SYSTEM FUNCTIONS

- It helps us execute a command string within a program
- System is implemented by calling fork, exec and waidpid

  #include <stdlib.h>

  int system (const char *cmdstring);
- Return values of system function
- -1 – if either fork fails or waitpid returns an error other than EINTR
- 127 -- If exec fails [as if shell has executed exit]
- termination status of shell -- if all three functions succeed

```
#include        <sys/types.h>
#include        <sys/wait.h>
#include        <errno.h>
#include        <unistd.h>
int system(const char *cmdstring)
        /* version without signal handling */
{
        pid_t   pid;
        int     status;
        if (cmdstring == NULL)
                        return(1);
        /* always a command processor with Unix */
                if ( (pid = fork()) < 0)
        {
                        status = -1;
          /* probably out of processes */

                } else if (pid == 0)
         {                                      /* child */
                execl("/bin/sh", "sh", "-c", cmdstring,
                                                (char *) 0);
```

```
                _exit(127);             /* execl error */
    }
    else {                              /* parent */
        while (waitpid(pid, &status, 0) < 0)
            if (errno != EINTR) {
                status = -1;

                /* error other than EINTR from waitpid() */
                 break;
            }
        }
        return(status);
    }
```

/*calling system function*/

```
#include    <sys/types.h>
#include    <sys/wait.h>
#include    "ourhdr.h"
int main(void)
{
        int             status;
        if ( (status = system("date")) < 0)
                err_sys("system() error");
        pr_exit(status);
if ( (status = system("nosuchcommand")) < 0)
                err_sys("system() error");
        pr_exit(status);
        if ( (status = system("who; exit 44")) < 0)
                err_sys("system() error");
        pr_exit(status);
        exit(0);
}
```

Source : http://elearningatria.files.wordpress.com/2013/10/cse-iv-unix-and-shell-programming-10cs44-notes.pdf