Digital Divide. Use of computers in the developing world.
Final Exam

- **Tuesday, June 7, 9am**
  - Note that registrar’s exam start time is 8am
  - We will not need 3 full hours for the exam
  - So, start at 9am instead

- Exam review session
  - Friday, June 3, 7pm
  - Jack’s Lounge, Baskin Engineering Building
    - Enter through main doors from street side.
    - Go to coffee cart, turn left
    - Walk about 75 feet.
    - Jack’s Lounge is in to the left. A large space with whiteboards, tables, etc.
Final Exam format

- Will cover material from entire quarter
- Expect to see questions similar to those from first two midterm exams
- Test will be about 50% longer than the typical midterm exam
- Exam study questions include all of the study questions from the first two midterms
- Additional study questions for material since midterm #2 will be given in class on Friday
Importance of Internet access

- Increasingly, access to marketplaces and government services is dependent on being connected to the Internet

- As a consequence, those people who are not connected to the Internet are at a disadvantage
  - Limited access to markets, and hence at mercy of local buyers and sellers of goods
  - Limited access to information, hence reduced ability to make informed decisions and/or to know about relevant services

- Typically, those who are not connected are already poor and societally marginalized
  - Lack of connectivity can reinforce these trends
Digital Divide

- **Digital Divide**
  - As a general term, is used in many different contexts to refer to differences in adoption and use of the Internet between various groups
  - So, for example, one can talk about the digital divide between various groups in the United States (rich vs poor, white vs minority, etc.)

- **Global Digital Divide**
  - Used to describe the difference in use of information technology between different regions of the world
Global Digital Divide circa 2006

The Global Digital Divide

en.wikipedia.org/wiki/File:Global_Digital_Divide1.png

Source: United Nations
Global Development Goals Indicators

Robinson Projection

Cartography by:
Drews Bowers
Estimated Internet Users

**FIGURE 8: ESTIMATED INTERNET USERS, 2000-2010**

Source: ITU, World Telecommunications Indicators Database
http://www.itu.int/ITU-D/ict/statistics/material/graphics/2010/Internet_users_00-10.jpg

Estimated Internet Users by Continent

**FIGURE 9: ESTIMATED INTERNET USERS BY CONTINENT—2005-2010**

Source: ITU, World Telecommunications Indicators Database

Global Digital ICT Use


ICT Use, Developed vs Developing Countries

**Figure 2: ICT Access in Developed Countries, 2005-2010**

- Mobile cellular telephone subscriptions
- Internet users
- Fixed telephone lines
- Mobile broadband subscriptions
- Fixed broadband subscriptions

**Figure 3: ICT Access in Developing Countries, 2005-2010**

- Mobile cellular telephone subscriptions
- Internet users
- Fixed telephone lines
- Mobile broadband subscriptions
- Fixed broadband subscriptions


More people worldwide receive internet service via mobile connections, than via fixed connections.

This trend is accelerating.

Impacts of mobile telephony in Africa

- In Ghana, farmers in Tamale can find out prices of corn and tomatoes in Accra, over 400 kilometers away.
- In Niger an average trip to a market located 65 kilometers away can take 2–4 hours roundtrip, as compared to a two-minute call
  - The call represents a 50% cost savings
  - Mobile phones allow information to be obtained immediately, instead of waiting for weekly newspapers or broadcasts
- In Niger, day laborers can call acquaintances in Benin about job opportunities to see if it worthwhile to make the US $40 trip there to seek work.
  - Mobile phones reduce costs of seeking labor

Projects to improve ICT access

- One laptop per child
  - Ambitious effort to get laptop computers into the hands of children
  - Similar to goals of Scratch, to broadly introduce people to computational thinking

- Drishtee
  - India based company that provides Internet access and classes to remote villages