# CSC430/530 – Database Management Systems

Assignment #5 – Indexing Structures

Consider a disk with a block size **B = 1024 bytes** and a block pointer **P = 12 bytes**. Suppose, file has **r = 69632**

EMPLOYEE records of fixed length. Each record has following attributes:

* First\_name (*60 bytes*);
* SSN (*18 bytes*);
* Dnumber (*18 bytes*);
* Home\_address (*80 bytes*);
* Contact\_phone (*20 bytes*);
* BDate (*16 bytes*);
* Gender (*2 byte*);
* Job\_code (*8 bytes*);
* Salary (*8 bytes*);
* Additional *2 bytes* are used as a deletion marker.

1. Assuming an unspanned organization, calculate following.

# \*To get full points, please, show all formulas and calculations.

* + Record size **R** (in bytes).
  + Blocking factor **bfr.**
  + Number of file blocks **b**.

1. Assuming file is ordered by key attribute **Ssn** and primary index is constructed on this key attribute, calculate following.

# \*To get full points, please, show all formulas and calculations.

* + Index blocking factor **bfri**.
  + Total number of indexes **ri** and number of index blocks **bi**.
  + Total number of accesses needed to search for a record using primary index.