COL1000
Introduction to Programming

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Most (if not all) of the content is borrowed from Prof. Subodh Kumar's slides

*COL*1000 so far!!

Shoot Your Questions!!

1. Sections and Labs
2. Grading
3. Sign up on Piazza — We will communicate only on Piazza
4. Moodle for announcement — Our webpage is hosted on Moodle.
5. Acadly for attendance.
6. Installing python 3.X

   Python 3 Installation & Setup Guide – Real Python
7. Please attend labs!!

Important Links!!

- ERP: https://eacad.iitd.ac.in/
- Mail server: https://webmail.iitd.ac.in/
- Learning Management Server: https://moodlenew.iitd.ac.in
- Microsoft Teams: https://teams.microsoft.com
- Attendance : https://www.acadly.com/
- Storage Service: ssh://ssh1.iitd.ac.in, https://owncloud.iitd.ac.in
  - Home space (via CIFS, ssh, mail), Owncloud, Sharepoint, Git
- Computer Services : https://csc.iitd.ac.in
  Quick access ➜ Howto

Authentication

1. Authentication is the process of verifying your identity when accessing services.
   Examples: Logging in to ERP, Webmail, or Moodle with your @iitd.ac.in credentials.
2. Importance: Prevents unauthorized access to your information.

Authentication

- https is secure because ..
  - Data transferred between client software on your device and remote server is encrypted
    - Including password (can be decrypted only by the server)
  - Remote server can remember "password" of each user (or ask an authenticator) and match
    - e.g., Kerberos server
  - But should you trust the responding server? How to know it is the server you think it is?
    - It presents its own password ("certificate") How do you verify? "CA" (certificate authority).
  - No need to trust the server to keep password safe (or even know it)
    - oauth (server redirects to oauth server, which verifies the user and informs the server)

Identity

- Different digital services may share identities (username)
  - But often maintain separate accounts
- IIT Delhi services use Kerberos to authenticate identity
  - One-to-one mapping between Entry number and "Kerberos ID" (aka login id, user id)
  - But your gmail or bank identities are different
    - Although tracking cookies are used to construct your *behavioral identity*
  - Even additional accounts in labs or hostel systems may use a different identity

Data Protection

- Some services are sandboxed
  - Each person's data is separate, with explicit per-document sharing option
  - Sharepoint, Google Drive
- Linux File systems have a more primitive protection
  - Data organized into Directories (aka Folders)
    - Directories contain files and other directories (aka Sub-directory)
  - People organized into *Owner, Group, Others*
    - Permissions: *read*, *write*, *execute* access for each file and directory
  - Modern linux allows per-user access control list

Incognito Mode

- Incognito mode (or private browsing) is a special window in your web browser that doesn't save your activity on your own device.
- What Incognito DOES:
    - It does not save:
        - Your browsing history
        - Cookies and site data
        - Form inputs (like what you typed in a search box

Incognito Mode

- Incognito mode (or private browsing) is a special window in your web browser that doesn't save your activity on your own device.
- What Incognito DOES NOT DO:
    - It does not not make you anonymous on the internet.
    - Your University or Wi-Fi provider can still see what you are doing.
    - The websites you visit can still track you (they see your IP address).
    - Downloads and bookmarks stay even after you close incognito.

More Services

- Virtual Machine server https://baadal.iitd.ac.in
  - In addition to lab desktops, and ssh servers
- High Performance Computer https://hpc.iitd.ac.in
- Network Service IITD_WIFI
  - Private network (e.g., in Hostels, Labs, Wifi)
  - Local IP address assignments, Mac address tracking and limits, Port closure
  - Hostel and Wifi networks require authentication (of Kerberos ID)
  - VPN (to connect in) and Proxy (to connect out) e.g., https_proxy on wired network

Network Etiquette & Safety

- Do not share password, write it down, or enter it on unverified sites
  - Keep is safe; change it frequently
- Do not send abusive, repetitive, mass email (unwanted mail = SPAM)
  - Mail server certifies sender; sender is not anonymous
- Do not use un-licensed software on IITD network
  - Many such applications 'dial home' and you can be traced
- Do not download pirated books or movies (including BitTorrent, etc.)
  - It is criminal

Differentiate between:
1. To & Cc:
2. Reply and Reply All

Not a Secret Recipe (But It Works)

- Ask questions — repeatedly
  - In class, In lab, online, outside class
  - Seek help (Instructors and TAs)
- Practice programming in the lab and outside
  - Learn to recognize common errors (and parse error messages)
    - Try again and again .. (sometimes a short break helps)
- Attend, Take notes, Review slides and in-class program

  Be regular — Catching up later is harder
- Do not miss emails; follow instructions carefully Keep your institute login ID working