

Q-2

Page - 1

Parent Program.

int main() {

std::vector<pid_t> kids;

int AToB[2]; // pipe 1

int BToA[2]; // pipe 2

if (pipe(AToB) == -1) {

cerr("Error in creating pipe AToB");

return 1;

}

if (pipe(BToA) == -1) {

cerr("Error in creating pipe BToA");

return 1;

}

child1 = fork(); // forking

if (child1 == -1) {

cerr("Error in creating process for Prog A");

return 1;

}

if (child1 == 0) { // Program A

dup2(AToB[1], STDOUT_FILENO);

dup2(BToA[0], STDIN_FILENO);

close(AToB[0]);

close(AToB[1]);

close(BToA[0]);

close(BToA[1]);

exec(A) // start Program A

cerr("Error in starting program A");

return 1;

}

Page - 2

Kids.push(child1);

```
child2 = fork();           // forking
if (child2 == -1) {
    cerr << "Error in creating process for program B";
    return 1;
}
```

```
if (child2 == 0) {         // program B
```

```
    dup2(AToB[0], STDIN_FILENO);
    dup2(BToA[1], STDOUT_FILENO);
    close(AToB[0]);
    close(AToB[1]);
    close(BToA[0]);
    close(BToA[1]);
    exec(B);               // start program B
    cerr << "Error in starting program B";
    return 1;
}
```

Kids.push(child2);

```
close(AToB[0]);           // closing all ends of pipes
close(AToB[1]);           in parent process
close(BToA[0]);
close(BToA[1]);
```

```
int waitStatus;           // waiting
wait(&waitStatus);
for (kid : Kids) {
```

```
    int status;
    kill(kid, SIGTERM);    // sending signal
    waitpid(kid, &status, 0);
}
```


return 0;

} // end of main (parent) process.