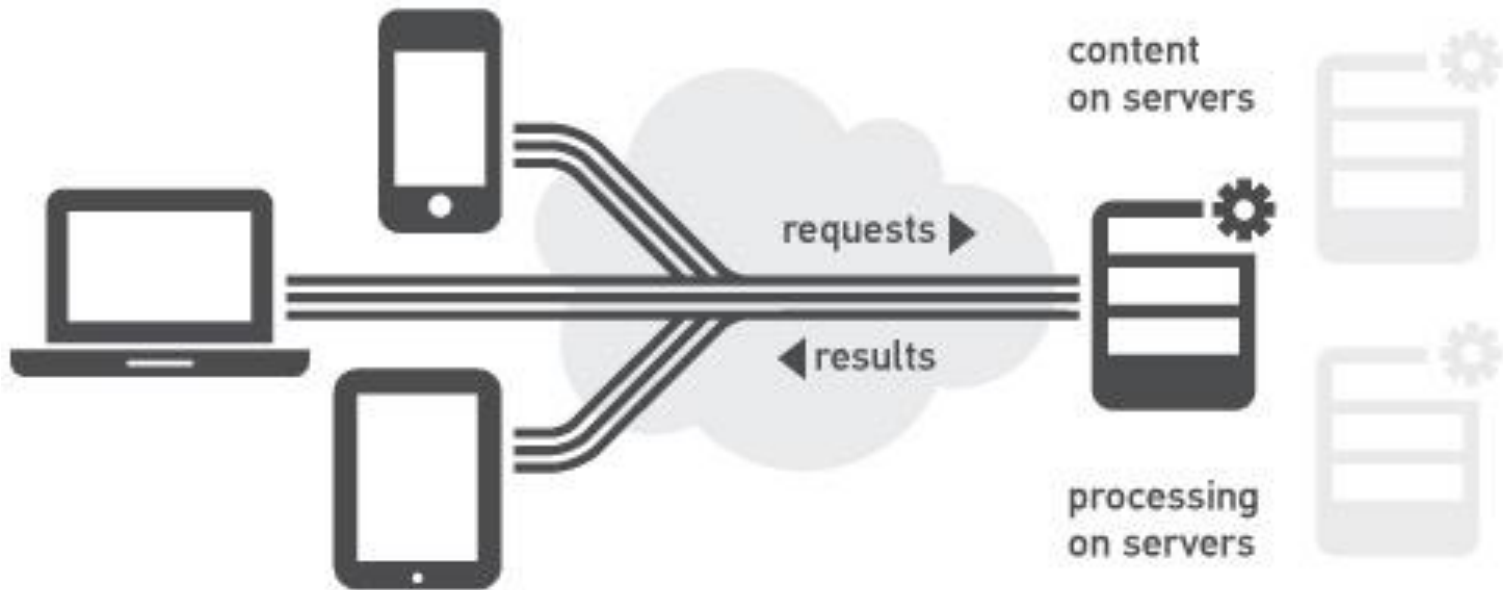




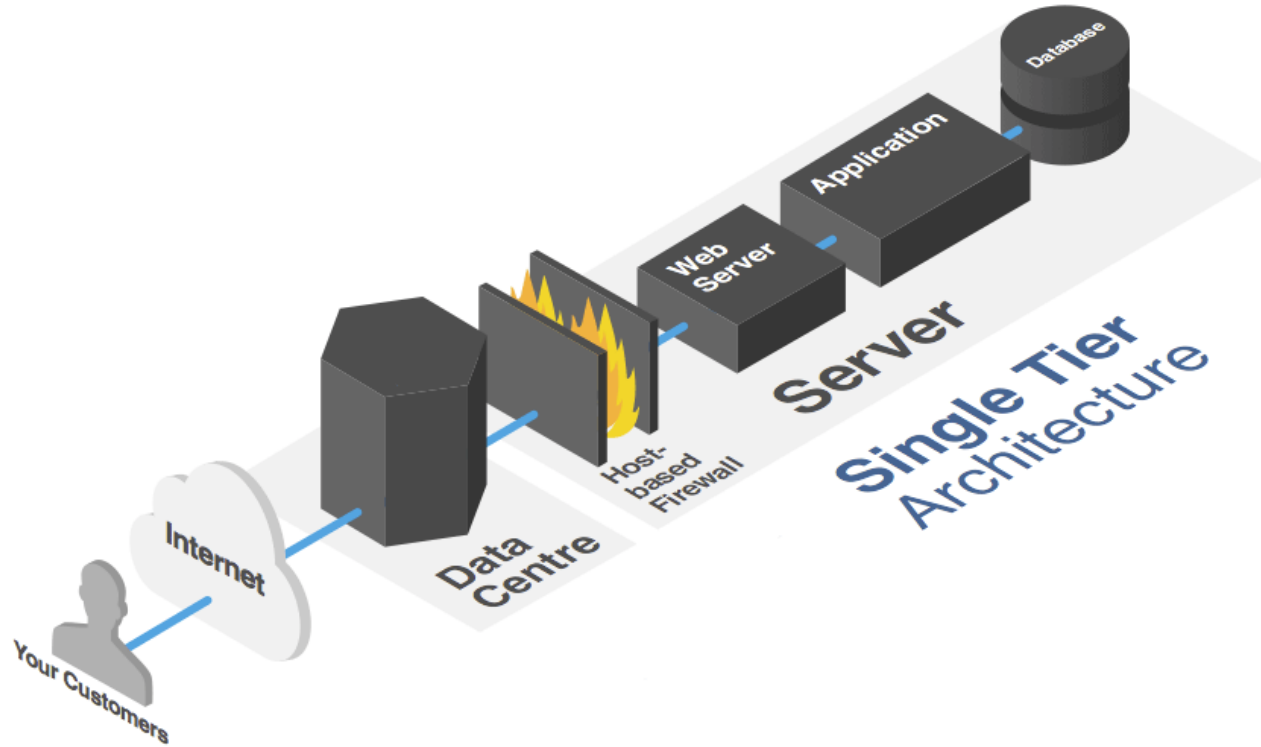
COMP160

UNIX Servers and Web Apps

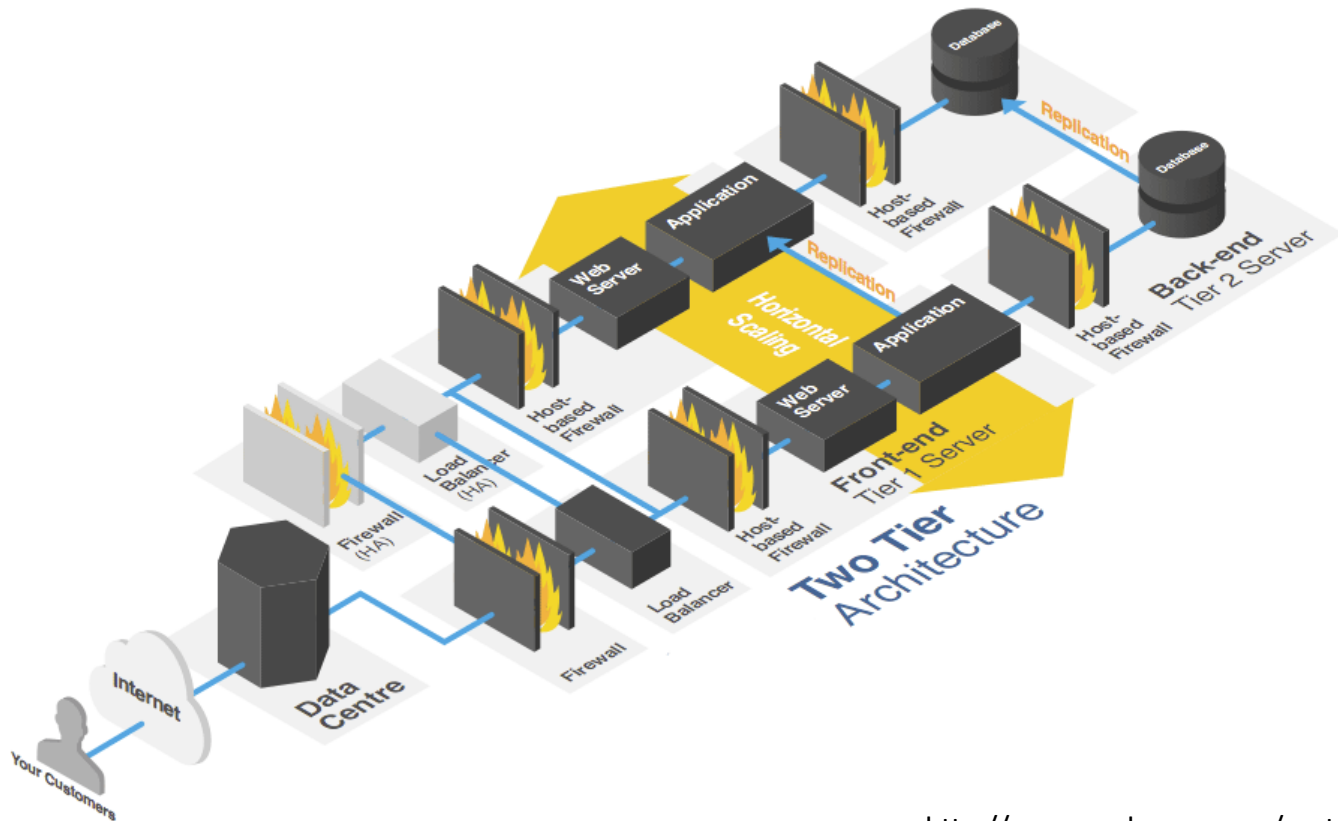
Web Application Architecture



Web Application Architecture



Web Application Architecture



Web Application Architecture

- Basic interaction between a client and a server using HTTP over the Internet
- Architectures can be made increasingly complex, depending on the requirements
 - Vertical scaling
 - Horizontal scaling
 - Additional tiers



<https://www.youtube.com/watch?v=RsQ1tFLwldY>

Exercise

- Draw a diagram illustrating how your high score server will interact with your mobile app
- **5 minutes**
- Post your solution on Slack

UNIX, MySQL, Apache, Python3, and Ubuntu Droplets

INTERACTING WITH DATABASES



Learning Objectives

- Use PuTTY to setup a database and web server on a remote cloud service using UNIX commands
- Setup a database in MySQL
- Be able to write code in Python that retrieves data from SQL and output on the web

UNIX Commands

Read Through

<http://mally.stanford.edu/~sr/computing/basic-unix.html>

UNIX Commands

Read Through

<https://www.digitalocean.com/community/tutorials/how-to-set-up-an-apache-mysql-and-python-lamp-server-without-frameworks-on-ubuntu-14-04/>

Task

- Download PuTTY
- Login to your Ubuntu Droplet
- Install apache, mySQL, and Python3 as instructed in the DigitalOcean tutorial
- Configure CGI (common gateway interface) and a Python script to interact with your database to output a web page
- Setup a high score table, and display that data on the web page

Extension Task

Incorporate the high score table into
one of your game projects in C++

HTTP GET and POST

https://www.w3schools.com/tags/ref_httpmethods.asp

Processing Arguments in CGI

<https://docs.python.org/2/library/cgi.html#using-the-cgi-module>

What about Client-Side C++?

<https://kukuruku.co/post/a-cheat-sheet-for-http-libraries-in-c/>