

Assignment-5

Deadline: 9th Feb 2017

Please ensure that your program must run using the gcc compiler of 172.16.1.3 server.

- a) A group of students from a city based science college of Patna came to IIT to participate and enjoy the cultural nights of Anwasha. As they had previously registered for this, a complete row on the right side of the stage was booked for them so that they can sit adjacent to each other. If there is a student of certain height, all the students to the right side of him/her having lesser heights cannot see the stage. If the heights are given, the task is to find the total number of such students who can see the stage.

One student got bored and started thinking of a problem, as from his/her seat the stage was not visible. The problem was to identify if an ongoing party was an "only boys" party or an "only girls" party. As the rules are strict, no co-ed parties are allowed for the student's research. After many researches, he/she came to a conclusion that if all the persons in the party are wearing different colored robes, then that is a girl's only party. If we even get one duplicate color, then it must be a boy's party. He/She has now asked you to code (file name `assign5a.c`) his/her theorem so that he/she may move on to more advance research.

Sample I/P:

Enter the number of students participated: 6

Enter their heights: 6 2 8 4 11 13

Enter the color of robes denoted by integers: 1 3 2 4 5 1

Sample O/P:

No. of students can see the stage: 4

It is a BOYS party.

Sample I/P:

Enter the number of students participated: 5

Enter their heights: 2 5 1 8 3

Enter the color of robes denoted by integers: 1 2 3 4 7

Sample O/P:

No. of students who can see the stage: 3

It is a GIRLS party.

- b) In a party, N no. of guests are invited (N should be atleast 10). Each of the guests is assigned a unique id (Guest's ids range from -i to +i). The unique ids should be entered by the user randomly. Maximum guests that can be accommodated in the party is 15. The guests will seat in decreasing order of their ids. The seating arrangement should be such that each row has 5 seats. Now write a program (`assign5b.c`) perform the followings-
- Display the seating arrangement of the guests.
 - Input a unique id and search if it is assigned to a guest or not and also display the seating

arrangement for that particular guest id.

- If the unique id is positive then it indicates female guest otherwise the guest is male. Find the no. of male and female guests and also display their guest ids.
- If the unique id is even it represents guests dressed in red and if odd then the guests are dressed in blue. Find the no of guests dressed in blue and red and also display the seating arrangement of the red and blue dressed guests respectively.

Suppose a new guest arrives, check if there is any seat to accommodate the guest and also make the new guest sit in his correct position according to the unique id provided. Display the new seating arrangement.

Sample I/P:

Enter the unique ids of the guests: 4,-2,8,7,3,-1,9,6,-4,-7

Enter the id to be searched: 7

Enter the unique id of the new guest: -6

Sample O/P:

The seating arrangement is:

9, 8, 7, 6, 4

3, -1, -2, -4, -7

The guest with id 7 is present in the party and is seated at position 3.

There are 4 males and 6 females.

The male guest id's are: -1, -2, -4, -7

The female guest ids are: 9, 8, 7, 6, 4, 3

There are 5 guests in red and 5 guests in blue dress respectively.

The seating positions of the guests in red dress are: 2, 4, 5, 8, 9

The seating positions of the guests in blue dress are: 1, 3, 6, 7, 10

The new seating arrangement is:

9,8,7,6,4

3,-1,-2,-4,-6

-7

Program Formatting Instruction: Students are advised to write their programs with proper care. A program must have a header block consisting of programmer's name and rollno, along with date of creation. In the header, also include the objective of the program in one line. The program should be properly indented and it is expected that you will use meaningful variable names. For each functional block provide a short and relevant comment.

Submission Process: Submit your assignment (make sure your assignment can be executed in using gcc compiler) using the link- <http://172.16.1.3/~samrat/CS112/submission/> Login using your rollno (ex: 1601CS01) and password. Once you login, change the password immediately. It is your responsibility to set a strong password that is not guessable by others. Upload the assignments using the specified filenames only. After the due date (mentioned at top), the uploading of files may be allowed for few more time but it will be treated as late submission. So ensure that you submit the assignment on time. There will be penalty if you are found to take any unfair means during the lab hours and during the assignment submission process. **Copying program from any other source and allowing others to copy your program, both will be penalized equally.**

