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Software Technologies - CS3002  
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Saurabh Barjatiya  
IIIT Hyderabad

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# **1 Lectures (Tentative)**

## **1.1 Shell commands**

Following categories of shell commands will be covered

- Filesystem related shell commands (cd, rm, etc.)
- File contents related commands (more, cat, wc, etc.)
- File format related commands (bzip2, gunzip, file, convmv etc.)
- Search related file commands (find, locate, grep, which etc.)
- Help related commands (man, apropos, whatis, etc.)
- System information related commands (df, free, top, etc.)
- Process control related commands (ps, kill, etc.)
- Environment variables related commands (set, export, etc.)
- Superuser commands (mount, umount, sync, etc.)

## **1.2 Connecting to MySQL, PostgreSQL, sqlite and ndbm using C**

Details to be decided

## **1.3 Shared memory, semaphores and signals using C**

Details to be decided

## **1.4 Multi-processing, multi-threading and pipes using C**

Details to be decided

## **1.5 GUI programming through GTK**

Details to be decided

## **1.6 TCP, UDP, Unix and Raw sockets using C**

Details to be decided

## **1.7 Select, poll, read, write on sockets. SSL connection and basic encryption using C**

Details to be decided

## **1.8 Capturing and injecting packets using libpcap and libnet**

Details to be decided

## **1.9 Using ncurses for console graphics and handling large files (2GB) using C**

Details to be decided

## **1.10 Connecting to Oracle using proc (if time permits)**

Details to be decided

# **2 Labs (Tentative)**

## **2.1 Shell commands**

In this lab students should practice all the basic shell commands taught in lecture or present in lecture slides. Students should also read man pages to learn new commands on their own.