QUESTION 3:

To implement sum of n numbers using fifo api. Sender side sends the data, eg. 3 5 5, receiver side adds the sequence and sends result back to sender.

PROGRAM:

sender.cpp

```cpp
#include<stdio.h>
#include<stdlib.h>
#include<sys/types.h>
#include<errno.h>
#include<sys/stat.h>
#include<unistd.h>
#include<iostream>
#include<fcntl.h>
#include<charconv>
using namespace std;
extern int errno;
int main()
{
    char* buff ;
    buff= (char *)(calloc(10,sizeof(float)));
    int fd,n,i=0;
    if(mkfifo("/tmp/newfifo2",0666)==-1)
```
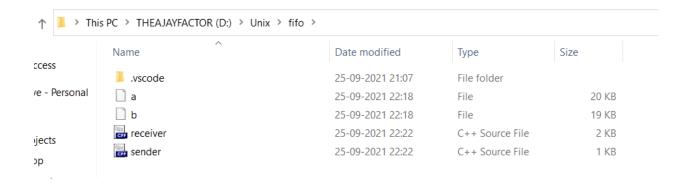
```cpp
{
    perror("");
}
else{
    cout << "Fifo file successfully created" << endl;

}
fd=open("/tmp/newfifo2",O_RDWR);
if(fd==-1)
{
    perror("Error:");
    exit(1);

}
cout<<"Enter no. of numbers"<<endl;
fgets(buff,10,stdin);
write(fd,buff,sizeof(buff));
n=stoi(buff);
cout<<"Enter all the numbers"<<endl;
char number[10];

for(;i<n;i++)
{
    cin >> number;
    write(fd,number,10) ;
}
char sum[10];
read(fd,sum,10);
cout<< "RECEIVER's FINAL SUM RESULT AT SENDER SIDE  : "<< sum << endl;
return 0;

}
```

receiver.cpp

```cpp
#include<stdio.h>
#include<stdlib.h>
#include<sys/types.h>
#include<errno.h>
#include<sys/stat.h>
#include<unistd.h>
#include<iostream>
#include<fcntl.h>
#include<string>
using namespace std;
extern int errno;
int main()
{
  char* buff ;
  char t1;
  buff= (char *)(calloc(10,sizeof(float)));
  int fd,n,i=0,sum=0,k,sum1,j=0;
  if(mkfifo("/tmp/newfifo2",0666)==-1)
  {
    perror("");
  }
  else{
    cout << "Fifo file successfully created" << endl;
  }
  fd=open("/tmp/newfifo2",O_RDWR);
  if(fd==-1)
  {
    perror("Error:");
  }
  read(fd,buff,10);
  n=stoi(buff);
  cout<<"No. of numbers to receive :"<<n<<endl;
  char number[10];
```

```cpp
  for(i = 0;i<n;i++)
  {
     read(fd,number,10) ;
      cout<<"Num" << i+1 <<" : " <<number<<endl;
       k=stoi(number);
      sum+=k;
  }
sum1=sum;
while(sum1>0)
{
    sum1/=10;
     j++;
}
sum1 = sum;
char *sum_in_reverse_order = (char *)calloc(j,sizeof(float));
char *sum_in_correct_order = (char *)calloc(j,sizeof(float));
  for(i = 0;i <= j-1;i++){
     sum_in_reverse_order[i] = sum1%10 + '0';
     sum1 = sum1/10;
  }
  for(i = j-1; i>= 0;i--){
     sum_in_correct_order[(j-1)-i] = sum_in_reverse_order[i];
  }
  cout << "SUM OF ALL NUMBERS : " << sum_in_correct_order << endl;
  write(fd,sum_in_correct_order,sizeof(sum_in_correct_order));
  return 0;
}
```

FOLDER STRUCTURE :

OUTPUT:

sender.cpp

receiver.cpp

RESULT:

The above program executed successfully.