Database Systems Lab

SESSION 5

DELETE Operation

In this lab session, you will implement the DELETE operation to delete existing record in the data file.

Complete the following tasks:

Modify the PDS function as per the following:

A) rollno_pds.c Changes

```
int pds_create(char *repo_name)
// No Change

int pds_open(char* repo_name, int rec_size)
// No Change

int pds_load_ndx()
// No Change

int put_rec_by_key(int key, void*rec)
{
  // (NEW) ENSURE is_deleted is set to 0 when creating index entry
}

int get_rec_by_ndx_key(int key, void*rec)
{
  // (NEW) Check if the entry is deleted and if it is deleted, return PDS_REC_NOT_FOUND
}

int pds_close()
{
// (NEW) Ignore the index entries that have already been deleted.
}

int get_rec_by_non_ndx_key(void *key, void *rec, int (*matcher)(void *rec, void *key), int
*io_count)
{
  //   (NEW) Check the entry of the record in the BST and see if it is deleted. If so, return
PDS_REC_NOT_FOUND
}

// New function to be implemented
int delete_rec_by_ndx_key( int key) // New Function
{
  // Search for the record in the BST using the key
  // If record not found, return PDS_DELETE_FAILED
  // If record is found, check if it has already been deleted, if so return PDS_DELETE_FAILED
  // Else, set the record to deleted and return PDS_SUCCESS
}
```

B) rollno_contact.c Changes

Add the following functions to contact.c

```
int search_contact_by_phone( struct Contact *c, char *phone );
// No Change

int match_contact_phone( struct Contact *c, char *phone );
// No Change

// Function to delete a record based on ndx_key
int delete_contact ( int contact_id )
{
	// Call the delete_contact_ndx_key function
	// Return CONTACT_SUCCESS or CONTACT_FAILURE based on status of above call
}
```

Testing

a. The following driver program is given to you:
   - pds_tester.c (generic testing with input data file like testcase.in)

b. Test your program thoroughly with the above driver program by creating your own test input files

Commands

- Use the following command for creating pds_tester executable:

```
gcc -o pds_tester bst.c rollno_contact.c roll_pds.c pds_tester.c
```

For testing using pds_tester, use the following command:

```
pds_tester testcase.in
```

Submission

Upload the following to LMS as a zipped file (IMTXXXXXXX.zip):

- rollno_pds.c
- rollno_contact.c

Make sure you only use with the bst.c provided to you.

YOU ARE NOT EXPECTED CHANGE ANY OF THE OTHER FILES GIVEN TO YOU