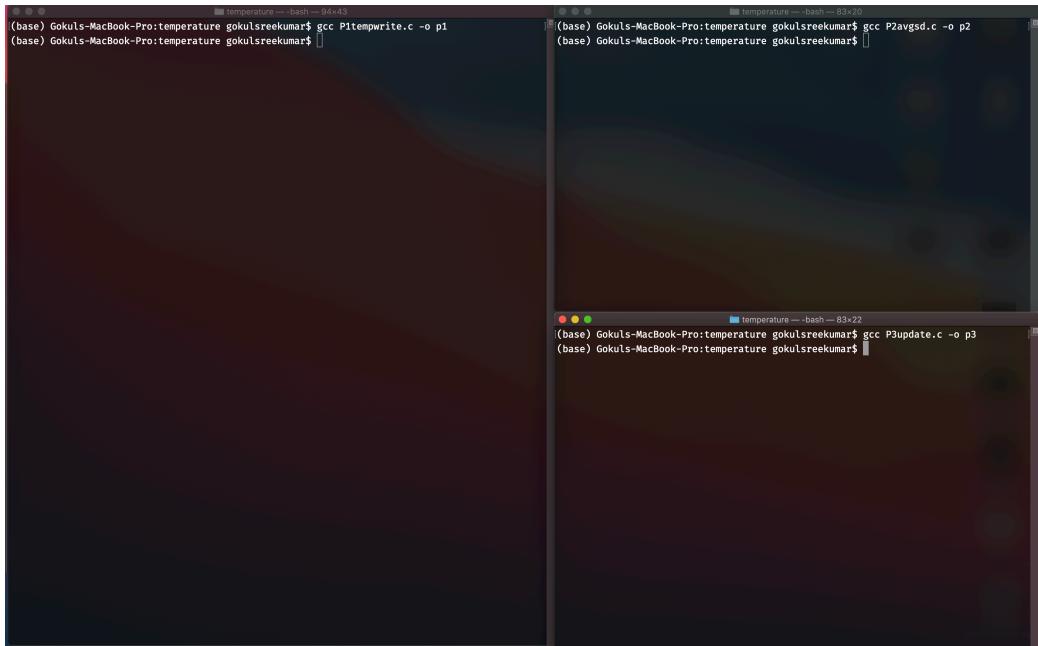


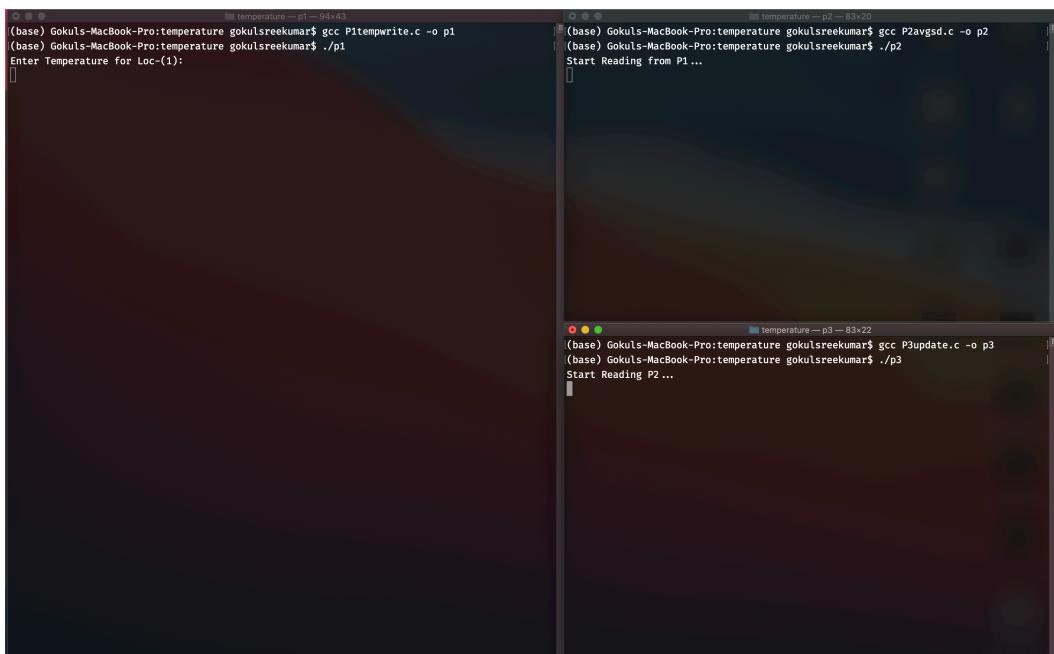
Q1. (a) Using Named Pipes (FIFO):

See README file, run mkfifo pipe1, mkfifo pipe2, mkfifo pipe3 command in terminal.



Compile the 3 C programs:

Run the 3 Programs Separately concurrently in multiple Terminal Windows: Output logs of Start Reading from P1..., and Start Reading from P2..., can be seen as output in P2 and P3 respectively and they are waiting for P1 to Write:



Enter the temperatures in 5 locations and now the Revised temperatures can be seen as output for P1, and corresponding logs of getting and processing data can be seen in P2 and P3 output:

```
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ gcc P1tempwrite.c -o p1
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p1
Enter Temperature for Loc-(1):
34.5
Enter Temperature for Loc-(2):
32.5
Enter Temperature for Loc-(3):
21.4
Enter Temperature for Loc-(4):
15.5
Enter Temperature for Loc-(5):
45.0
Reading Categories from P3.....
Revised Temperatures:
Loc(1) = 33.000000
Loc(2) = 31.000000
Loc(3) = 23.400000
Loc(4) = 18.000000
Loc(5) = 42.000000
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$
```



```
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ gcc P2avgsd.c -o p2
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p2
Start Reading from P1...
Reading from P1 Over!
P2 Data Written!
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$
```



```
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ gcc P3update.c -o p3
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p3
Start Reading P2...
Categories Written!
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$
```

If temperature is not in valid range (15-45), user will prompted to enter again as seen below:

```
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p1
Enter Temperature for Loc-(1):
34.5
Enter Temperature for Loc-(2):
32.5
Enter Temperature for Loc-(3):
21.4
Enter Temperature for Loc-(4):
15.5
Enter Temperature for Loc-(5):
45.0
Reading Categories from P3.....
Revised Temperatures:
Loc(1) = 33.000000
Loc(2) = 31.000000
Loc(3) = 23.400000
Loc(4) = 18.000000
Loc(5) = 42.000000
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p1
Enter Temperature for Loc-(1):
10.5
Temperature Out Of Range (15-45)! Enter Again:
Enter Temperature for Loc-(1):
45.5
Temperature Out Of Range (15-45)! Enter Again:
Enter Temperature for Loc-(1):
21
Enter Temperature for Loc-(2):
34
Enter Temperature for Loc-(3):
32
Enter Temperature for Loc-(4):
43
Enter Temperature for Loc-(5):
22
Reading Categories from P3.....
Revised Temperatures:
Loc(1) = 23.500000
Loc(2) = 32.500000
Loc(3) = 30.500000
Loc(4) = 40.000000
Loc(5) = 22.000000
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$
```



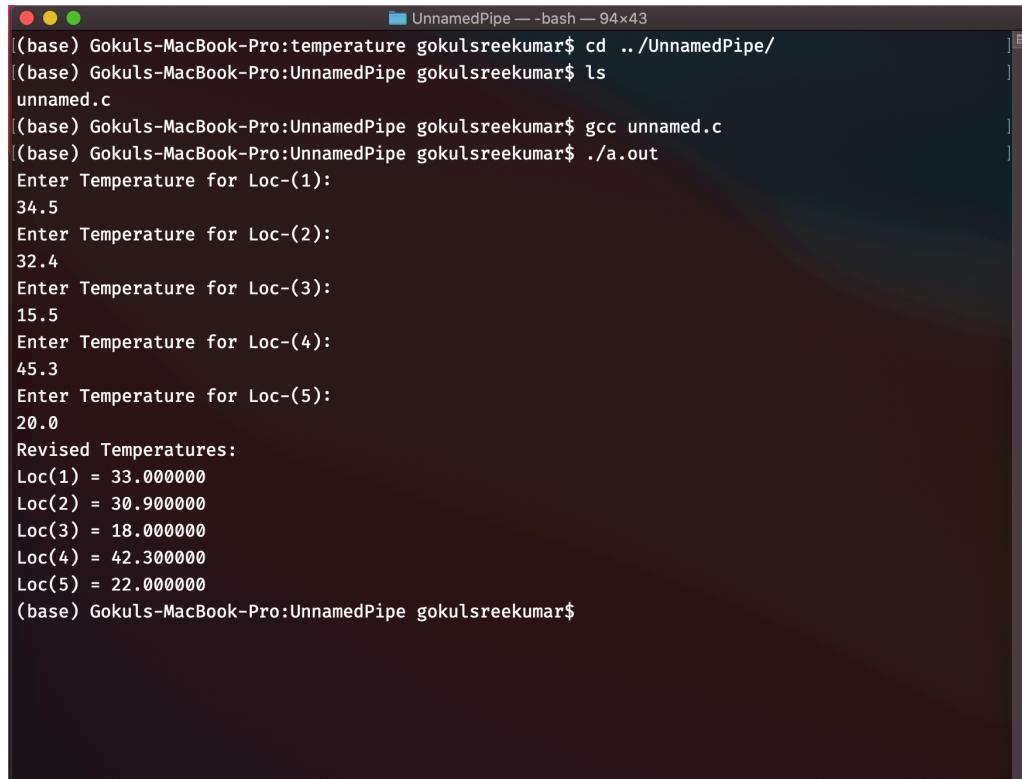
```
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ gcc P2avgsd.c -o p2
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p2
Start Reading from P1...
Reading from P1 Over!
P2 Data Written!
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p2
Start Reading from P1...
Reading from P1 Over!
P2 Data Written!
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$
```



```
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ gcc P3update.c -o p3
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p3
Start Reading P2...
Categories Written!
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$ ./p3
Start Reading P2...
Categories Written!
(base) Gokuls-MacBook-Pro:Q1 gokulsreekumar$
```

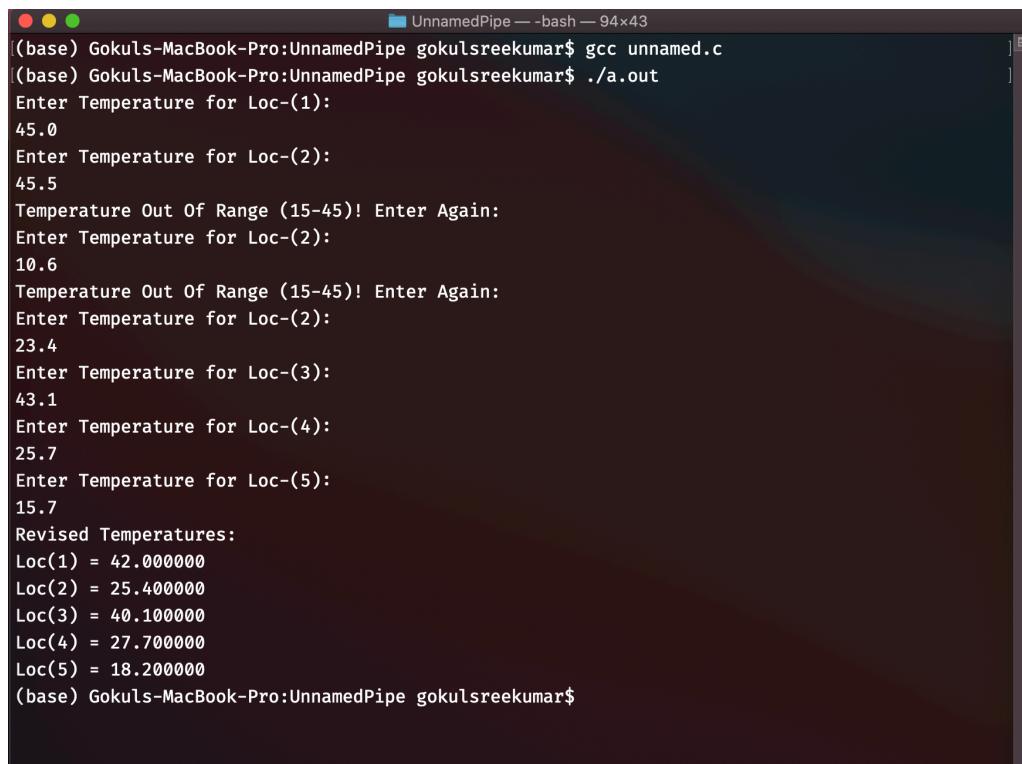
Q1. (b) Unnamed Pipes:

Compile the Program and run by using ./a.out, enter the temperatures in valid range and we can see the Revised Temperatures being printed:



```
(base) Gokuls-MacBook-Pro:temperature gokulsreekumar$ cd .. /UnnamedPipe/
(base) Gokuls-MacBook-Pro:UnnamedPipe gokulsreekumar$ ls
unnamed.c
(base) Gokuls-MacBook-Pro:UnnamedPipe gokulsreekumar$ gcc unnamed.c
(base) Gokuls-MacBook-Pro:UnnamedPipe gokulsreekumar$ ./a.out
Enter Temperature for Loc-(1):
34.5
Enter Temperature for Loc-(2):
32.4
Enter Temperature for Loc-(3):
15.5
Enter Temperature for Loc-(4):
45.3
Enter Temperature for Loc-(5):
20.0
Revised Temperatures:
Loc(1) = 33.000000
Loc(2) = 30.900000
Loc(3) = 18.000000
Loc(4) = 42.300000
Loc(5) = 22.000000
(base) Gokuls-MacBook-Pro:UnnamedPipe gokulsreekumar$
```

If temperature is not in valid range, user is prompted again to enter a valid temperature:



```
(base) Gokuls-MacBook-Pro:UnnamedPipe gokulsreekumar$ gcc unnamed.c
(base) Gokuls-MacBook-Pro:UnnamedPipe gokulsreekumar$ ./a.out
Enter Temperature for Loc-(1):
45.0
Enter Temperature for Loc-(2):
45.5
Temperature Out Of Range (15-45)! Enter Again:
Enter Temperature for Loc-(2):
10.6
Temperature Out Of Range (15-45)! Enter Again:
Enter Temperature for Loc-(2):
23.4
Enter Temperature for Loc-(3):
43.1
Enter Temperature for Loc-(4):
25.7
Enter Temperature for Loc-(5):
15.7
Revised Temperatures:
Loc(1) = 42.000000
Loc(2) = 25.400000
Loc(3) = 40.100000
Loc(4) = 27.700000
Loc(5) = 18.200000
(base) Gokuls-MacBook-Pro:UnnamedPipe gokulsreekumar$
```