

# CS 2451: Database Systems

## Team Projects

### The Project

- A significant part of this course is a large database systems **team** project.
- In the project you will design & implement a database system  
Full stack development:
  - Front End (HTML/CSS & optional Javascript)
  - Application server – in PHP
  - DBMS backend – MySQL
- The project will involve working in **teams** of 3.

### Team Project: Requirements & Expectations

- Project broken into 2 phases:
  - Phase 1: teams build an application assigned to the team
    - Includes reports containing the design
    - Demo of the Application
  - Phase 2: Work in new teams to integrate different applications and produce the final project assigned to you
    - This requires **integration** and NOT redesign
- You **have** to work in teams
  - Each team member required to 'produce' equitable share 'product'
  - Teamwork will be assessed...
    - Not all team members may get the same grade on the project!
    - You must bring teamwork issues to attention of the instructor

### Team Project...Warnings!



- Requirements (for each Phase) will be provided, and your project must meet minimum requirements
  - This only gets you a 80% - need to innovate to earn more!
- **You have to submit a working project**
  - No partial credit if your project does not work – you get a zero!

## What is a working project ?

- Must meet all the specifications
- Must have correct and complete workflow
  - Workflow specified in the assignment
- Good user interface
  - Easy to use
  - You have to come up with "easy to use" based on user interfaces you have seen/used.
- Extra features – after you have a working system

## Working in Teams

- Each team works on their assigned project
- Team members have to take lead on some aspect of the project
  - Workload distribution is important
  - Grades for team members can vary based on the project evaluation of each aspect of the "product" you produce
- Every team member has to contribute 'full stack' application
  - You can't work on just webpage dev !!
- We will be using one of the weekly class sessions (lecture or lab) for teamwork – but this is not enough to work as a team!

## Weekly Tasks Timeline

- The Phase1 projects are due Wednesday April 1<sup>st</sup>
  - You will give a demo, and work through a series of testing steps
- There are going to be weekly deliverables – required!
  - Update your Mentors/Program Managers
    - in the classroom, office hours,....
- March 5<sup>th</sup>: details will be posted
  - Flesh out the specifications
  - Draft ER Diagram,
  - determine team task assignments (who does what)
- March 12<sup>th</sup>:
  - Design Tables, Flesh out SQL queries
  - User interface design (option of Style sheets/CSS)
  - Provide (at least design) different webpages for each type of transaction your application will need to support

## Important: Asking Clarification Questions

- This is a mimicry of a 'real world' DB system design and delivery
  - Client gives project you have only a few opportunities to clarify
    - You cannot assume client is available 24-7 to answer your emails
- Each team is allowed FIVE questions by March 5<sup>th</sup>
  - You must email instructors (Roxana and Narahari), copy your team members
  - You should NOT post your project clarification question to piazza
    - This violates policies
- Each team is allowed FIVE additional questions on March 26<sup>th</sup>
- Posts to Piazza can only ask about general PHP, MySQL, etc. issues and NOT about your project

## Infrastructure for your project – real world mimicry!

- Your final project will be deployed on gwupyterhub
  - Treat this as the production machine
- You should have a separate development environment
  - Install PHP+MySQL on your laptop...but this only works for you
  - AWS !!
- Do all our development on your dev platform, and push final code to SEAS machine
- Yes, a bit more work thrown your way...BUT you will learn new tools/skills so it's all good
  - yeah, right...drink the coolaid!

## How to complete the project and learn

- Start early
  - This is a substantial project – waiting to last minute is recipe for disaster
- Communicate regularly with the team
- Bring team issues to the attention of the instructors ASAP
- The project is deliberately open ended in some aspects
  - You have to think through and come up with solutions or design decisions
    - Design decisions should be justifiable based on common practices, sample systems, and/or constraints
- Testing, Testing, and more testing!

## Homework....No kidding!

- You got an email/invitation from AWS....?
- Get started on setting up your AWS environment
  - Kevin's Office hours this week
  - ACM Workshop on setting up AWS....Sunday 2pm
    - Pizza ?
- Read the project specifications individually BEFORE you meet as a team
  - Sometimes “group think” can put blinders on our creativity and ability to identify problems...
    - So individual reading following by team discussion

## Today.....

1. Meet your team members
  - And your mentor!
2. Find a weekly meeting time and submit to mentor/Git
  - on campus (not in a dorm room!)
3. Pick your team name and submit to us by 2pm
4. You have deliverables in a week...so plan your schedule
  - No kidding!
5. Learn some more Github features
  - You will need these for your teamwork....things can go wrong ☹
6. Get some sleep today...tomorrow is an all new day !