



October 16, 2017
Week 9, Class #24
Architecture

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MWF – 10:00-11:30 - Kepner 0095F

This Week – Design



✧ Monday, 10-16

- Lecture – Architecture

✧ Wednesday, 10-18

- Lecture – Design

✧ Friday, 10-20

- Lecture – Data

Next Week

Code

Collaboration Tools



✧ File Sharing

- Dropbox, Google Drive, One Drive

✧ Notes

- Evernote, One Note

✧ Email

- Gmail, Outlook

✧ Meetings

- Hangouts, Skype, Goto Meeting

✧ Diagrams

- gliffy

Collaboration Tools



✧ Organization

- Save unstructured info as text
- Add structure as needed
- Build search filters

✧ Notes – 15 seconds to capture an idea

Version Control



✧ Git

- Peer-to-peer repos
- Start simple
 - `status/add/commit`
 - `pull/push`

✧ Github or Bitbucket

- Web hosting services

Issues Tracking



- ✧ Atlassian Jira - Github issues
- ✧ One source of truth
- ✧ Integrate with source code & test tools
- ✧ Start simple

Architecture



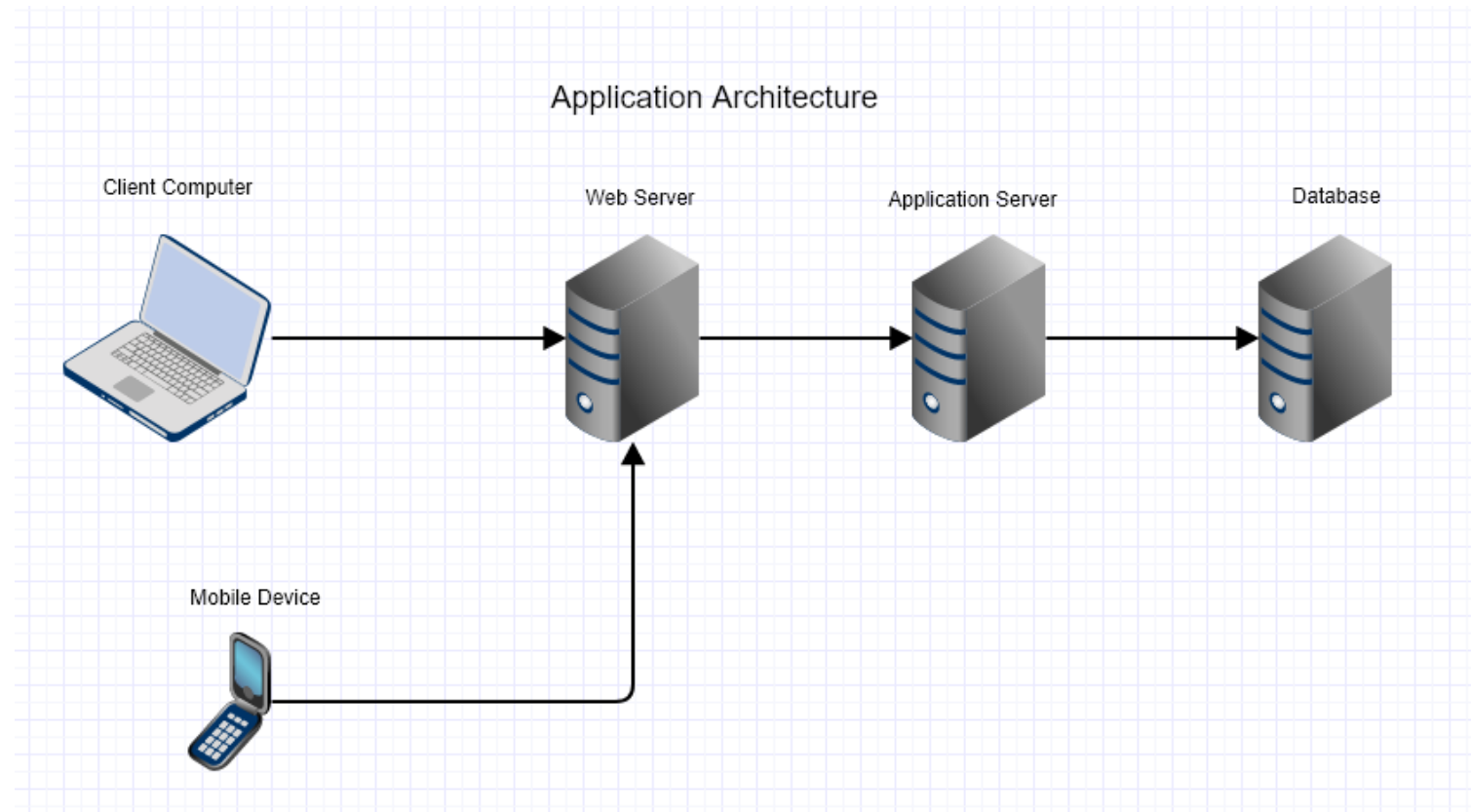
✧ Building Blocks

- System partitioning
- Major components
- Data flow diagrams
- Control flow

✧ Interfaces

- Each interface is described as a function stack
- Define the signatures

App Architecture



Architecture Process



- ✧ Partition the system
- ✧ Define interfaces
- ✧ Create a test plan
- ✧ Manage dependencies

World Press Architecture



- ✧ Computer client - Web browser
- ✧ Web server - http, urls to web pages
- ✧ Email server - SMTP
- ✧ Application server - REST protocol
- ✧ Database - CRUD

Web Server Interface



✧ Login

- register (name, email, password)
- login (name, password)

✧ Author

- add_post (user, title, body)
- edit_post (user, title, body)
- delete_post (user, title)

✧ Reader

- get_post (title)
- list_posts (user)

Web Server Interface



✧ News

- register (email)
- verify_email (token)
- unsubscribe (email)

Application Server Interface



✧ User

- CRUD - create, read, update, delete

✧ Post

- CRUD - create, read, update, delete

✧ Subscriber

- CRUD - create, read, update, delete

Database Schema



✧ User

- name, email, password

✧ Post

- user, title, body

✧ Subscriber

- email, user