

## **Course Review and Exam Information**

Week 13 lecture

# Agenda

- Quiz overview
- Assignment 2 overview
  - Server side design variations
    - Standard MVC architecture
    - More sophisticated architecture
  - Implementation variations
  - Between Server and Client
- Exam Information

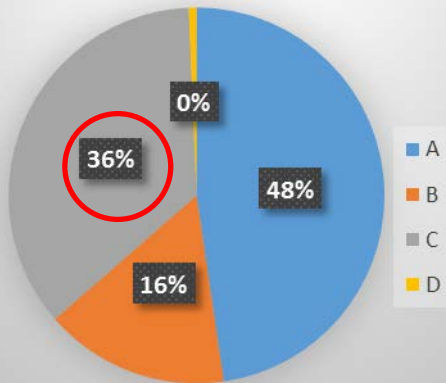
# Quiz overview (Q1)

- Top mark: 92.5
- Question 1 (30 points):
  - 7 students got full mark
  - average: 19.0

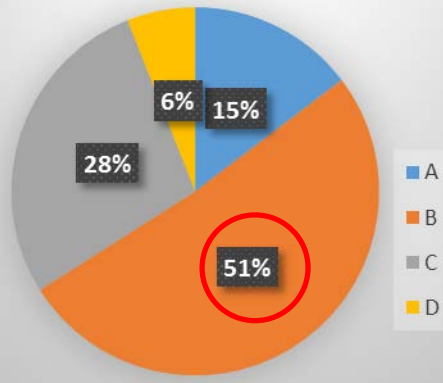
Question number	Content	# Correct
1	HTML tags	54
2	HTTP Protocol	77
3	Sending client data	83
4	CSS selector	140
5	Browser Rendering Process	39
7	URL sections	126
9	HTML 5 semantic tags	67
10	Critical Rendering Path	73

# Quiz overview (Q1)

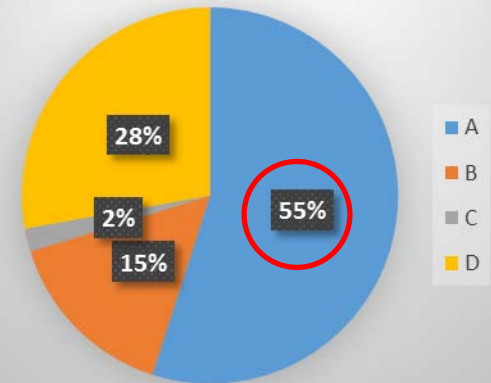
Question 1.1 response distribution



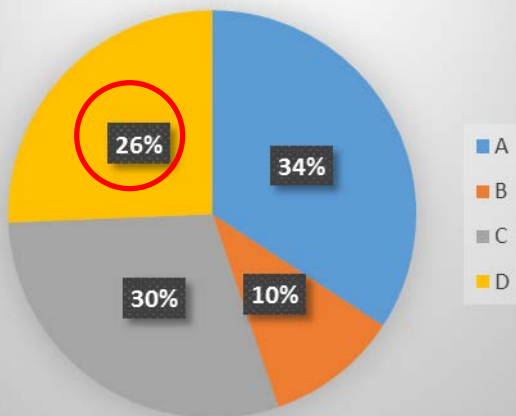
Question 1.2 response distribution



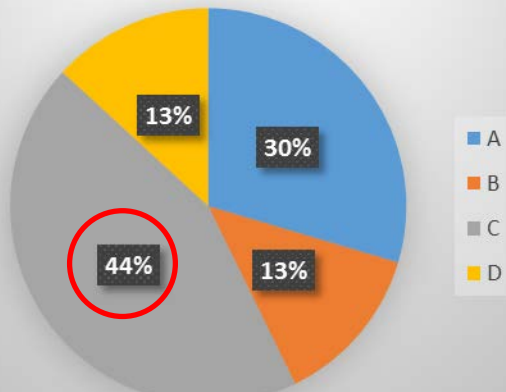
Question 1.3 response distribution



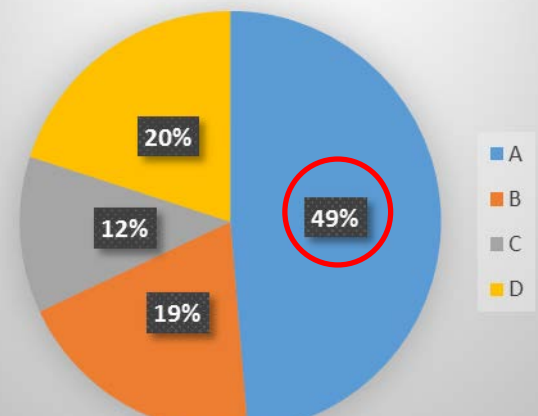
Question 1.5 response distribution



Question 1.9 response distribution



Q1.10 response distribution



# Quiz Overview (Q2-Q5)

- Question 2 (15 points): MongoDB
  - 1 student gets full mark
  - Average: 6.2
- Question 3 (10 points): CSS style
  - 17 students get full mark
  - Average: 4.4
- Question 4 (15 points): HTTP Performance:
  - 5 students get full mark
  - Average: 4.1
- Question 5 (30 points): Express App
  - 4 students get full mark
  - Average: 18.3

# Assignment 2 Review: Design

- Server design variations
  - Simple and Standard MVC architecture
    - Using example from SIT116(Tuesday)\_group1
    - Many groups use similar architecture
  - Beyond simple MVC architecture
    - Using example from SIT114\_group4
  - Business(application) logic layer
  - Data Service layer
- The purpose of layered architecture
  - Reusable component
  - Separation of concerns
  - Maintainable code
  - And more

# Assignment 2 Review: Implementation

- Implementation variables
  - Group by 'user type'
    - Preprocessing by adding a static 'type' field in each document
      - This needs to be done after the API call
    - Postprocessing by aggregating each user's count first
      - Go through the document and compare user name with various lists and aggregate accordingly
    - Running multiple queries ( one for each user type, using \$in operator)
      - Synchronously or asynchronously
  - Group by 'year'
    - Leave timestamp as default String type, use **\$substr**, or **\$substrBytes** to project a new field 'year' in aggregation pipeline
    - Convert timestamp to ISODate type, use **\$year** to extract the year component and project a new field in aggregation pipeline
    - There might be performance difference but not enough details on MongoDB internal to figure out which way provides better performance

# Assignment 2 Review: Client-Server

- Google charting library requires the data to be organized in certain way, should we do this on the server side or the client side?
- The overall page requires many statistics, should we prepare all of them on the server side and sent everything in one response or should we progressively load each statistics?
- The individual page requires dynamic combination of top5 users' statistics, should we send all top5 users data in a single response and use client side code to control the charting display afterwards?



# Asynchronous Control Flow

- Using Promises (<https://www.promisejs.org/>)
- Can be used to chain asynchronous calls
  - To avoid nested callbacks
- Can be used to support parallel execution of multiple asynchronous calls.

# Exam information

- Check carefully time and location as well as your seat number
- Closed book exam
- 2 hour writing time + 10 minutes reading time
- Exam is worth 60% of your total mark
  - Exam is marked out of 100
  - You need to get at least 40 marks in the exam to pass the subject
  - Your final mark is
    - $A1 + \text{Quiz} * 10\% + A2 + \text{Exam} * 60\%$

# Exam Script

- Similar format as QUIZ script
- 15 Multiple Choice Questions (30 points)
  - Simple concept questions
  - Practical questions
    - You will see some code here
- Five short answer questions
- You are not required to WRITE Code in the exam

# Exam technique

- Plan how you will allocate time (wisely)
  - Use “reading time” to check your understanding
  - Also to plan time allocation to questions
  - Plan the order of answering questions
    - E.g. answer easier ones first
- Answer everything (get the “easy marks”)
  - Even if you don’t know the answer, show that you have some relevant knowledge
  - Some questions are flexible and open
- Write clearly and efficiently
  - If you are asked to list features, using bullet points is more efficient and easier to mark
  - Give some brief explanation to your answer if you have time
  - If you are asked to write a long query, break it into multiple lines with indentation
- If you need more space, use blank pages or ask for extra booklet
  - If using blank page, or space, remember to leave a forwarding pointer in the provided space
  - Write your name on booklet

# Illness

- If you are unwell, and it seems that you won't be able to demonstrate your knowledge/skill properly, then you can **request special consideration**
- Follow the same procedure as during semester (get medical person to fill out special USyd form, hand it in within one week)
- Usual outcome: an alternate test, a few weeks later
- If you become sick during the exam itself, raise hand and speak to the invigilator
- The University goal is to get a fair assessment of what you have achieved

# Pragmatic Advice

- Find the room location before the exam day itself!
- Come in plenty of time (don't rely on public transport running smoothly on the day of the exam)
- Bring spare pens
- Bring water
- Have your student id and put it on the desk
- Be relax
  - The exam will not be a surprise
  - It will examine the content of the course, with emphasis similar to lectures, labs, and assignments

# Lab Arrangement

- If you sat the quiz in **lab 114**, **115** and **lab 457**, please go to the respective lab to collect your quiz
  - The tutor will go through the quiz
- If you sat the quiz in **lecture theatre**, please go to lab 116 to collect your quiz
  - You may stay in lab 116 for quiz review, or
  - Go to your regular lab room for quiz review
- If you sat the quiz in **lab 130B**, please stay in the lecture theatre to collect your quiz
  - The lecturer will do the quiz review

# Reminder: Unit of Study Evaluation

- ONLINE survey at
  - <http://www.itl.usyd.edu.au/surveys/complete/default.cfm>

