CSI 402 – Systems Programming – Handout 11.1
Data Members of `struct stat`

Note: To retrieve information stored in the Inode of a file, the system calls `stat`, `fstat` and `lstat` use a `struct` called `stat`. The data members of this `struct` are shown below. The types used in this structure are defined in `<sys/types.h>`.

For additional information, please see Section 3.3 of the text by Haviland et al.

```
struct  stat  {

    dev_t     st_dev;   /* ID of device containing a directory entry */
                        /* for this file.                            */

    ino_t     st_ino;   /* Inode number of the file. */

    mode_t    st_mode;  /* File type and protection bits. */

    nlink_t   st_nlink; /* No. of (hard) links. */

    uid_t     st_uid;   /* User ID of file's owner. */

    gid_t     st_gid;   /* Group ID of file's group. */

    dev_t     st_rdev;  /* This entry is defined only for char special */
                        /* and block special devices. It gives the     */
                        /* device ID of the file.                      */

    off_t     st_size;  /* Logical file size (in bytes). */

/* According to POSIX standard, the times given below are measured */
/* in seconds since 00:00:00 UTC (GMT), Jan. 1, 1970.             */

    time_t    st_atime; /* Time of last access. */

    time_t    st_mtime; /* Time of last data modification. */

    time_t    st_ctime; /* Time of last file status change. */

    long      st_blksize;  /* Preferred I/O block size. */

    long      st_blocks;   /* No. of st_blksize blocks allocated. */
};
```