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

```c
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

```c
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