Exp:20

Code:

#include <stdio.h>

#include <pthread.h>

#include <semaphore.h>

sem\_t mutex, writeBlock;

int data = 0, readersCount = 0;

void \*reader(void \*arg) {

int i=0;

while (i<10) {

sem\_wait(&mutex);

readersCount++;

if (readersCount == 1)

{

sem\_wait(&writeBlock);

}

sem\_post(&mutex);

printf("Reader reads data: %d\n", data);

sem\_wait(&mutex);

readersCount--;

if (readersCount == 0)

{

sem\_post(&writeBlock);

}

sem\_post(&mutex);

i++;

}

}

void \*writer(void \*arg) {

int i=0;

while (i<10) {

sem\_wait(&writeBlock);

data++;

printf("Writer writes data: %d\n", data);

sem\_post(&writeBlock);

i++;

}

}

int main() {

pthread\_t readers,

writers;

sem\_init(&mutex, 0,1);

sem\_init(&writeBlock, 0, 1);

pthread\_create(&readers, NULL, reader, NULL);

pthread\_create(&writers, NULL, writer,

NULL);pthread\_join(readers, NULL);

pthread\_join(writers,

NULL);sem\_destroy(&mutex);

sem\_destroy(&writeBlock);

return 0;

}

Output:

