**POSIX APIs**

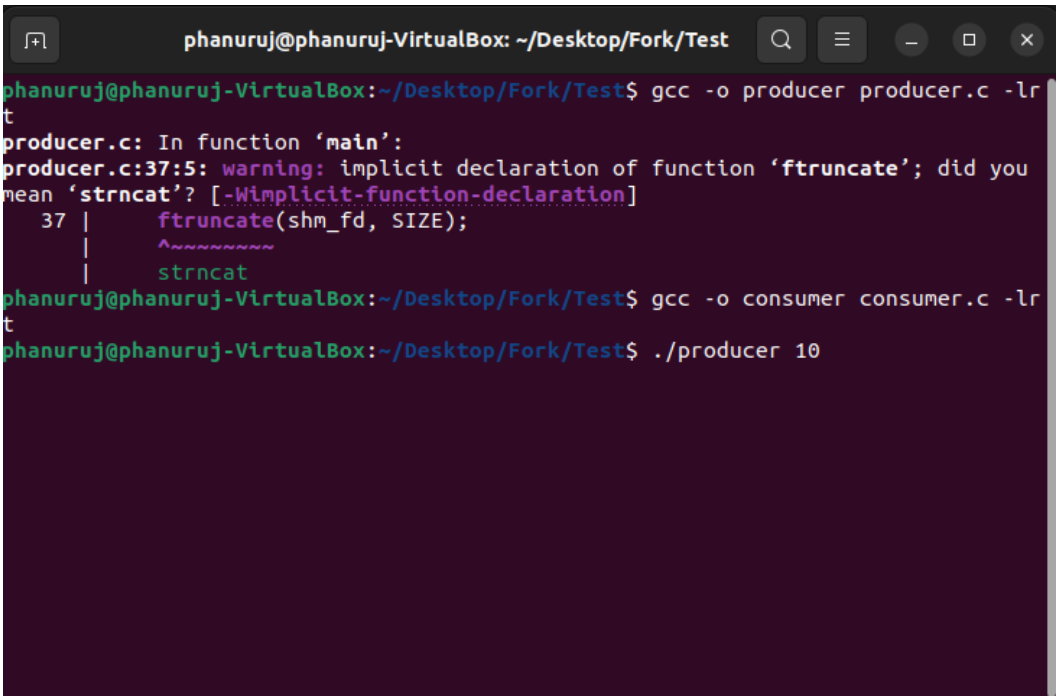
The code consists of two programs: producer.c and consumer.c. The producer program takes an integer as an input, calculates the sum of integers from 1 to that input, and then stores the result in shared memory. The consumer program reads the result from shared memory and displays it on the screen. If there is an error, the producer program stores an error message in shared memory instead of the result.

To run the program, first compile the producer.c and consumer.c programs separately by running the following commands in the terminal:

```
gcc -o producer producer.c -lrt
gcc -o consumer consumer.c -lrt
```

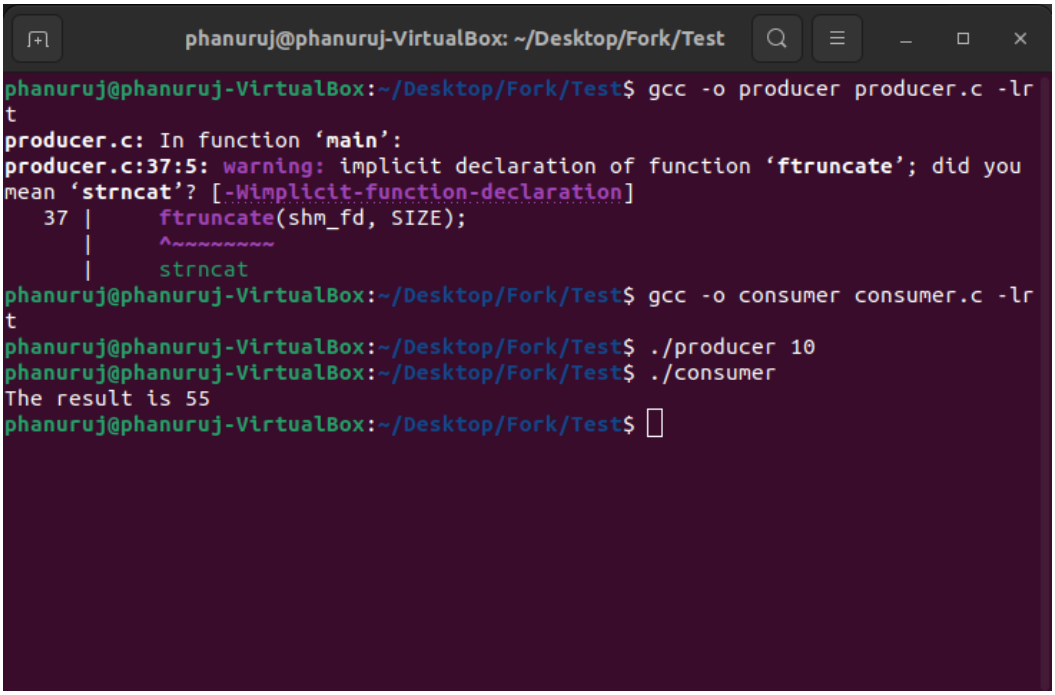
Then, run the producer program with an integer argument, for example:

```
./producer 10
```




This will calculate the sum of integers from 1 to 10 and store the result in shared memory.

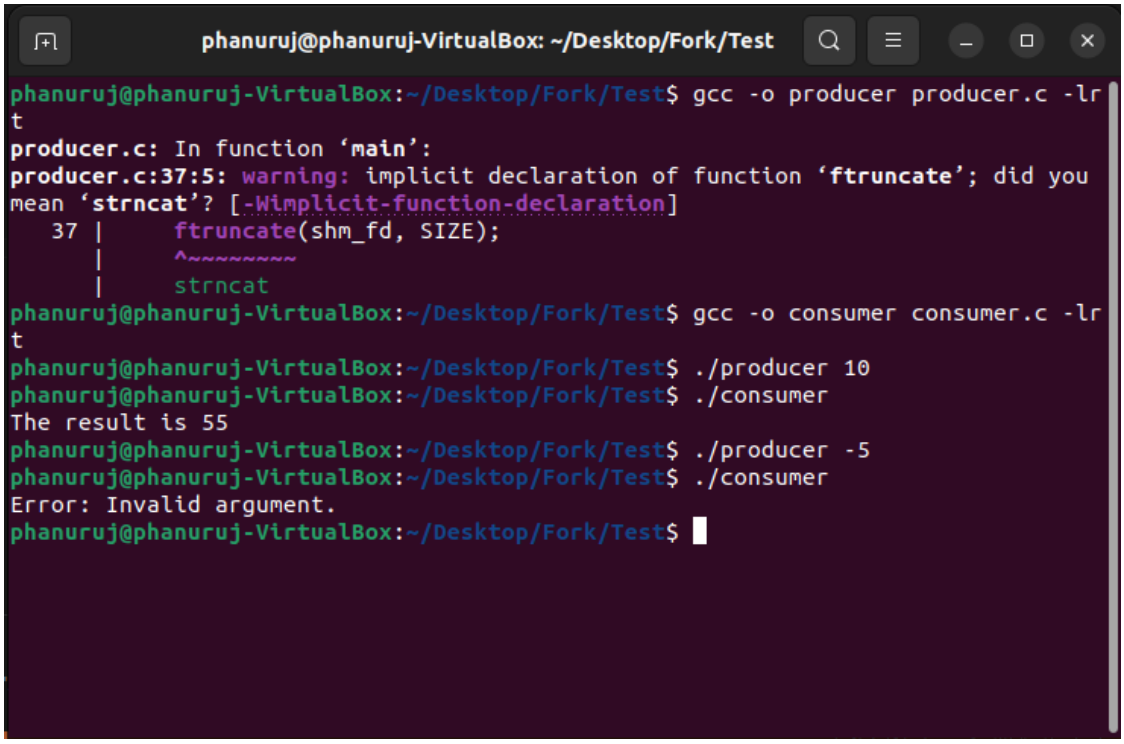
Next, run the consumer program:
./consumer




This will read the result from shared memory and display it on the screen.

If the input to the producer program is not a valid positive integer, it will store an error message in shared memory instead of the result. When the consumer program reads from shared memory, it will detect the error message and display it on the screen.

But if we Input -5 (error case) it will display:

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