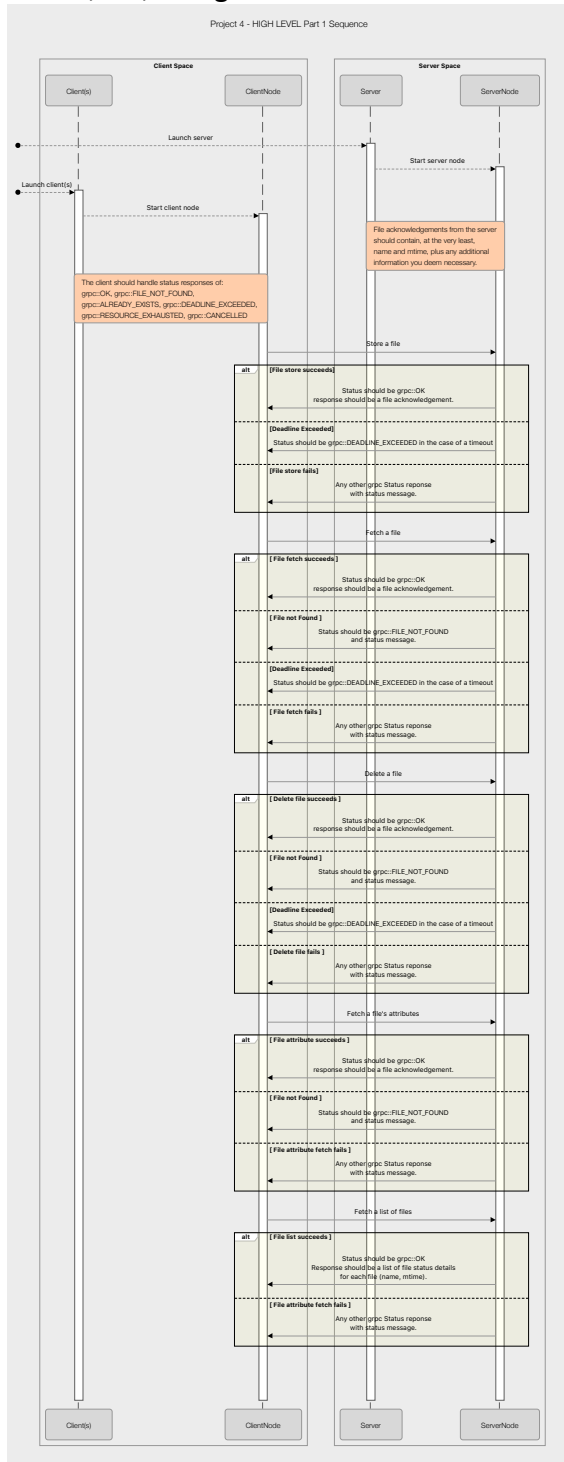


This project used gRPC to build a number of remote procedure calls (RPC) to fetch, store, delete, list, and get status of files on a remote server. The sequence diagram shows as follows:



To run the code:

```
make protos
```

```
make
```

Test 1

```
./bin/dfs-server-p1
```

```
./bin/dfs-client-p1 fetch gt-klaus.jpg
```

Test 2

```
./bin/dfs-server-p1
```

```
./bin/dfs-client-p1 delete gt-klaus.jpg
```

Test 3

```
./bin/dfs-server-p1
```

```
./bin/dfs-client-p1 store gt-klaus.jpg
```

Passes all gradescope tests.

## Part 2: Completing the Distributed File System (DFS)

In this part, cache process is added to the RPC calls and it will make asynchronous gRPC call.

To run the code:

```
make protos
```

```
make
```

Test 1

```
./bin/dfs-server-p2
```

```
./bin/dfs-client-p2 mount
```

Test 2

```
./bin/dfs-server-p2
```

```
./bin/dfs-client-p2 fetch gt-klaus.jpg
```

Test 3

```
./bin/dfs-server-p2
```

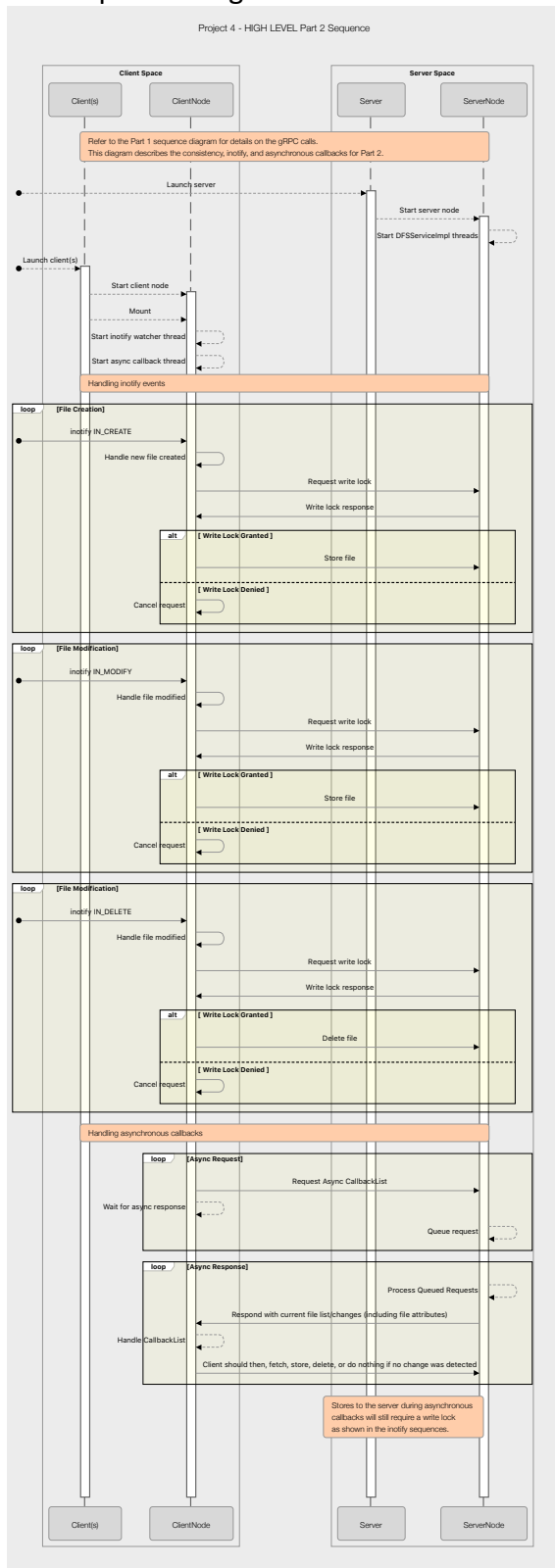
```
./bin/dfs-client-p2 delete gt-klaus.jpg
```

Test 4

```
./bin/dfs-server-p2
```

```
./bin/dfs-client-p2 store gt-klaus.jpg
```

The sequence diagram shows as follows



### Issues and Suggestions

1. Macbook with M1 chip cannot run the code. The run is killed immediately once it's launched. ASAN\_FLAGS and ASAN\_LIBS have to be removed in order to run the code. For part 2. Inotify\_init() cannot be implemented.
2. It would be helpful if there is any feedback when grading our code and report so we know how points are deducted and how we can improve next time.

### Reference

1. <https://grpc.io/blog/deadlines/>
2. <https://github.com/grpc/grpc/tree/master/examples/cpp>