OS Lab Assignment

Submitted By:
Manroop Parmar
101906134 3EC6

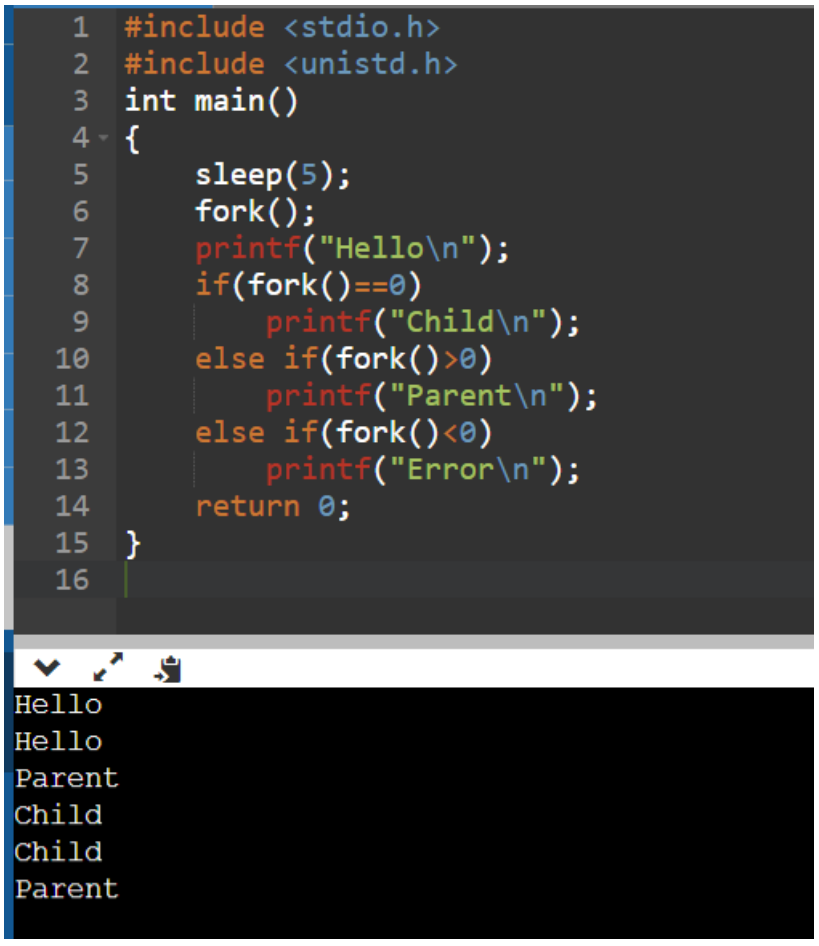
1. write ‘C’ program to implement the process creation system calls.

```
#include <stdio.h>
#include <unistd.h>
int main()
{
   fork();
   printf("Hello World");
   return 0;
}
```

2. write ‘C’ program to create child with ‘sleep’ command.

```
#include <stdio.h>
#include <unistd.h>
int main()
{
   sleep(5);
   fork();
```

```
printf("Hello\n");
if(fork()==0)
   printf("Child\n");
else if(fork()>0)
   printf("Parent\n");
else if(fork()<0)
   printf("Error\n");
return 0;
 }
```



```
#include <stdio.h>
#include <unistd.h>
int main()
{
    sleep(5);
    fork();
    printf("Hello\n");
    if(fork()==0)
        printf("Child\n");
    else if(fork()>0)
        printf("Parent\n");
    else if(fork()<0)
        printf("Error\n");
    return 0;
}
```

```
Hello
Hello
Parent
Child
Child
Parent
```

3. How many times “Hello” will be printed?

main {
fork ( );
printf (“Hello”);
}

Hello will be printed 2 times.

```c
#include <stdio.h>
#include <unistd.h>
int main()
{
fork();
printf("Hello\n");
return 0;
}
```

```
Hello
Hello
```

4. Count the total number of processes created in the following program-

main {
fork ( );
fork ( );
printf (“Hello”);
}

There are 2^(2)-1 = 3 child processes and one parent process. So total of 4 processes are there.

```c
#include <stdio.h>
#include <unistd.h>
int main()
{
    fork();
    fork();
    printf ("Hello\n");
    return 0;
}
```

```
Hello
Hello
```

5. How many child processes will be created?

```
main {
        fork ( );
        fork ( );
        fork ( );
        printf (“Hello”);
       }
```

There are 2^(3)-1 = 7 child processes.

main.c

```c
#include <stdio.h>
#include <unistd.h>
int main()
{
    fork ( );
    fork ( );
    fork ( );
    printf ("Hello\n");
    return 0;
}
```

```
Hello
Hello
```

6. How many times “Hello” will be printed?

```
main ( ) {
            if ( fork ( ) && fork ( ) )
            fork ( );
            printf (“Hello”);
}
```

Hello will be printed 4 times.

```c
#include <stdio.h>
#include <unistd.h>
int main()
{
    if ( fork ( ) && fork ( ) ) fork ( );
    printf ("Hello\n");
    return 0;
}
```

```
Hello
Hello
```

7. How many child processes will be created?

```
main ( ) {
        if ( fork ( ) || fork ( ) )
        fork ( );
        printf (“Hello”);
}
```

5 child processes will be created