



**ATMA RAM SANATAN DHARMA
COLLEGE**

UNIVERSITY OF DELHI



**PROGRAMMING IN OPERATING SYSTEM
PRACTICE FILE**

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Q2.

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

int main()
{

printf("\nKernel Version");
system("cat /proc/sys/kernel/osrelease");
printf("\n the cpu info \n");
system("cat /proc/cpuinfo");
return 0;
}
```

```
raj@raj-VirtualBox:~/OS$ gcc q2.c
raj@raj-VirtualBox:~/OS$ ./a.out
5.15.0-47-generic
Kernel Version
the cpu info
processor       : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 126
model name     : Intel(R) Core(TM) i3-1005G1 CPU @ 1.20GHz
stepping       : 5
microcode      : 0xffffffff
cpu MHz        : 1190.403
cache size     : 4096 KB
physical id    : 0
siblings       : 2
core id        : 0
cpu cores      : 2
apicid         : 0
initial apicid : 0
fpu            : yes
fpu_exception  : yes
cpuid level    : 22
wp             : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx rdtscp lm constant_tsc rep_good nopl xtopology nonstop_tsc cpuid tsc_known_freq pnt ssse3 cx16 pcid sse4_1 sse4_2 hypervisorlahf_lm invpcid_single tbsr_enhanced fsgsbase invpcid md_clear flush_lid arch_capabilities
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs mmio_stale_data retbleed
bogomips       : 2380.80
clflush size   : 64
cache alignment : 64
address sizes   : 39 bits physical, 48 bits virtual
power management:

processor       : 1
vendor_id      : GenuineIntel
cpu family     : 6
model          : 126
model name     : Intel(R) Core(TM) i3-1005G1 CPU @ 1.20GHz
stepping       : 5
microcode      : 0xffffffff
cpu MHz        : 1190.403
cache size     : 4096 KB
physical id    : 0
siblings       : 2
core id        : 1
cpu cores      : 2
apicid         : 1
```

```

Initial apicid : 0
fpu : yes
fpu_exception : yes
cpuid level : 22
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx rdtscp lm constant_tsc rep_good nopl xtopology nonstop_tsc cpuid tsc_known_freq pni ssse3 cx16 pcid sse4_1 sse4_2 hypervisor lahf_lm invpcid_single tbrs_enhanced fsgsbase invpcid md_clear flush_lid arch_capabilities
bugs : spectre_v1 spectre_v2 spec_store_bypass swapgs mmls_state_data retbleed
bogomips : 2380.80
clflush size : 64
cache_alignment : 64
address sizes : 39 bits physical, 48 bits virtual
power management:

processor : 1
vendor_id : GenuineIntel
cpu family : 6
model : 126
model name : Intel(R) Core(TM) i3-1005G1 CPU @ 1.20GHz
stepping : 5
microcode : 0xffffffff
cpu MHz : 1190.403
cache size : 4096 KB
physical id : 0
siblings : 2
core id : 1
cpu cores : 2
apicid : 1
initial apicid : 1
fpu : yes
fpu_exception : yes
cpuid level : 22
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx rdtscp lm constant_tsc rep_good nopl xtopology nonstop_tsc cpuid tsc_known_freq pni ssse3 cx16 pcid sse4_1 sse4_2 hypervisor lahf_lm invpcid_single tbrs_enhanced fsgsbase invpcid md_clear flush_lid arch_capabilities
bugs : spectre_v1 spectre_v2 spec_store_bypass swapgs mmls_state_data retbleed
bogomips : 2380.80
clflush size : 64
cache_alignment : 64
address sizes : 39 bits physical, 48 bits virtual
power management:

```

Q3.

```

#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>

int main()
{
    int a;
    printf("\nKernel Version");
    system("cat /proc/sys/kernel/osrelease");
    printf("\n configured free and used memory:\n");
    system("cat /proc/meminfo | awk 'NR==1, NR==2 {print}'");
    return 0;
}

```

```

raj@raj-VirtualBox: ~/OS$ gcc q3.c
raj@raj-VirtualBox: ~/OS$ ./a.out

5.15.0-47-generic
Kernel Version
configured free and used memory:
MemTotal:      1537844 kB
MemFree:       67728 kB
raj@raj-VirtualBox: ~/OS$

```

Q4.

```
#include <stdio.h>
#include <sys/stat.h>
#include <time.h>

int main(int argc, char *argv[3])
{
    int i;
    struct stat buffer;
    printf("Give File Name:");
    for(i=1; i<argc; i++)
    {
        printf("file=%s\n", argv[i]);
        //stat("foo",)
        if(stat(argv[i], &buffer)<0)
        {
            printf("Error in file Started");
        }
        else
        {
            printf("owner: %d\ngid= %d\n", buffer.st_uid,
                buffer.st_gid);
            printf("Access Permission=%d\n", buffer.st_mode);
            printf(" Last Access time= %s\n", ctime(&buffer.st_atime));
            printf(" Last Modify time= %s\n", ctime(&buffer.st_mtime));
        }
    }
    return 0;
}
```

```
raj@raj-VirtualBox:~/OS$ gcc q4.c
raj@raj-VirtualBox:~/OS$ ./a.out q4.c
Give File Name:file=q4.c
owner: 1000
gid= 1000
Access Permission=33204
Last Access time= Fri Sep 23 22:27:08 2022

Last Modify time= Fri Sep 23 22:27:04 2022
raj@raj-VirtualBox:~/OS$
```