Lab 4: C++, JAVA, Python

1. You have to enter a string and check whether it is a perfect string or not. A perfect string is a string which has occurrence of every character only once. Eg. Absdhkqwertyuioplmnvczx

2. Write a program makes two player number game. Players are to feed in an integer number which is not used in the program, but keeps the player engaged in the game. For each player, a random number is generated. The player who gets higher number is the winner. The winner gets points equal to the difference between the two random numbers

3. Finding your beer. A large number of college students are attending a party. Each guest is drinking a can of beer (or soda of they are under 21). An emergency causes the lights to go out and the fire alarm to go off. The guests calmly put down their beer and exit the building. When the alarm goes off, they re-enter and try to retrieve their beer. However, the lights are still off, so each student randomly grabs a bottle of beer. What are the chances that at least one student gets his or her original beer? Write a program MyBeer.java that takes a command-line argument N and runs 1,000 simulations this event, assuming there are N guests. Print out the fraction of times that at least one guest gets their original beer. As N gets large, does this fraction approach 0 or 1 or something in between?

4. Most frequent digit- Given a number, the objective is to find out the most frequently occurring digit in the number. If more than 2 digits have the same frequency, return the smallest digit. The number is input as a string and the output should be the digit as an integer. For e.g. if the number is 12345121, the most frequently occurring digit is 1. If the number is 9988776655 the output should be 5 as it is the smallest of the digits with the highest frequency.