

Name : Anupam Kunwar
Reg : 19BCE1369
Faculty : Amrit Pal

Lab-Fat CSE2005 (L15-L16)

Q2. Create 4 processes A, B, C, and D.

Process A generates two random numbers and add two given numbers, and pass the sum to process B using a pipe.

Process B performs the square of the received sum from A and passes it to the process C.

Process C divides the number by 2 and sends the result to process D through pipe.

Finally process D checks whether the given number is a prime number or not and print the result as.

Sample Output:

Hello my name is -----Student name-----, the generated number is prime/not prime.

Solution :

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
int main()
{
    int num1,num2,sum,square1;
    int a,b,d;
    int c = 0;
    int num;
    char snum1[20];
    char snum[20];
    int status, pid, pip[2];
    status = pipe(pip);
    if (status == -1)
    {perror("Unable to create pipe");
    exit(1);
    }
    pid = fork();
    if (pid == -1)
    {
        perror("Unable to create process");
        exit(2);
    }
    else if (pid == 0)
    {
        close(pip[0]);
        num = (rand() % (100 - 0 + 1)) + 0;
        num2 = (rand() % (100 - 0 + 1)) + 0;
```

```

sum = num + num2;
a = sum*sum;
a = a/2;
sprintf(snum, "%d", sum);
write(pip[1], snum, strlen(snum) + 1);
close(pip[1]);
exit(0);
}
else
{
close(pip[1]);
read(pip[0], snum1, strlen(snum) + 1);
sscanf(snum1, "%d", &num1);
square1 = num1*num1;
for(int i=1;i<=a;i++){
if(a%i==0)
c++;
}
if(c==2)
printf("Hello My name is Anupam Kunwar, the generated number %d is prime\n");
else
printf("Hello My name is Anupam Kunwar, the generated number %d is not prime\n");
close(pip[0]);
pid = fork();
if (pid == -1)
{
perror("Unable to create process");
exit(2);
}
else if (pid == 0)
{
int halfNo;
halfNo = square1/2;
close(pip[0]);
sprintf(snum,"%d",halfNo);
write(pip[1], snum, strlen(snum) + 1);
close(pip[1]);
exit(0);
}
else{
exit(0);
}
}
exit(0);
}
}

```

Output :.

```
anupamkunwar@fedora:~/Documents/oslab/FAT
```

```
File Edit View Search Terminal Help
```

```
[anupamkunwar@fedora FAT]$ gcc Q2.c -o Q2.out
```

```
[anupamkunwar@fedora FAT]$ ./Q2.out
```

```
Hello My name is Anupam Kunwar, the generated number 6 is not prime
```

```
[anupamkunwar@fedora FAT]$
```