CS6011 ASSIGNMENT 3, DEADLINE: OCT 30, 23:59 OCTOBER 10, 2016

Write a program to do the following in Java. 10 marks for coding style (variable names, indentation, modularity, comments, error handling etc)

Suppose IITH has 100 students. There are four departments, with 25 students each. Create a record for each student with important values like roll number, date of birth, address, department and gender. Their primary key is the roll number, which is alloted to them in FCFS fashion when they join the Institute, and has nothing to do with their departments. Using appropriate universal familes of hash functions, construct the following:

1. A perfect hashing scheme for enrollment into the departments. The size of the primary hash table for each department should be 15. Each student is enrolled upfront in one of these branches, which stays for his/her life time in the Institute. Operations to be supported: insert, search. (20 marks)

2. A hashing scheme for CS6010, wherein students can register and deregister. Assume that a student from any branch can take this course. The hash table should have 25 primary slots. Collisions have to be resolved through chaining. Operations to be supported: insert, delete, search. (20 marks)

3. Run experiments and gather statistics to justify the respective "search" times derived theoretically in the class. (10 marks)