



Operating Systems Programming Lab
Computer Engineering Department
Fall 2023/2024
Lab 03: Pipes and pipelines

Objectives

1. To understand the basics of named and ordinary pipes.

Prelab

1. Read chapter 6 of the textbook.
2. Read the manual pages of the following systems calls and functions.

```
int pipe(int pipefd[2]);  
int mkfifo(const char *pathname, mode_t mode);  
int unlink(const char *path);
```

Experiment

1. **Synchronization using pipes:** Implement two process P_1 and P_2 such that P_1 is the parent of P_2 . P_1 prints the integers from 1 to 5 and P_2 prints the characters from A to E . Synchronize the two processes using ordinary pipes such that their produced output looks like this:

```
1  
A  
2  
B  
3  
C  
4  
D  
5  
E
```

2. Implement a program that receives a pipelined command via its arguments and executes it by forking a number of children equal to the number of pipelines. The execution of the program looks like this:

```
./prog ls -l | sort | wc
```