Final Project requirements and submission instructions

Objectives:

To propose, design and implement a creative and practical Internet computing applications using available Internet technologies such as HTML, CSS, XML, PHP, Database, JavaScript, Ajax, WebSocket etc.

Project Ideas

Project is a good opportunity for you to practice what you are learning in this course or learn new technologies. By doing the project, you get to design and build a fully-functional web application of your choice. You are encouraged to propose your own ideas for the project. To find an idea, you are encouraged to consult with people in the field to find a problem which has a potential application.

Example projects:

1. Internet-based editors:
    a. Allows multiple users edit a document simultaneously.
    b. A drawing program that allows multiple users to work on the same drawing together.
2. Web system for special needs:
    a. for teachers to manage teaching materials and knowledge base.
    b. A learning system which is useful for different types of users (teachers, students, TAs)
3. A social network such as twitter, facebook.
4. A messaging system such as whatsapp web
5. Web applications with graphical user interface like multiplayer 3D games using WebGL and WebSocket.

Due dates:

Projects are done and submitted in multiple phases as below:

- **Project first phase (proposal) due: Friday Jan. 29th (11:59 p.m.)**
- **Project second phase (prototype) due: Friday Feb. 28th (11:59 p.m.)**
- **Projection presentation due: March 30th, Apr. 1st, and April 3th (10 a.m.)**
- **Final project files and documents due: Apr. 3th (11:59 p.m.)**

Project phases

Phase 1. Project Proposal

- **Requirements**
  - Create a plan for the website/application you propose to build that includes the following:
    - The project description
      - the idea of solutions to the problem you are solving
    - The specification of users of the web site:
      - demographics, interests, technical abilities
    - A flowchart showing the structure of the web site
    - A written description of the functionality of different components
    - The milestones in your project and stating how you are going to achieve each milestone
    - A Schedule for each milestone and the whole project
- **Submission Instructions**
  - One submission per team.
  - A pdf file (~3 pages) named **proposal.pdf** meeting the above requirements:
  - A readme.txt file that follows the given format at the end of this file and includes
    - The names and email addresses of the project team
    - The github link to the project
  - Put all the files in a folder and named username_projectphase1. Zip the folder. Submit ***username_projectphase1.zip*** through MLS
    - Use the username of one of the team members to name your file. Use the same person's username for all other submissions. **Please be consistent throughout different phases.**

Phase 2.Prototype

- **Requirements**
  - Design and implement a prototype of your project. Do not need to implement any server-side functionality at this point.
  - Design your web page in terms of color theme, font style, navigation, number of page, navigation, etc.
  - Justify and document your above design decisions in a pdf file
  - Simply list the techniques you plan to use for implementing your application
- **Submission Instructions**
  - One submission per team.
  - Pdf file (~1 page)
  - A readme.txt file that follows the given format at the end of this file and includes
    - The names and email addresses of the project team
    - The github link to the project

- The project's files
- Put all the files (project files, readme file, and the pdf file) in a folder and zip it. Name the zip file as ***username_projectphase2.zip***. Submit the zip file through MLS
  - Use the username of one of the team members to name your file. Use the same person's username for all other submission. Please be consistent throughout different phases.

Phase 3. Project presentation

- Requirements
  - Each team will have about 6-8 minutes to present the project depending on the time availability
  - Prepare PowerPoint slides for your presentation. In the presentation you should
  - demonstrate the functions that you have implemented, and the major challenges you have experienced in this term project; and
  - Be prepared to explain how the functions are implemented at code level (you may be asked to show the correspondent source codes during the presentation!).
  - Each team member must participate and present during the presentation.
  - During the presentation, you must demonstrate all the key functions of your project.
- Submission Instructions
  - Upload your presentation files by 10 a.m. to MLS. It will be due on the day of your presentation. I will put the files in the computer in the class so we don't need to switch laptops for every presentation.
  - The name format: **username_presentation.pdf**

Phase 4. Final Project files and documents

- Functional requirements
  - Design and implement the data trier of the website, including all the database tables and data to be used in the database and populate the database tables with data
  - Document your database design (e.g., report the E-R diagrams of your database)
  - Use JavaScript libraries such as jQuery and make your page interactive using JavaScript and Ajax.
  - Use a server-side language to develop server side functionalities including connection to Database
  - Use Web APIs on the web. Ideas include:

        - Science related API such as NASA Open API's, Open Notify Space Station API's, Astronomy API, uBio Biological Namebank API, Enrichr Gene Database API
        - Linguistics-related APIs such as Dictionary API, WordNik API, Word Cloud API
        - Fun APIs such as Flickr API, Dog API, Jeopardy Question API, Giphy API, Game of Thrones API, Pokeapi Pokemon API, Trivia Database API, Star Wars API, Deck of Cards API, IGDB Video Game Data API, Data.gov Datasets
    - Incorporate security mechanisms in your website
- Documentation Requirements
    - Explain the functionalities that you have implemented
    - List the web technologies used in the website development and explain why each one is used
    - Provide a documentation for the users on how to use your application
    - Discuss about the experiences and lessons learned in this project as well as the major challenges you have experienced
- Submission Requirements
    - One submission per team.
    - A pdf file containing the project documentation (~6 pages, font size 11)
    - A readme.txt file that includes
        - The names of the project team members
        - A statement that declares the work is done by the listed team members.
        - The URL of your project.
            - You need to host your project on hopper unless you are using technology not supported by hopper.
    - All the files related to your project
    - The evaluation rubric filled out.
    - Put all the files in a folder named **username_final** and zip it. Submit the zip file through MLS
        - Use the username of one of the team members to name your file. Use the same person's username for all other submission. Please be consistent throughout different phases.

Policies

- **Team-work** is required for the final project. A team of at most three members is recommended.
    - The expectation from a team of three is higher than a team of two. The expectation from an individual is NOT less than the expectation from a team of two.
- The student must use github (https://github.com/) to update their project work throughout the term.
- If you are going to develop your projects using technologies not covered in the course, you need to justify your choice in your document and to inform the instructor before second phase is due. You also are responsible to find the system to host your project.

The readme.txt file

```
Team members
Name:
ID:
Email:


Project statement: I claim that the enclosed submission is the
shared work of the team members

Link to the github account:
URL (used for last phase):
```