

Hashing Practice problems:

1. Implement a hash data structure that has student Id (integer) as key, and Student name (String) as data.
2. Implement a hash data structure that has student Id (integer) as key, and Student name (String), address (String), and CGPA (float) as data.
3. Implement a hash data structure that has the following hashing formula:
$$\text{idx} = (2 * \text{key} + 1) \% \text{SIZE}$$
4. Write a program to detect conflict while inserting a new key-value pair. A conflict happens when the key does not map to the expected index (calculated by hash function).