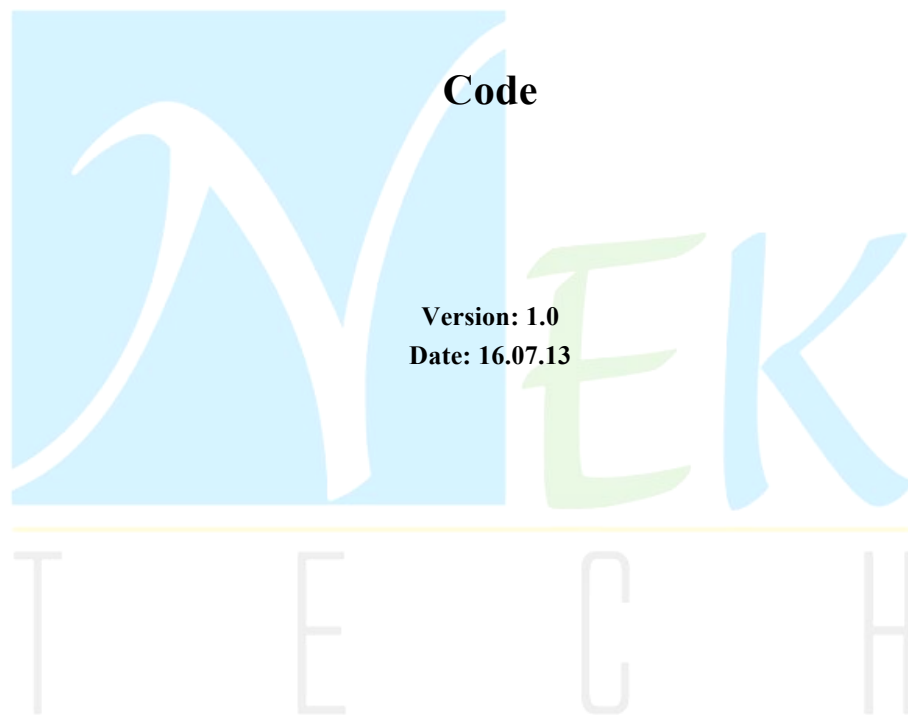


## NEK Tech Shell Development



NEK Tech

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---

```
nektech@nektech-desktop:~/prog/nektech_shell$ pwd  
/home/nektech/prog/nektech_shell
```

```
nektech@nektech-desktop:~/prog/nektech_shell$ ls  
cmd_execution.c  input_parser.c  Makefile  nektech_shell.h  ReadMe.txt
```

```
nektech@nektech-desktop:~/prog/nektech_shell$ cat Makefile
```

```
all: nektech_shell
```

```
nektech_shell: input_parser.o cmd_execution.o  
    gcc input_parser.o cmd_execution.o -o nektech_shell
```

```
cmd_execution.o: cmd_execution.c  
    gcc -c -g cmd_execution.c
```

```
input_parser.o: input_parser.c  
    gcc -c -g input_parser.c
```

```
clean:  
    rm -rf *.o nektech_shell
```

```
install:  
    cp ./nektech_shell /bin
```



---

```
nektech@nektech-desktop:~/prog/nektech_shell$ cat nektech_shell.h
```

```
/* NEK Tech shell */
/*
 * nektech-shell.h - Linux Shell
 *
 * Copyright (C) NEK Tech 2013
 * Developers V1.0:      Deepika Pandey
 *                      Pallavi Gadge
 *                      Shubhangi Maheshwari
 * Author and Architect: Pankaj Saraf
 *
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 *
 * /

#include <sys/types.h>
#include <unistd.h>
#include <stdlib.h>
#include <errno.h>
#include <stdio.h>

#define MAX_LEN 1024
#define MAX_ARG 16

/* NEK Tech Shell:
```

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---

```
* Changes Directory of the shell process.  
*/  
void change_dir(char *argv[]);  
  
/* NEK Tech Shell:  
* Executes the command in traditional fork/exec manner.  
*/  
void run_cmd(char *argv[]);
```



```
nektech@nektech-desktop:~/prog/nektech_shell$ cat input_parser.c
/* NEK Tech shell */
/*
 * input_parser.c - Linux Shell
 *
 * Copyright (C) NEK Tech 2013
 * Developers V1.0: Deepika Pandey
 * Shubhangi Maheshwari
 * Author and Architect: Pankaj Saraf
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 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
 *
 */

#include <sys/wait.h>
#include <string.h>
#include "nektech_shell.h"

main()
{
    char cmd[MAX_LEN];
    char *cmd_arg[MAX_ARG];
    int cmdlen, i, j, tag;
```

```
do{
    /* init cmd */
    for(i=0;i<MAX_LEN;i++) cmd[i]='\0';

    printf("NEK Tech>> ");
    fgets(cmd,MAX_LEN,stdin);

    cmdlen=strlen(cmd);
    cmdlen--;
    cmd[cmdlen]='\0';

    for(i=0;i<MAX_ARG;i++) cmd_arg[i]=NULL;
    i=0; j=0; tag=0;
    while(i<cmdlen && j<MAX_ARG){
        if(cmd[i]==' '){
            cmd[i]='\0';
            tag=0;
        }else{
            if(tag==0)
                cmd_arg[j++]=cmd+i;
            tag=1;
        }
        i++;
    }

    if(j>=MAX_ARG && i<cmdlen){
        printf("TOO MANY ARGUMENTS\n");
        continue;
    }
    /* cmd_arg NULL Condition. */
    if (cmd_arg[0] == NULL )
```

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```

        continue;

        /* cmd quit/exit/q: exit NEK Tech Shell */
        if((strcmp(cmd_arg[0],"quit")==0) ||
(strcmp(cmd_arg[0],"exit")== 0) || (strcmp(cmd_arg[0],"q")== 0))
            break;

        /* command change Directory */
        if(strcmp(cmd_arg[0],"cd")==0){
            change_dir(cmd_arg);
            continue;
        }

        /* other cmd for fork/exec*/
        run_cmd(cmd_arg);
    }while(1);
}

/* cd - Change Directory */
void change_dir(char *argv[])
{
    if(argv[1]!=NULL){
        if(chdir(argv[1])<0)
            switch(errno){
                case ENOENT:
                    printf("DIRECTORY NOT FOUND\n");
                    break;
                case ENOTDIR:
                    printf("NOT A DIRECTORY NAME\n");
                    break;
                case EACCES:
                    printf("YOU DO NOT HAVE RIGHT TO ACCESS\n");

```

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```
        break;
    default:
        printf("SOME ERROR HAPPENED IN CHDIR\n");
    }
}
}
```

```
nektech@nektech-desktop:~/prog/nektech_shell$ cat cmd_execution.c
```

```
/* NEK Tech shell */
/*
 * cmd_execution.c - Linux Shell
 *
 * Copyright (C) NEK Tech 2013
 * Developers V1.0: Pallavi Gadge
 * Author and Architect: Pankaj Saraf
 *
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 * it under the terms and conditions of NEK Tech.
 *
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 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
 *
 */

#include "nektech_shell.h"

/* command Execution.*/
```

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```

void run_cmd(char *argv[])
{
    pid_t child_pid;

    child_pid=fork();
    if(child_pid<0){
        printf("SOME ERROR HAPPENED IN FORK\n");
        exit(2);
    }else if(child_pid==0){
        if(execvp(argv[0],argv)<0)
            switch(errno){
                case ENOENT:
                    printf("COMMAND OR FILENAME NOT FOUND\n");
                    break;
                case EACCES:
                    printf("YOU DO NOT HAVE RIGHT TO ACCESS\n");
                    break;
                default:
                    printf("SOME ERROR HAPPENED IN
EXEC\n");
            }
        exit(3);
    }else
        wait(NULL);
}

```



---

```
nektech@nektech-desktop:~/prog/nektech_shell$ cat ReadMe.txt
```

```
This Software is Developed in NEK Tech Labs and used for educational and learning Purpose of the students.
```

```
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```

```
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```

```
Please run following commands on the Linux Terminal:
```

```
make all
```

```
sudo make install
```

```
nektech_shell
```

```
To quit NEK Tech Shell, Please run quit/exit/q command on NEK Tech Shell.
```

