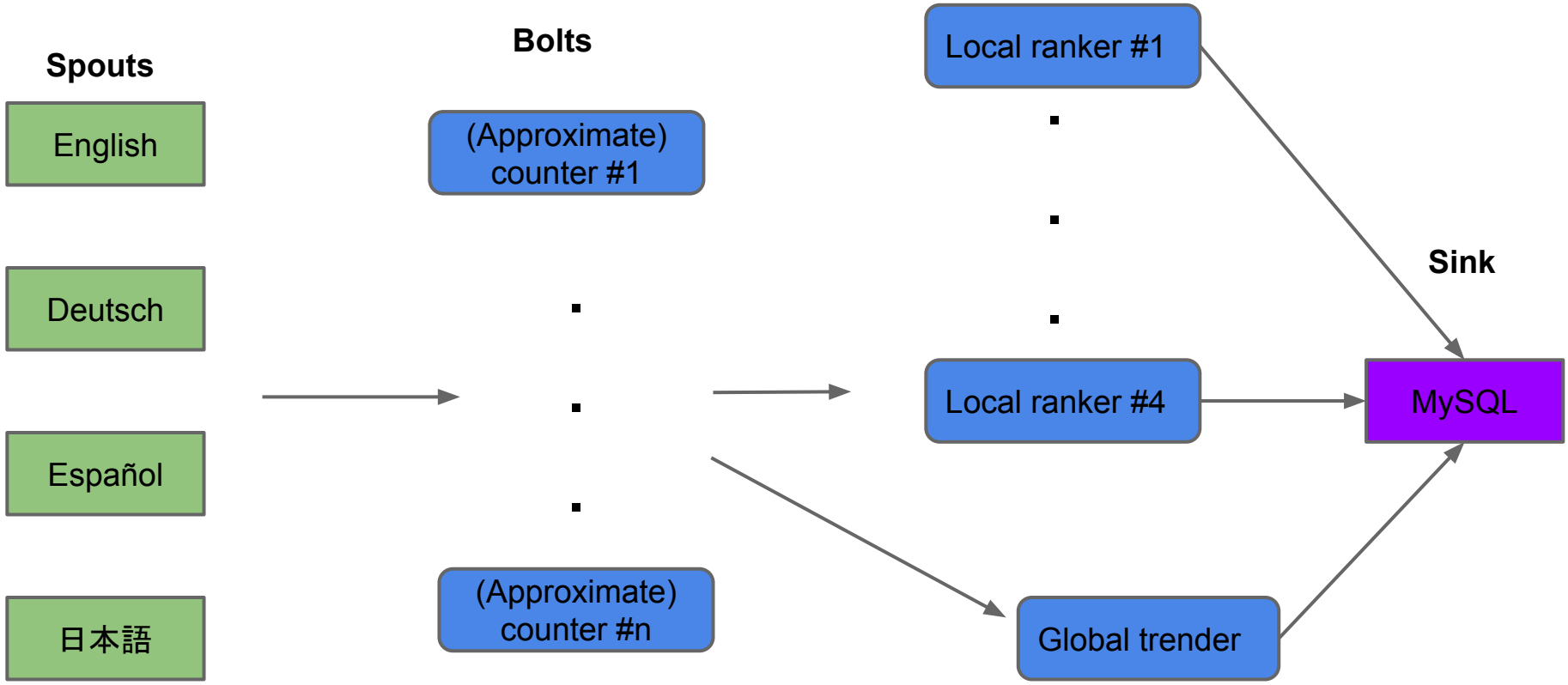
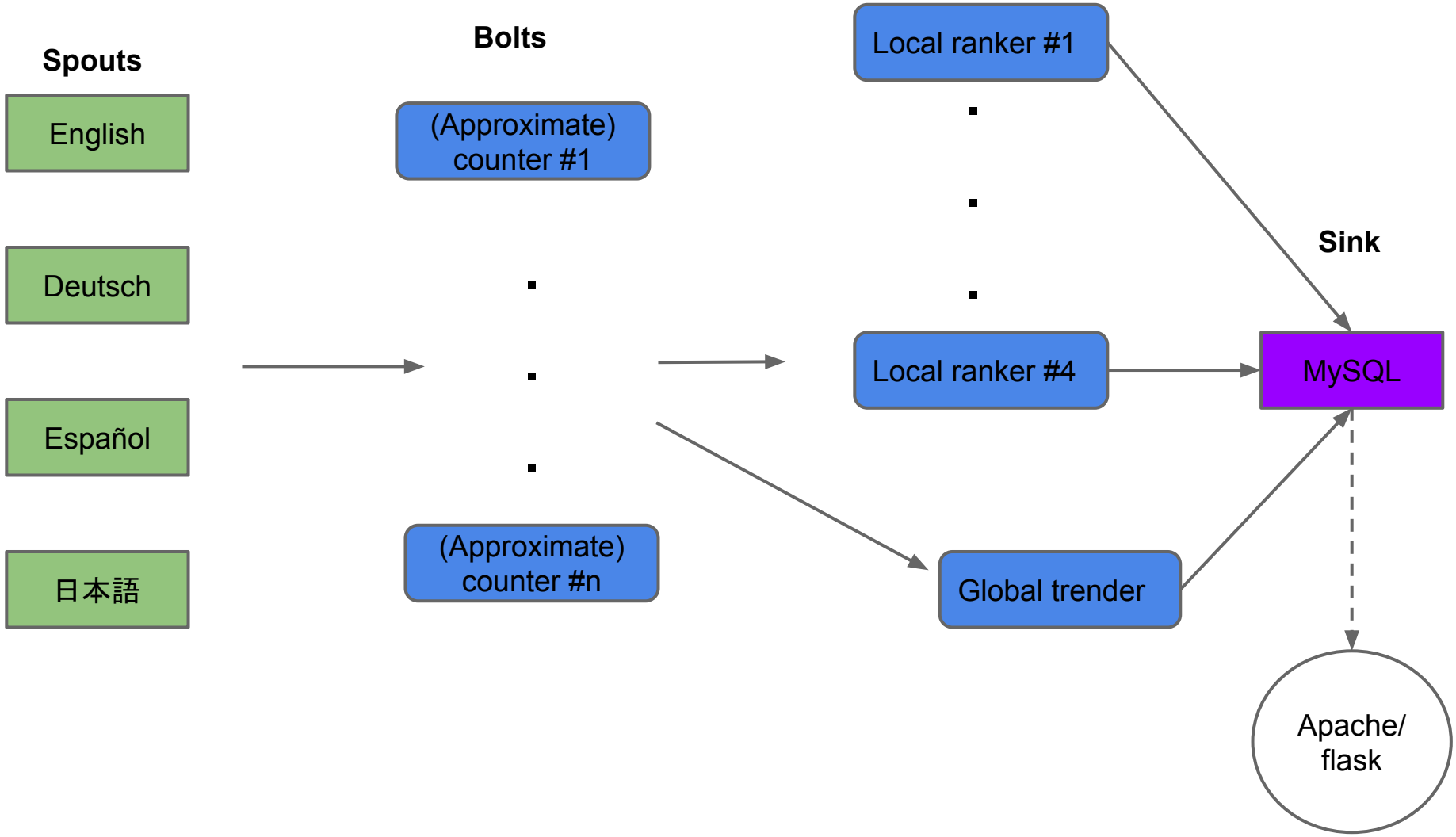


Storm topology



Expected Results

- Recent news locally and globally between the languages visible in trending topics and related people
  - E.g. Sotji medal count, Canada hockey team, Sidney Crosby.

- To a smaller degree article propagation
  - Minor changes in an English article being picked up and added to other languages.

Potential pitfalls

- Missed events
  - One person making a single, large change to a topic
  - May be solvable by comparing against similar pages which should hopefully be edited too!

- Potential noise
  - Spammers may trigger many changes and community undos will add to the number of changes!

Deployment

- Rent 4-5 Amazon EC2 instances for a two day period

- m3.large instances
  - Dual core Intel Xeon E5-2680 @2.6GHz, 32GB SSD 7.5GB RAM

- Use the Storm-deploy tool to deploy the Storm program over a

Current Progress

- Design plan
- Got the sample Storm program and a development environment locally
- Set up an EC2 account
- Able to scrape recent changes from Wikipedia in JSON format

Plan

- Create a Storm program with the proposed topology
- Setup a simple web interface to easily observe recent trends between languages
- Deploy the program on EC2
- Try to see how different topologies can make the program more efficient
- Look into page view counts as opposed to edits and see if these correspond better with recent events

Questions / Suggestions?