Preliminaries

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Agenda

- Roadmap
- Syllabus
- Academic integrity
- Homework expectations
- Visual Studio
- Wrap-up
Course Roadmap

463

- Introduction (ch1)
  - Network concepts
  - Web crawler (hw1)
    - HTTP, FTP, SMTP/POP3, P2P
  - DNS (hw2)

- Application layer (ch2)

- Transport layer (ch3)
  - UDP
  - Switching
  - TCP (hw3)

- Network layer (ch4)
  - Routing (hw4)

- Data-link layer (ch5)
  - CSMA/Ethernet
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Syllabus

• Instructor: Dmitri Loguinov, TR 3-4pm in Zoom
• TA: Arif Arman, MF 2-3pm in Zoom
• Main text:
• Submissions and exams: canvas
  ─ Other class materials: http://irl.cse.tamu.edu/courses/463
  ─ Discussion: http://piazza.com/tamu/spring2021/csce463
• Zoom lectures and exams
  ─ Attendance requires a live video feed for the entire duration
  ─ Failure to attend incurs a 0.45% deduction per lecture (10% over 22 lectures) and zero pts on the test
Syllabus 2

• Must use Visual Studio 2019 + Win 10.0.19041 SDK
  − Download Community Edition for free from Microsoft
    https://visualstudio.microsoft.com/vs/
  − When installing, only need “Desktop Development with C++” in the set of options
  − Can use Microsoft APIs or C++11 threads/synchronization

• Prerequisites:
  − Competent C/C++ and debugging skills
  − CSCE 313: Computer Systems
    • Multi-threading and synchronization
  − CSCE 221: Data Structures and Algorithms
    • Queues, sets, hash tables, trees

• Expect heavy coding
Syllabus 3

- Homework (40% of final grade):
  - 4 programming assignments
  - Each explores a different aspect of computer networks

- Exams (60% of final grade):
  - Closed-book, no cheat-sheets
  - 3 quizzes (15% of final grade):
    - Problems from each chapter
  - 3 midterms (45% of final grade):
    - Lecture/homework topics
Syllabus 4

• Grade distribution
  – 90-100% (A), 80-89% (B), 70-79% (C), 60-69% (D), 0-59% (F)

• You cannot pass the class without doing homework

• Student type A: emails for every simple issue
  – How to create a project, start a program, linker errors
  – Instructor ends up googling and sending results back

• Student type B: never asks for help
  – Spends hours or days being stuck on the same problem

• Best route lies somewhere in between
  – Others might have experienced similar problems, asked about them on stackoverflow
  – Perform initial investigation, obtain insight into the issue
Syllabus 5

- If nothing useful emerges, ask for help
  - Through piazza (general concepts) or email (code-specific)
  - During class, office hours
- If problem is solved, answer your own question
  - Help others with their questions on piazza
- If emailing
  - Provide a clear description of the problem, where it occurs, and what you have done to debug it
- Read my tutorial on pointers, debugging, APIs
  - [http://irl.cs.tamu.edu/courses/463/systems%20notes.pdf](http://irl.cs.tamu.edu/courses/463/systems%20notes.pdf)
  - Call stack, breakpoints, immediate/watch/thread window, common debugging techniques, stepping thru code
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Academic Integrity

• No teamwork
  – Discussion with other students is fine, but all submissions must be original and yours

• Cannot use external sources unless explicitly cleared with the instructor
  – If such usage is allowed, acknowledge where the code came from; MSDN examples and 463 sample code are automatically allowed and do not require acknowledgment

• For more details, see Academic Rules, Section 20

• All parties involved in cheating will be penalized equally
  – F* in the class or expulsion from university
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Homework

- Homework:
  - Due at 10am, 20% penalty per day (no points after 5 days)
  - Delays for personal reasons must be requested in advance

- Soft copy:
  - Add a comment to the top of each cpp/h file with your full name, class, and semester
  - Create a zip containing only *.sln, *.cpp, *.h, *.lib, *.vc*proj*, delete everything else (especially the hidden directory .vs)
  - Preserve the original directory structure inside the zip
  - Upload to canvas.tamu.edu
  - Submitted code should compile as is, release & debug
Homework 2

- Windows machines for this class
  - You can use your laptop/desktop for most tasks
  - But on some of the benchmarks, Suddenlink and dorms are likely to block your connections

- Alternatives
  - Use Azure for students ($100 credit per year)
  - Visit https://azure.microsoft.com/en-us/free/students/
  - Allows you to spin up a virtual machine (Server 2016 or 2019) in the cloud, run your code over Remote Desktop

- Department Windows servers (need VPN)
  - ts.cse.tamu.edu and ts2.cse.tamu.edu
  - Use Remote Desktop to access them
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Wrap-up

• Homework #1 is due in three parts:
  – Part 1 (1/26): load a single page
  – Part 2 (2/2): crawl a list of pages with one thread
  – Part 3 (2/16): multi-threaded crawler & report

• Suggestions:
  – Read my programming tutorial and hw1p1
  – Formulate questions about them
  – Experiment with VS 2019