CSI 402 – Systems Programming

Creating an empty database (random access) file

Handout 2.2

The following program sets up a database which contains 100 empty records. The result is an unformatted (or binary) file. Subsequent handouts show how these empty records can be updated and read from.

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#define  NEMP  100
#define  NAME_MAX  20

#define  DB_NAME  "emp_db.bin"

struct employee{
  char name[NAME_MAX];
  int  empid;
  float  salary;
};

typedef struct employee EmpRec;

/* This program creates a  file (database) that can  */
/* hold information for up to NEMP employees.       */

/* The initial database contains only "dummy" records */
/* with empid = -1.                                    */

/* The name of the file containing the database is    */
/* given by DB_NAME.                                   */

int main(void) {

  FILE *dbf;   /* Employee database (output file) */

  EmpRec dummy; /* Dummy record. */
  int  i;       /* Loop index. */
```

(over)

```
  /* Initialize dummy record. */

  dummy.empid = -1; strcpy(dummy.name, "");
  dummy.salary = 0.0;

  /* Open the database file. */

  if ((dbf = fopen(DB_NAME, "w")) == NULL) {
     fprintf(stderr, "Could not open file: %s\n", DB_NAME);
     exit(1);
  }

  /* Write NEMP dummy records. */

  for (i = 0; i < NEMP; i++)
    fwrite((const void *) &dummy, sizeof(EmpRec), 1, dbf);


  /* Close the database file. */

  if (fclose(dbf) == EOF) {
     fprintf(stderr, "Could not close file: \n", DB_NAME);
  }

  return 0;

} /* End of main. */
```