

Assignment 3 grpc apis

Xin Guan, Andrew ID: xinguan

repository link

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin>

protocol buffer definitions:

```
syntax = "proto3";

// Define enumeration for post states
enum PostState {
    POST_STATE_NORMAL = 0;
    POST_STATE_LOCKED = 1;
    POST_STATE_HIDDEN = 2;
}

// Define enumeration for comment states
enum CommentState {
    COMMENT_STATE_NORMAL = 0;
    COMMENT_STATE_HIDDEN = 1;
}

message User {
    optional string user_id = 1;
}

message Post {
    optional int64 post_id = 1;
    optional string title = 2;
    optional string text = 3;
    oneof content_url {
        string video_url = 4;
        string image_url = 5;
    }
    optional User author = 6;
    optional int64 score = 7;
    optional PostState post_state = 8;
    optional string publication_date = 9;
}

message Comment {
    optional int64 comment_id = 1;
    optional int64 parent_post_id = 2;
    optional int64 parent_comment_id = 3;
    optional User author = 4;
    optional string text = 5;
    optional int64 score = 6;
```

```
optional CommentState comment_state = 7;  
optional string publication_date = 8;  
}
```

service definitions:

1. CreatePost

takes in a CreatePostRequest and returns a CreatePostResponse

CreatePostRequest contains a Post object

CreatePostResponse contains a bool success and an int64 post_id

2. VotePost

takes in a VotePostRequest and returns a VotePostResponse

VotePostRequest contains an int64 post_id, a User object representing the author and a bool is_upvote

VotePostResponse contains a bool success and an int64 score

3. GetPostContent

takes in a GetPostContentRequest and returns a GetPostContentResponse

GetPostContentRequest contains an int64 post_id

GetPostContentResponse contains a bool success and a Post object

4. CreateComment

takes in a CreateCommentRequest and returns a CreateCommentResponse

CreateCommentRequest contains a User object representing the author and a Comment object

CreateCommentResponse contains a bool success and an int64 comment_id

5. VoteComment

takes in a VoteCommentRequest and returns a VoteCommentResponse

VoteCommentRequest contains an int64 comment_id, a User object representing the author and a bool is_upvote

VoteCommentResponse contains a bool success and an int64 score

6. GetMostUpvotedComments

takes in a GetMostUpvotedCommentsRequest and returns a GetMostUpvotedCommentsResponse

GetMostUpvotedCommentsRequest contains an int64 post_id and an int64 limit

GetMostUpvotedCommentsResponse contains a list of CommentAndWetherSubcommentsExist objects

CommentAndWetherSubcommentsExist contains a Comment object and a bool has_subcomment

7. ExpandCommentBranch

takes in a ExpandCommentBranchRequest and returns a ExpandCommentBranchResponse

ExpandCommentBranchRequest contains an int64 comment_id and an int64 limit

ExpandCommentBranchResponse contains a list of CommentAndSubcomments objects

CommentAndSubcomments contains a Comment object and a list of Comment objects

```
service RedditService {
  rpc CreatePost(CreatePostRequest) returns (CreatePostResponse);

  rpc VotePost(VotePostRequest) returns (VotePostResponse);

  rpc GetPostContent(GetPostContentRequest) returns
  (GetPostContentResponse);

  rpc CreateComment(CreateCommentRequest) returns (CreateCommentResponse);

  rpc VoteComment(VoteCommentRequest) returns (VoteCommentResponse);

  rpc GetMostUpvotedComments(GetMostUpvotedCommentsRequest)
  returns (GetMostUpvotedCommentsResponse);

  rpc ExpandCommentBranch(ExpandCommentBranchRequest)
  returns (ExpandCommentBranchResponse);
}

message CreatePostRequest {
  optional Post post = 1;
}

message CreatePostResponse {
  optional bool success = 1;
  optional int64 post_id = 2;
}

message VotePostRequest {
  optional int64 post_id = 1;
  optional User user = 2;
  optional bool is_upvote = 3;
}

message VotePostResponse {
  optional bool success = 1;
  optional int64 score = 2;
}
```

```
message GetPostContentRequest {
  optional int64 post_id = 1;
}

message GetPostContentResponse {
  optional bool success = 1;
  optional Post post = 2;
}

message CreateCommentRequest {
  optional User author = 1;
  optional Comment comment = 2;
}

message CreateCommentResponse {
  optional bool success = 1;
  optional int64 comment_id = 2;
}

message VoteCommentRequest {
  optional int64 comment_id = 1;
  optional User user = 2;
  optional bool is_upvote = 3;
}

message VoteCommentResponse {
  optional bool success = 1;
  optional int64 score = 2;
}

message GetMostUpvotedCommentsRequest {
  optional int64 post_id = 1;
  optional int64 limit = 2;
}

message CommentAndWetherSubcommentsExist {
  optional Comment comment = 1;
  optional bool has_subcomment = 2;
}

message GetMostUpvotedCommentsResponse {
  repeated CommentAndWetherSubcommentsExist comments = 1;
}

message ExpandCommentBranchRequest {
  optional int64 comment_id = 1;
  optional int64 limit = 2;
}

message CommentAndSubcomments {
  optional Comment comment = 1;
  repeated Comment subcomments = 2;
}
```

```
message ExpandCommentBranchResponse {  
    repeated CommentAndSubcomments subcomments = 1;  
}
```

Storage backend

Just used in memory storage. No persistence.

Server and Client link

server: <https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/server.py>

client: <https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/client.py>

high level functions and tests

1. retrieve a post

implementation:

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L12>

test:

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L45>

2. retrieve most upvoted comments

implementation:

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L16>

test:

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L77>

3. expand most upvoted comment

implementation:

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L20>

test:

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L138>

4. return the most upvoted reply under the most upvoted comment

implementation:

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L31>

test:

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L281>

<https://github.com/imbaguanxin/a3-grpc-apis-imbaguanxin/blob/main/test.py#L344>