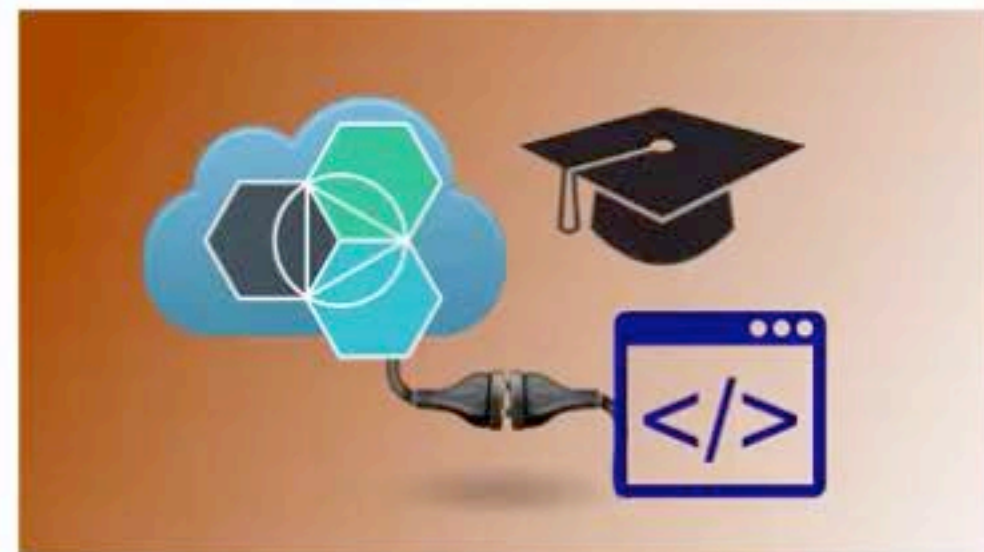


# 12 Factor App #9 - 12



## Learning Objectives:

- #9 Disposability
- #10 Dev/Prod parity
- #11 Logs
- #12 Admin Processes



# #9 Disposability



“Maximize robustness with fast startup and graceful shutdown”

- Apps may be killed and restarted by cloud platform without notification at any time
- App startup should be fast; as a rule of thumb start up should take no more than 1 minute
- App shutdown should be graceful e.g., close connections, ensure no job is locked

# #10 Dev/Prod parity



“Keep Dev, Staging and Production as similar as possible”

- Refers to:
  - Consistent configuration and app setup across all environments
  - Same Backing service (& their versions) across all environments
- Benefits are:
  - Leads to fewer bugs/issues in production
  - Faster delivery & continuous deployment



# #11 Logs



THE TWELVE-FACTOR APP

“Treat logs as event streams”

- Log to *stdout* and *stderr*
- Cloud platform takes care of
  - Collating the log events/messages from all instances
  - Routing of logs to a destination
- Destination for logs:
  - External to the app; configured by way of *user defined service (cf cups)*
  - Log streams may be analyzed by external systems for generating reports/alerts

# #12 Admin Processes



“Run admin/management processes as one off tasks”

- One-off admin processes should be run in an identical environment as the regular processes of the app
  - Build and expose admin processes as part of the app instead of external scripts
- Admin code must ship with the release code so that they are in synch.
  - Developer executing a admin process from his/her laptop is a bad practice

# Summary

- **Disposability** – applications are killed and restarted by cloud platform without notification; apps should startup quickly & shutdown gracefully
- **Dev/Prod Parity** – all applications environments should use the same backing services versions; leads to fewer issues in production
- **Logs** – apps should use stdout/stderr for log messages; cloud platform takes care of collating & routing the log event streams
- **Admin Processes** – app should build the admin processes as part of the app codebase; the admin processes should be executed in the same environment as the app