

## CSC209H Worksheet: Pipe (workers & master)

In the last worksheet we wrote a program that forked one child for each command line argument. The child computed the length of the command line argument and exits with that integer as the return value. The parent sums these return codes and reports the total length of all the command line arguments together. For this worksheet, we will do the same program except the each child will communicate the length to the parent through a pipe.

```
int main(int argc, char **argv) {
    // Declare any new variables you need
    
    // Loop over the command line arguments.
    for (int i = 1; i < argc; i++) {
        // Before we call fork, call pipe
        
        int result = fork();
        if (result < 0) {
            perror("fork");
            exit(1);
        } else if (result == 0) {
```

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```
// Close read end in the child
```

```
// Close the reading ends for all  
// previous children, so close them.
```

```
int len = strlen(argv[i]);
```

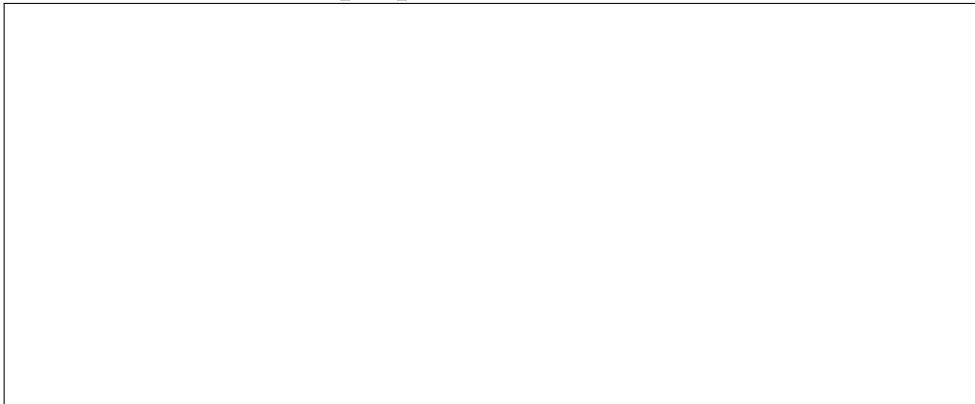
```
// Close the pipe.
```

```
exit(0);
```

```
} else {
```

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```
// In the parent. Close the end of  
// the pipe that we don't want open
```



```
}
```

```
}
```

```
// Only the parent gets here
```

```
int sum = 0;
```

```
// Read one integer from each child, print it
```

```
// and add it to the sum.
```

```
printf("The length of the args is %d\n", sum);
```

```
return 0;
```

```
}
```