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- 1. The attribute(s) the index is defined on:
  - a) 'SIN', 'DateOfBirth'
  - b) 'RouteID'
  - c) 'BusID'
  - d) 'ArrivalTime'
- 2. Properties of the index:
  - a) 'SIN', 'DateOfBirth' Clustered index, Composite Index
  - b) 'RouteID' Hash index
  - c) 'BusID' Hash index
  - d) 'Date' Hash index or tree index
- 3. The queries(1-12) which be helped:
  - In 2 queries, we need find number of Person who is student. Now we can define the composite index on 'DateOfBirth' and 'SIN'. The input data will be sorted. Consequently, we can set a range for date, then the data base will depend on the date of Birth to immediately get Person satisfied with this range of date. Then we can count the SIN and get the number of Person. If we use occupation and DateOfBirth, it will cause the duplicate. Then we have to modify these duplicate SINs. It takes more time to sort.
  - b) There several queries such as 3, 7(c),8(a),9 and 12. We set index on date, it is helpful for queries. After we set index on date, the inner will save the actual position in data base and point to it. Therefore, when we want to find an exactly date in the data set which satisfied the requirements, it can turn to the row that we need. It saves time on searching all the time in dataset.
  - c) In the same way, we can set index either on 'RouteID' and 'BusID' in queries 8(a),9,11 and 12. In these queries, we need to find two tables have the same RouteID or BusID. Thus, defining on either these two attributes, database does not need search all the RouteID or BusID and compare them, it will point to the row that we need. It is not only efficiency way to match but also save the time for searching.