

# Innovative Information Technology

Fang Yu

A joint class with Prof. Chiang and Prof. Liou

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# Objective

- \* Provide graduate students
  - \* A solid training on system development
  - \* A solid training on reading/writing advance technical papers
- \* Target on modern IT techniques
  - \* In this semester, we are interested in techniques of developing ***cloud and mobile applications***

# A Cloud and Mobile Application

How to develop  
an end-user  
application on  
Mobile devices



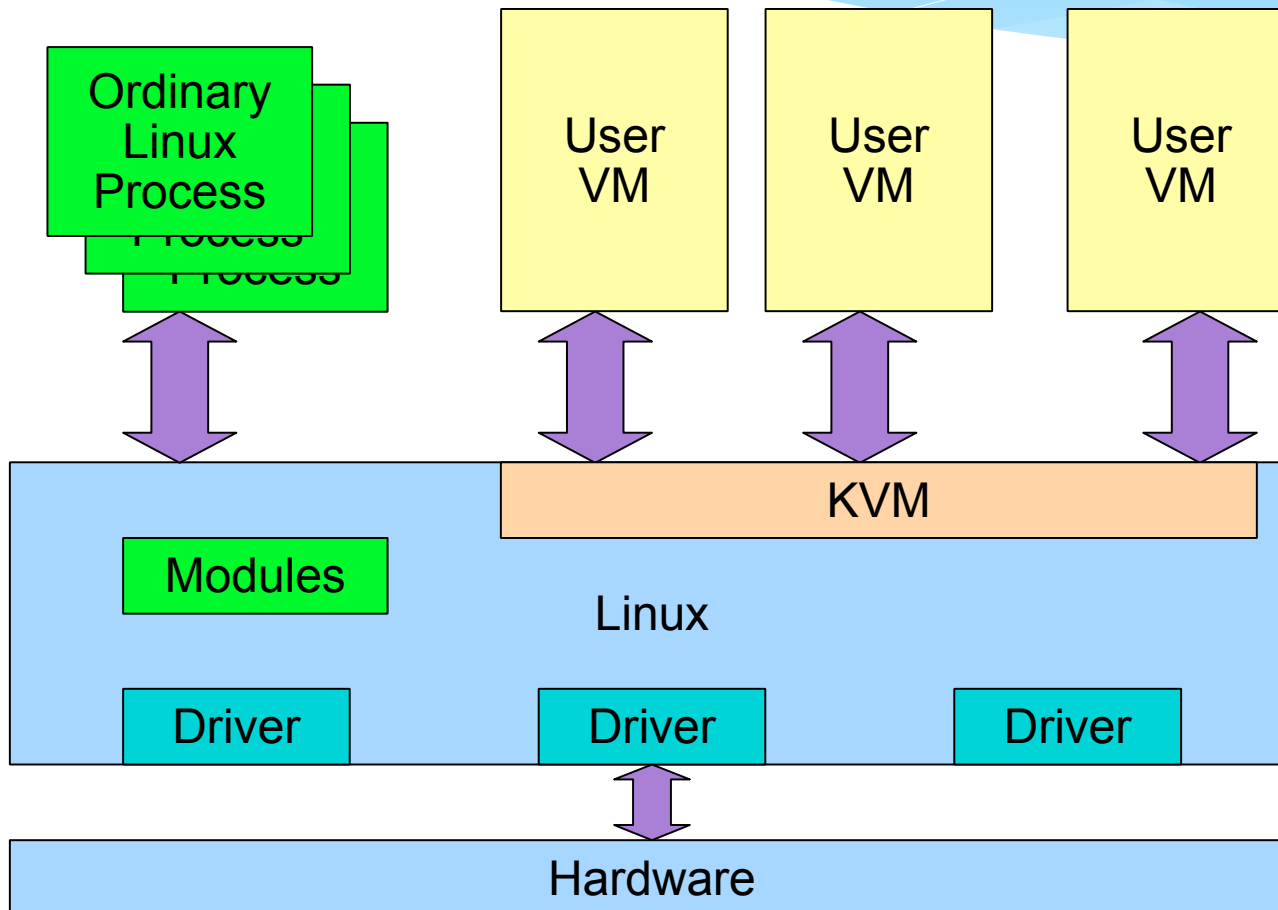
How to develop  
a cloud server  
from scratch

# Requirement

- \* System Development (up to 3 people)
  - \* Server side based on Ubuntu/KVM and Hadoop
  - \* Client side on iOS mobile devices
- \* Technical Paper Study (up to 2 people)
  - \* AppScale: Scalable and Open App Engine Application Development and Deployment
  - \* Active Cloud DB: A RESTful Software-as-a-Service for Language Agnostic Access to Distributed Datastores
  - \* Database-Agnostic Transaction Support for Cloud Infrastructures

# System Development

## \* Architecture on Server Side



# System Development

- \* Client Side Application
  - \* Provide an end-user application using Objective C
  - \* Practice how to access sensitive data of end users



# Project Topics

- \* National Palace Museum Channel
  - \* Digital Contents directly from NPM
  - \* Video-based Cloud/Mobile Service
- \* Web Data Mining
  - \* Computational linguistics and natural language processing
  - \* Wordnet: <http://wordnet.princeton.edu/>
- \* Security Analysis of Web Applications
  - \* Stranger: <http://soslab.nccu.edu.tw/stranger/patcher.html>
- \* Security Analysis of Executable Code
  - \* Binary Analysis Platform: <http://bap.ece.cmu.edu/>

# Tentative Schedule

- \* 9/30 Introduction
  - \* Syllabus and Project Announcement (by Fang)
  - \* How to build up a private cloud using KVM (by Sheng-Wei Lee)  
[http://www.linux-kvm.org/page/Main\\_Page](http://www.linux-kvm.org/page/Main_Page)
- \* 10/7 Technical paper study
  - \* AppScale: Scalable and Open App Engine Application Development and Deployment
  - \* Active Cloud DB: A RESTful Software-as-a-Service for Language Agnostic Access to Distributed Datastores
  - \* Database-Agnostic Transaction Support for Cloud Infrastructures



# Tentative Schedule

- \* 11/11 Introduction to iOS application development
  - \* Xcode Introduction and Environment Setup
  - \* Develop Small Apps (by Michael, Automix)
  - \* iOS online lectures from Stanford University  
<http://www.stanford.edu/class/cs193p/cgi-bin/drupal/downloads-2010-fall>
- \* 11/18 Advance iOS application development
  - \* Private Data Access
  - \* Sensitive Objective-C Routines
- \* 12/23, 12/30 Project Presentation and Review