Amazon Web Services and Microsoft Azure in Teaching

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Why Use the Cloud When Teaching?

- CSE344 – Introduction to Data Management
  - For computer science & eng. majors
- CSE414 – Introduction to Database Systems
  - For non-majors
- Course goals: Learn to use a DBMS
  - DBMS = Database Management System
- Many DBMSs are offered as cloud services
- **Students need to learn how to use them!**
What do We Teach?

Use a cloud DBMS to

• Store data
• Query data with SQL
• Build transaction processing applications
• Perform big data analytics
Which Clouds do We Use?

• **Microsoft Azure**
  – Store data in SQL Server (= SQL Azure)
  – Query data using SQL
    • Use the browser or SQL Server Management Studio
  – Build a Java application that uses SQL Azure
    • Transaction processing application (flight reservation)

• **Amazon Web Services**
  – Use a 20-node EC2 cluster
  – Analyze 0.5TB dataset with Elastic MapReduce
  – Learn Pig Latin
How Does Azure Work?

1. Apply for credits
   1. Go to https://www.microsoftazurepass.com/azureu
   2. Fill out the form
   3. Ask for enough passes to cover the Tas

2. Distribute codes to students
How Does Amazon Work?

• New Amazon Educate Website:
  – Register to get credits
  – Students should register there to get credits

• Website has teaching materials

Free Access to AWS

AWS Educate provides educators, teaching assistants, and students with AWS credits to use AWS services. For educators, we are providing these credits for you to build your courses.
Lessons Learned

• Instructions and procedures change a LOT
  – Start early when preparing for your course
  – Expect instructions to change

• Students forget instances and accumulate charges
  – Warn students! And tell them to setup alarms
  – Contact cloud provider in case something goes wrong

• Instructions for cloud services change all the time
  – Need to test and update assignment every quarter