Test Your Tech

JavaScript is:
A. The earliest known writing by Java Man.
B. Programming language for Web pages.
C. Instructions in the Starbucks bag on how to brew good coffee.

Announcements
• No quizzes for rest of quarter
• No final

Announcements
• Project 2B
  * Submit to Catalyst Collect-It by tonight before 10pm
  * Finishing up:
    • Turn in what you have
    • If something isn’t working, put in comments
    • We’re grading for effort, not for “perfect”

Announcements
• Labs 13 and 14
  * Submit to Catalyst Collect-It by Tuesday, 12/11/07, before 10pm

Announcements
• Extra-Credit Labs
  * Labs 10, 12, 15, and address-munging
    • Address-munging will be posted this weekend
  * Worth up to 25 points extra credit
  * Submit to Catalyst Collect-It by Tuesday, 12/11/07, before 10pm
Announcements

• Extra-credit papers:
  ▫ Worth up to 25 extra-credit points
  ▫ See course listserv archives for topics
  ▫ New topic: Describe how the FIT course could be made more relevant for your community
    ▪ Community = major, age group, ethnicity, heritage, identity, technical background
  ▪ Submit to Catalyst Collect-It by Tuesday, 12/11/07, before 10pm

• Project 3
  ▫ We'll go over it in lecture today
  ▫ Because you don’t have as much time as usual,
    ▪ I've created a database to get you started
    ▪ Download it from the course calendar
    ▪ Two of the three tables are already done
    ▪ One query is already written
  ▪ Submit to Catalyst Collect-It by Tuesday, 12/11/07, before 10pm

Announcements

• Questions about due dates?

Designing Databases

Designing a database requires a “needs analysis”

Needs Analysis

“Needs analysis” -- study the activity to determine what kind of DB is needed
  ▪ Identify who will create information, who will use it
  ▪ Find out the information gathered
  ▪ Find out what information is needed to conduct the activity
  ▪ Find out when the information is created, when it is needed, and how long it must be saved

Standard Process

There are guidelines (no algorithm is possible) for creating a database
  ▪ Needs Analysis
  ▪ First cut at a physical DB solution
  ▪ Refinement of first cut ... assess/improve
  ▪ Define relationships, and create tables
  ▪ Formulate the logical DB solution
  ▪ Refinement of the logical database
  ▪ Create the queries and GUIs
  ▪ Assess
“First Cut” -- Initial Design

Using Entity-Relationship diagrams, create the best physical DB
- Design tables for the information created
- Limit tables to simple entities
- Worry about redundancy
- Assess -- does it make sense?

The design process is iterative
... assess, improve, refine

Building First Physical DB

Build a version of the physical DB and create a few records to test work
- The design is fluid -- don't invest much time in building sample files
- See if it is possible to follow the creation & use of the information through the system
- Eliminating poor designs now saves time

In designing a physical DB you will use relationships
... specify them when the design is stable

Logical database

To formulate the views users want, a new needs analysis may be needed
- Who are the users to be supported by DB
- What information does each person need to see, what information do they enter?
- Using ER diagrams, formulate the tables needed for each user's view
- Assess and refine

Building Logical DBs

With the design in hand, formulate tables using this strategy:
- Catalog what tables will provide the information for a given view table
- Create a supertable (probably using join) containing all data in the view table
- Decide which fields are needed and in what order, and “trim” to that
- Formulate an SQL query for the table

Implementation

A skeleton implementation is built to test out the design, then proceed...
- Try out the full system to assess how it works
- Teach it to the users, and let them try
- Revise and retest if necessary
- Enhance and “bullet proof”

When the system is “deployed”, run both systems briefly to assure nothing falls through the cracks

BoatClub Database

Project 3 illustrates the ideas of database design ... we will try it
- It is much easier to design “on paper” than with computer software ... so work out the whole design before picking up the mouse
BoatClub Database

- Chalk Talk….
  - Designing a database