Operating System Lab
Assignment 2
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122CS0107

Q1.
Code:

```c
1 #include <stdio.h>
2 #include <unistd.h>
3
4 int main()
5 {
6     int byte_size = write(1, "hello_arnav\n", 12);
7     printf("\n%d\n", byte_size);
8     return 0;
9 }
```

Output:
```
nitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$ gcc q1.c
nitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$ ./a.out
hello_arnav

12
```

Q2.
Code:

```c
1 #include <stdio.h>
2 #include <unistd.h>
3
4 int main()
5 {
6     char buff[20];
7     read(0,buff,20);
8     for (int i = 19; i >= 0; i--)
9     {
10         printf("%c", buff[i]);
11     }
12
13     return 0;
14 }
```

Output:
```
nitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$ gedit q2.c
^C
nitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$ gcc q2.c
nitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$ ./a.out
HelloArnav&World
?h+
dlroW&vanrAolleHnitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$
```
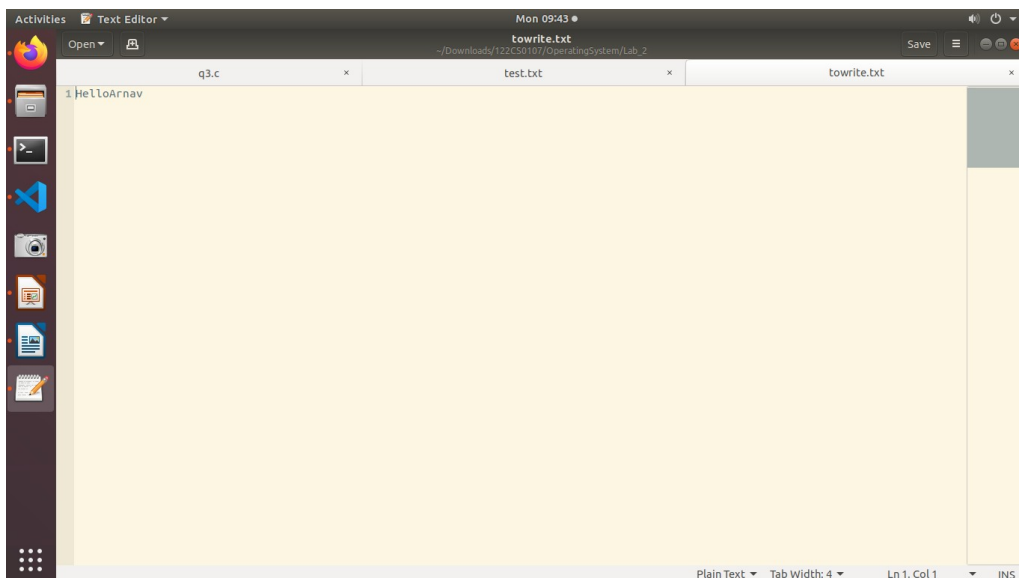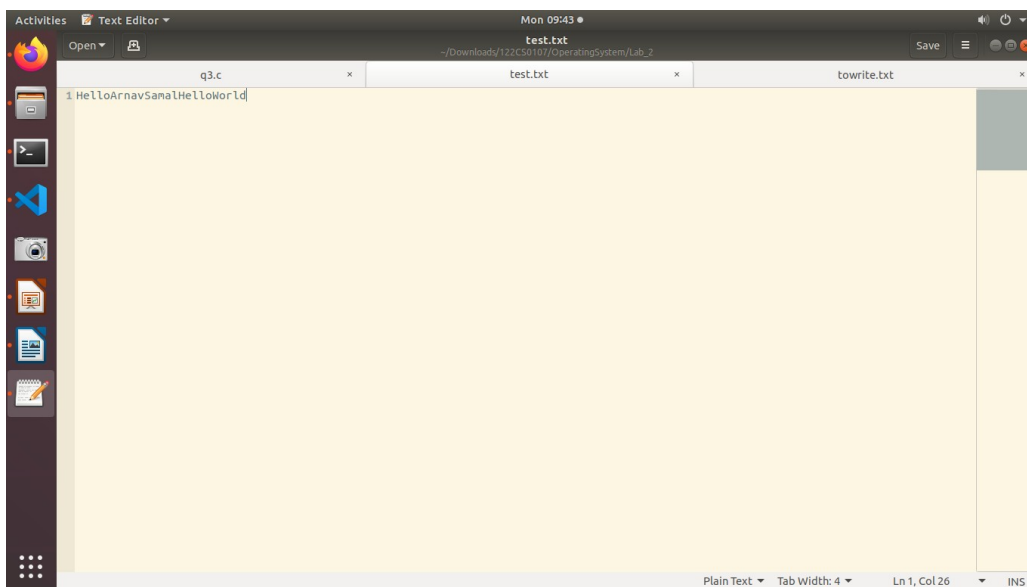
Q3.
Code:

```c
1 #include <stdio.h>
2 #include <unistd.h>
3 #include <fcntl.h>
4
5 int main()
6 {
7     char buff[20];
8     int fd1 = open("test.txt", O_RDONLY);
9     read(fd1, buff, 20);
10    int fd2 = open("towrite.txt", O_CREAT | O_RDWR);
11    write(fd2, buff,10);
12
13    return 0;
14 }
```

Output:

```
nitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$ gcc q3.c
nitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$ ./a.out
nitr@nitr-HP-Compaq-Elite-8300-SFF:~/Downloads/122CS0107/OperatingSystem/Lab_2$
```

Q4.
Code:

```c
1 #include <stdio.h>
2 #include <unistd.h>
3 #include <fcntl.h>
4
5 int main()
6 {
7     char buff[256];
8     int fd1 = open("test.txt", O_RDONLY);
9     read(fd1, buff, 256);
10    int fd2 = open("towrite.txt", O_CREAT | O_RDWR);
11    write(fd2, buff, 256);
12
13    return 0;
14 }
```

test.txt:

```
      q4.c              ×          test.txt            ×          towrite.txt          ×

1 1609
2
3 THE SONNETS
4
5 by William Shakespeare
6
7
8
9                   1
10  From fairest creatures we desire increase,
11  That thereby beauty's rose might never die,
12  But as the riper should by time decease,
13  His tender heir might bear his memory:
14  But thou contracted to thine own bright eyes,
15  Feed'st thy light's flame with self-substantial fuel,
16  Making a famine where abundance lies,
17  Thy self thy foe, to thy sweet self too cruel:
18  Thou that art now the world's fresh ornament,
19  And only herald to the gaudy spring,
20  Within thine own bud buriest thy content,
21  And tender churl mak'st waste in niggarding:
22    Pity the world, or else this glutton be,
23    To eat the world's due, by the grave and thee.
24
25
26                   2
27  When forty winters shall besiege thy brow,
28  And dig deep trenches in thy beauty's field,
29  Thy youth's proud livery so gazed on now,
30  Will be a tattered weed of small worth held:
31  Then being asked, where all thy beauty lies,
32  Where all the treasure of thy lusty days;
33  To say within thine own deep sunken eyes,
34  Were an all-eating shame, and thriftless praise.
35  How much more praise deserved thy beauty's use,
36  If thou couldst answer 'This fair child of mine
```
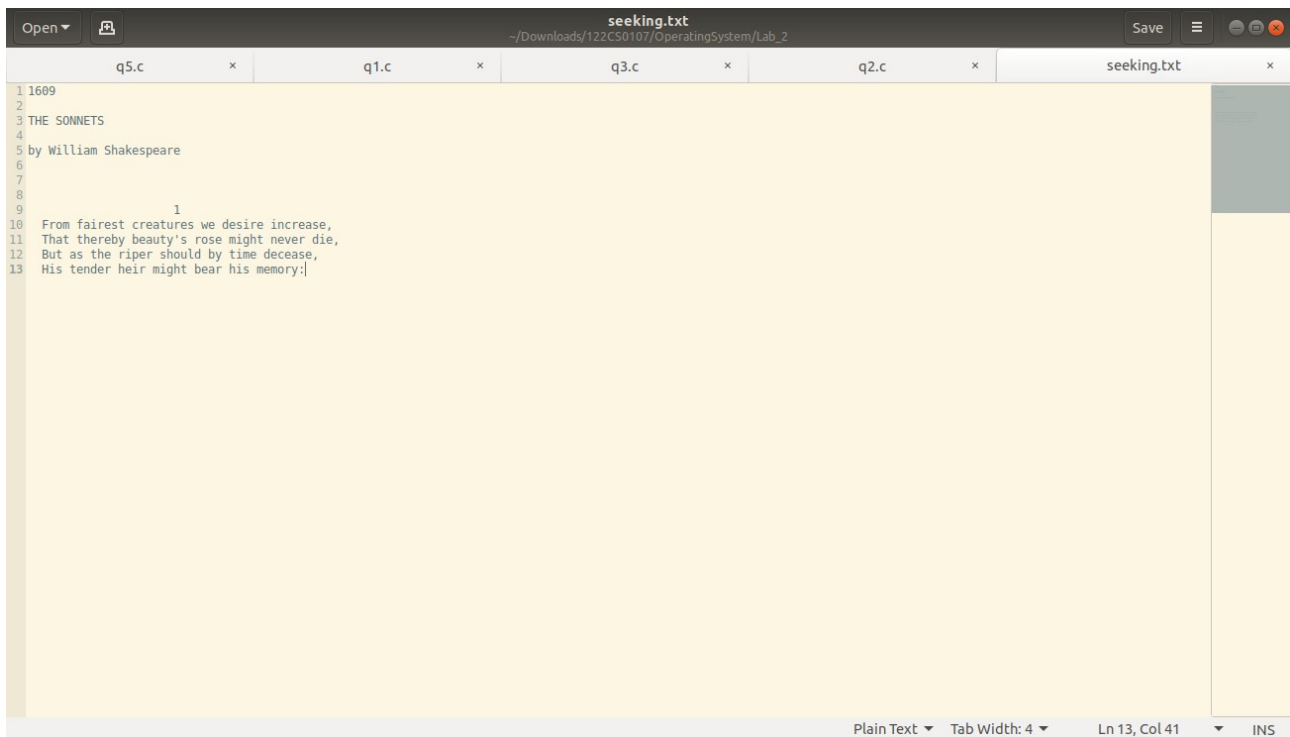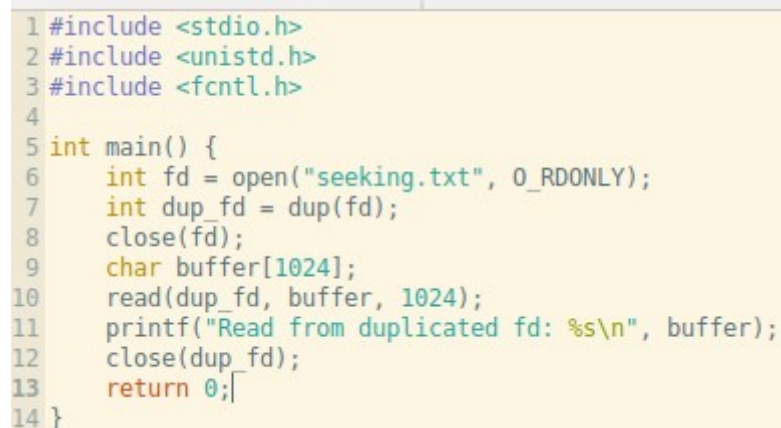
Output:

towrite.txt:

Open ▾   q4.c ×   test.txt ×   towrite.txt ×   Save ≡

```
1 1609
2
3 THE SONNETS
4
5 by William Shakespeare
6
7
8
9              1
10  From fairest creatures we desire increase,
11  That thereby beauty's rose might never die,
12  But as the riper should by time decease,
13  His tender heir might bear his memory:
14  But thou co
```

Plain Text ▾   Tab Width: 4 ▾   Ln 14, Col 14   ▾   INS

Q5.
Code.

```c
1 #include <stdio.h>
2 #include <unistd.h>
3 #include <fcntl.h>
4
5 int main() {
6     char buff[11];
7     int fd1 = open("seeking.txt", O_RDONLY);
8     if (fd1 == -1) {
9         perror("open");
10         return 1;
11     }
12
13     read(fd1, buff, 10);
14     buff[10] = '\0';
15     printf("First 10 characters: %s\n", buff);
16
17     read(fd1, buff, 10);
18     lseek(fd1,10,SEEK_CUR);
19
20     buff[10] = '\0';
21     printf("Next 10 characters: %s\n", buff);
22
23     close(fd1);
24     return 0;
25 }
```

seeking.txt:

Output:

Q6.
Code-

```c
#include <stdio.h>
#include <unistd.h>
#include <fcntl.h>

int main() {
    int fd = open("seeking.txt", O_RDONLY);
    int dup_fd = dup(fd);
    close(fd);
    char buffer[1024];
    read(dup_fd, buffer, 1024);
    printf("Read from duplicated fd: %s\n", buffer);
    close(dup_fd);
    return 0;
}
```

Output:

Q7.
Code:

```c
1 #include <stdio.h>
2 #include <unistd.h>
3 #include <fcntl.h>
4
5 int main() {
6     int fd = open("seeking.txt", O_RDONLY);
7     dup2(fd, 5);
8     close(fd);
9     char buffer[1024];
10    read(5, buffer, 1024);
11    printf("Read from duplicated fd: %s\n", buffer);
12    close(5);
13    return 0;
14 }
```

Output: