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Program - 21

21 Write a program to create, writes to, and reads from a pipe. Also Write a program to create a pipe from the parent to child and send data down the pipe.

Program: (Pgm 21.cpp)

```
#include<stdio.h>
#include<stdlib.h>
#include<errno.h>
#include<unistd.h>
#include<iostream>
using namespace std;
  int main()
  {
  int pfds[2];
  char buf[30];
  if (pipe(pfds) == -1)
  {
     perror("pipe");
     exit(1);
  }
  cout << "writing to file descriptor #" << pfds[1]
<< endl;
  write(pfds[1], "test", 5);
  cout << "reading from file descriptor #" << pfds[0]
<< endl;
  read(pfds[0], buf, 5);
```

Output of the Program:- (fgrandsearchh)

writing to file descriptor #4

reading from file descriptor #3

read : test

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```
cout << "read : " << buf << endl;
return 0;
}
```

Program to create a pipe from parent to child and send data down the pipe.

Program :- (pgm21a.cpp)

```
#include <stdio.h>
#include <stdlib.h>
#include <sys/types.h>
#include <unistd.h>
#include <iostream>
using namespace std;
    int main()
    {
    int n, pfds[2];
    char buf[30];
    pid_t pid;
    if (pipe(pfds) == -1)
    {
      perror("pipe");
      exit(1);
    }

  if ((pid = fork()) == -1)
{
  perror("Fork Error");
```

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```
return 0;
}
if (pid > 0)  // parent
{
    close(pfds[0]);
    write(pfds[1], "hello\n", 7);
}
if (pid == 0)
{
    close(pfds[1]);
    n = read(pfds[0], buf, 7);
    write(1, buf, n);
}
return 0;
}
```

Output of the Program: (hgmdd.cpp)

Hello Hello Hello Hello Hello Hello Hello Hello Hello

.....

^C
Signal Handler : catched signal num is => 2

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Program-22

22. Write a C/C++ Program to catch, ignore and accept the signal, SIGINT.

i) Catch the signal

Program:- (pgm22.cpp)

```
#include <signal.h>
#include <iostream.h>
#include <unistd.h>
#include <stdlib.h>
#include <iostream>
using namespace std;

void handler (int signo)
{
 cout << "\n signal handler : catched signal num is
=>"
    << signo << endl;
 exit(0);
}
int main()
{
 signal (SIGINT, handler);
 while (1)
    cout << "hello \t" ;
}
```

Output of the Program:- (Pgm220.cpp)

Hello Hello Hello Hello Hello Hello Hello Hello Hello

:
:
:

^C

Output of the Program:- (Pgm220b.cpp)

Hello Hello Hello Hello Hello Hello Hello Hello Hello

:
:
:

^X

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ii) Taking default action

Program :- (hgm22a.cpp)

```
#include<signal.h>
#include<unistd.h>
#;nclude<iostream>

int main()
{
  signal(SIGINT, SIG_DFL);
  while(1)
   cout<<"hello\t";
}
```

iii) Ignore the Signal

Program :- (hgm22b.cpp)

```
#include <signal.h>
#include <iostream.h>
#include <unistd.h>

int main()
 {
   signal(SIGINT, SIG_IGN);
   while(1);
   cout<<"hello\t" ";
 }
```

Output of the Program:- (Pgm03.cpp)

```
Tue Dec 31 20:00:00 IST 2024
sh: 1: doaate: not found
student pts/0    2024-12-31 19:45
```