Programming and Data Structures Lab Section 1

DRC, SD, SB

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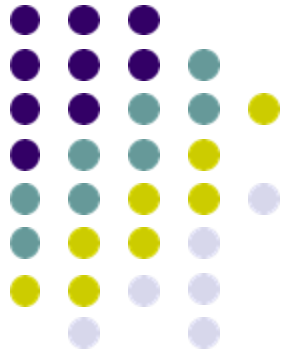
Department of Computer Science and Engineering



TA-Systems' Mapping

Name	Machine No	Email
Gulabi Mandal,		
Akash Bhattacharya		
Shreyasee Patra		
Somnath Hazra		
Varuni Reddy		
Jagriti Singh		
Gourav Sarkar		

TA-Systems' Mapping

Name	Machine No	Email
Anisha Mitra		
Tapadyoti Banerjee		
Abhinandan Mondal		
Subhankar Roy		
Gadiparthi Vamsi Krishna		
Gautam Veer		
Dilip Sau		

Rules

- Class Timings: Wednesday (10:00AM - 1:00PM)
- Venue: PC-Lab- ____ , CIC (Takshashila ground floor)
- All assignments to be done in the lab and submitted before the lab concludes
- Any attempts to copy will involve severe penalties
  - **0** for the assignment copied for **BOTH** the person copying and the person copied from
  - Any repeat offense will result in **deregistration** from the course

Moodle Details

- All submissions will be made through moodle only.
- Login / Create Account on Moodle:

  https://moodlecse.iitkgp.ac.in/moodle/login/index.php

- Find Course page on Moodle:

  “PDS Lab Section 1 (Spring 2024-2025)”

  Enroll as Student using the following key

  STUD#PDS5@

Computing Environment

- Dell Desktop Systems
- Ubuntu 22 operating system
  - username: ____ password: _____

- Text editor: **gedit**
  - For typing in your C program
- C language compiler: **gcc**
  - For compiling the C program

Computing Environment

- Opening terminal
  - Click on **Show Applications** > Search **Terminal** > Enter
  - Alternatively: Press *Ctrl* + *Alt* + *T*

Some Basics

- Your programs will be stored in files
- Files are stored in directories (folders in windows)
- Directories will contain other subdirectories and files
- You may create a separate subdirectory for each of your assignments so that you can find them easily

Some Useful Linux Commands

- **pwd** – shows the current directory you are in
- **ls** – shows the contents (Files and subdirectories) of the current directory
- **mkdir X** – creates a subdirectory named X under the current directory
- **cd X** – changes the current directory to the directory named X under it

Example

- Open Terminal
- Type **ls** and *Enter* (should see Desktop Documents …)
  - These are the directories
- Type **cd Documents** and *Enter* (now you are inside Documents dir)
  - Verify by typing **ls** and *Enter*
  - You will write all your codes inside Documents dir.
- Now we will create a new dir. inside Documents
  - Type **mkdir day0** and *Enter* (your day0 dir. is created)
  - Type **cd day0** and *Enter* (inside day0 dir. Notice that the current path is displayed before the cursor)

Parallely review the steps in the GUI application **Files**

Example

- Verify if you are inside **day0** dir**.** Type **pwd** and *Enter*
- Now that you are inside **day0** dir. we will create a file
- The file will contain our code (in text) that we want to run
- Type **gedit filename.c &** to open file with name filename.c inside day0 dir.
    - Example type **gedit asg0.c &** - file with name asg0.c will be created
    - Verify using the GUI
- Type your example code and save it (*Ctrl* + *S*) before closing gedit

Now download the **asg1.c** file from Moodle and move it to day0 using the GUI

Basic Program Execution

- Writing your program
  - Open your file in a text editor (gedit)
  - Type your program in the text editor
  - Save it
- Compile and run your program
  - Open a terminal
  - Call gcc to compile and then run

Compiling and Running Your C Program

- In the terminal window, at the $ prompt, type

  gcc asg1.c

- If the compilation is successful, you should see the **$** prompt come back with no errors
- Run the program by typing

  ./a.out

- You should see the console asking for inputs

IMPORTANT

- Every time you change something in the file, you must
  - **Save it again**
  - **Compile it again**

- This will generate a new executable a.out with the changes
- Verify it using GUI

IMPORTANT

- Every program must start with a comment containing
  - Section No.
  - Machine no.
  - Roll No.
  - Name.
  - Assignment No.
  - A one line description of the assignment

Example Header

```
/*************************************
 * Section : 1
 * Machine No. : N
 * Roll No. : 23AB100XY
 * Name : name surname
 * Assignment No : 0
 * Description : first C program
*************************************/
```

```
#include <stdio.h>
int main()
{
    // printf() displays the string inside quotation
       printf("Hello, World!");
       return 0;
}
```