CS110 Midterm Exam
Answer Booklet

CS110 Winter 2020 – Instructors: Chris Gregg and Nick Troccoli

You may not use any internet devices. You will be graded on functionality – but good style saves time and helps graders understand what you were attempting. You have 80 minutes. We hope this exam is an exciting journey.

Note: Only work in this answer booklet will be graded. The backs of pages are available as space for each problem as well.

First Name: _____

Last Name: _____

SUNET ID (part before @stanford.edu): _____

By signing below, I commit to the letter and spirit of the honor code. I agree not to access any unauthorized resources or swap to any other applications for the duration of the exam.

_____

Sign here

Problem 1

```
PipeQueue::PipeQueue() : size(0) {
      // TODO: write constructor
```

```
PipeQueue::~PipeQueue() {
	// TODO: write destructor
```

```
void PipeQueue::enqueue(string s) {
      // TODO: write enqueue function
```

```
string PipeQueue::dequeue() {
      // TODO: write dequeue function
```

Problem 2A

1.

2.

3.

Problem 2B

```
int read_line(int fd, char *buf, int buf_len) {
      // TODO: Your code here
```

Problem 2C

```
} else {
      int write_fd;
      write_fd = open(write_filename, O_WRONLY | O_CREAT, 0666);
      lseek(write_fd, 0, SEEK_END);

      // TODO: Your code here
```

Problem 2D

```
void sigusr1_handler(int sig) {
      // TODO: Your code here
```

Problem 2E

```
if (pid_or_zero == 0) { // child
      read_fd = open(read_filename, O_RDONLY | O_CREAT, 0666);
      lseek(read_fd, 0, SEEK_END);

      // TODO: Your code here
```

Problem 3

List the possible outputs:

Output 1:

Output 2:

etc...

Problem 4A

Problem 4B

Problem 4C

Problem 4D

Problem 4E