

## CSI 402 – Systems Programming

### Reading records from a database (random access) file

<b>Handout 2.4</b>
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The following program uses the database file (“`emp_db.bin`”) created by the program in Handout 2.2 and updated by the program in Handout 2.3. It reads each of the records. Every record for which the `empid` field has a value different from `-1` is written to `stdout`.

---

```
#include <stdio.h>
#include <stdlib.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 reads a file (database) that holds */
/* information for up to NEMP employees.           */

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

/* Employee records that are valid (i.e., whose empid */
/* field values are not -1) are printed to stdout.    */

int main(void) {

    FILE *dbf; /* Employee database (input file) */
    EmpRec e; /* Temporary record. */
    int i; /* Loop index. */
```

(over)

```

/* Open the database file. */

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

/* Read each record and output those that are valid records. */

for (i = 0; i < NEMP; i++) {
    fread((void *) &e, sizeof(EmpRec), 1, dbf);
    if (e.empid != -1) { /* Valid record */
        printf("%d %s %f\n", e.empid, e.name, e.salary);
    }
}

/* Close the database file. */

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

return 0;

} /* End of main. */

```