Data Structure and Algorithms
Fall 2023
BS CS
Assignment # 3

Deadline: 14th December 2023 (Till Midnight)

Instructions (To be followed very strictly):

- Assignment will not be considered after the mentioned deadline.
- In case of cheating, all involved will get a straight "ZERO".
- Comment your code generously.
- Your submission files should be named as:
  - <ID>.pdf

Assignment Statement:

Question # 1: (CLO 3) **[10]**

Given a hash table of size 17 and two hash functions, $H_1(K) = K\ Mod\ 17$ and $H_2(K) = 1 + (K\ Mod\ 13)$. $H_1(K)$ determines the starting location and $H_2(K)$ is the probe function that determines the offset in case of collision. Draw the contents of the hash table if open addressing with double probing is used to resolve collisions. What values will be in the hash table after the following sequence of insertions? Show your work for partial credit.

6, 13, 17, 21, 28, 15, 33, 23, 32, 22, 3, 37

Note:

1) Make sure to provide the step-by-step execution of each value.
2) Further, the assignment is handwritten.
3) Scan your pages via scanning application (Cam Scanner) and bind them into the single PDF file.
4) Each page in your file should have the name and ID on the top of the page.
5) All the pages without the name and ID will not be considered for marking.
6) Lastly, you must have a complete understanding of your assignment. Any misunderstanding about your written instruction in the assignment during viva will lead to zero marks.