COP3503
Assignment 3

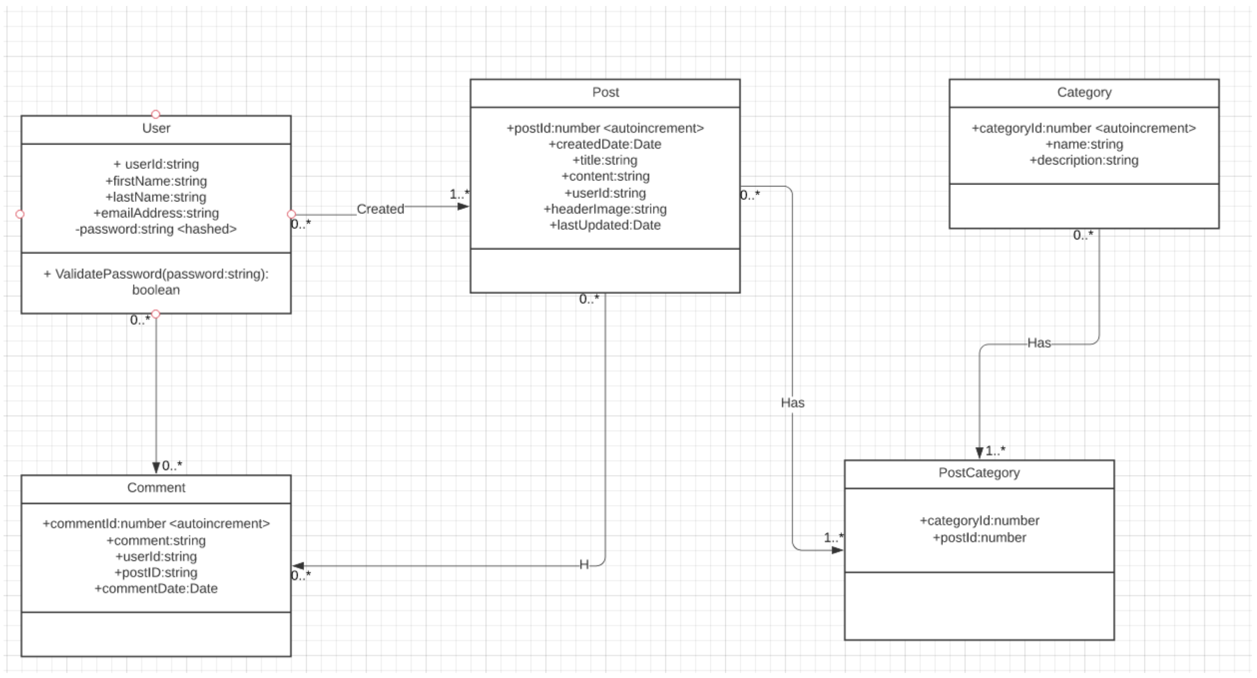
This assignment builds up on the prior one, we need to complete the back end for our application in Node / Express.

Below are the specs for an API that needs to be written in Node / Express and it must support all outlined operations. Please make sure you follow the names provided exactly for both routes and objects since the test scripts I will be using will ONLY use these names.

Furthermore since the objective of this Assignment is to support our front end development in Angular I should be able to plug in my Angular application into your Back End and get the exact same results as my own.

Write a Node application which will listen for request (web server) on port 3000 and it should provide the following routes and functionality for each route respectively.

1.) Implement the follow classes in TypeScript in your project, these classes will be used to support any and all of step #2 CRUD operations



2) Your application should support CRUD operations for all the above classes in the following EndPoints

Method	EndPoint (Route)	Functionality
[GET]	/Users	Returns a list of all users in the system, this should return all the properties of all the users except their passwords. The user's password should never be returned on ANY operation
[GET]	/Users/<userId>	Returns all of the given user's information except the password. Should return Status 200 (OK) under normal circumstances If a user is not found it should return an Error Message with a Status of 404 (Not Found) See below for the Error Message Syntax (JSON Object)
[POST]	/Users	Creates a new User It should check for Duplicate User ID All fields are required It should validate for valid Email Address If a duplicate ID it should return an error Message and a status of 409 (Conflict) Should return 201(Created) under normal circumstances
[PATCH]	/Users/<userId>	Should update an existing user (no updates are allowed to the userID field) If user is not found return 404 (not found) Should return 200 (OK) under normal

		circumstances Authentication header is required with a valid JSON Web Token Should return 401 (Not Authorized) if the request is not properly authenticated
[DELETE]	/Users/<userId>	Should Delete an existing user (and the user's related Posts) Should return 404 (Not Found) if the user is not found Authentication header is required with a valid JSON Web Token Should return 401 (Not Authorized) if the request is not properly authenticated and it should return a properly formatted Error Message Should return 204 (No Content) under normal circumstances)
[GET]	/Users/<userId>/<password>	Should return a valid JSON Web Token if the username and password are valid Should return 401 Un-Authorized otheriwse
[GET]	/Users/Posts/<userID>	Returns all posts for the passed in user
[GET]	/Posts	Should return all posts in the blog in sequential order of createdDate where the latest post should be first element on the Array. Should return 200 (OK) under normal circumstances
[GET]	/Posts/<postID>	Should return a specific post Should return 200 (OK) Under Normal

		Circumstances Should return 404 not found if the post doesn’t exist
[POST]	/Posts	Creates a new post for the currently Authenticated User Requires Authentication header with a valid JSON Web Token Should return 401 (Not Authorized) if the request is not properly authenticated and it should return a properly formatted Error Message Should Return 201 (Created) under normal circumstances
[PATCH]	/Posts/<postID>	Updates an existing post, not changes to the postID are allowed or the creation date. Only the content and header image may be altered Requires Authentication header with a valid JSON Web Token and the currently logged in user must match the author of the post Should return 401 (Not Authorized) if the request is not properly authenticated and it should return a properly formatted Error Message Should return 404 (Not Found) if the post doesn’t exist Should return 200 (OK) under normal circumstances
[DELETE]	/Posts/<postID>	Should delete an existing post and related PostCategories Requires Authentication header with a valid JSON

		Web Token and the currently logged in user must match the author of the post Should return 401 (Not Authorized) if the request is not properly authenticated and it should return a properly formatted Error Message Should return 404 Not Found if the Post doesn't exist Should return 204 no content under normal circumstances.
[GET]	/Categories	Returns a list of available categories
[POST]	/Categories	Creates a new category Authentication header is required with a valid JSON Web Token Should return 401 Un-Authorized if the user isn't logged in or properly authenticated
[GET]	/Categories/<categoryId>	Returns an existing category Returns 404 (Not Found) if the category ID isn't found.
[PATCH]	/Categories/<categoryID>	Updates an existing category Authentication header is required with a valid JSON Web Token Should return 401 Un-Authorized if the user isn't logged in or properly authenticated Should return 404 (Not Found) if the category doesn't exist
[DELETE]	/Categories/<categoryID>	Removes an existing category (and all related PostCategories)

		Authentication header is required with a valid JSON Web Token Should return 401 Un-Authorized if the user isn't logged in or properly authenticated Should return 404 (Not Found) if the category doesn't exist
[GET]	/PostCategory/<postID>	Returns all the categories related to the given post
[GET]	/PostCategory/Posts/<categoryID>	Returns all the posts for a given category
[POST]	/PostCategory/<postID>/<categoryID>	Creates a PostCategory with the given information Authentication header is required with a valid JSON Web Token Should return 401 Un-Authorized if the user isn't logged in or properly authenticated, the user must be the author of the given post Should return 404 (Not Found) if the category doesn't exist or the post doesn't exist.
[DELETE]	/PostCategory/<postID>/<categoryID>	Deletes the corresponding PostCategory Authentication header is required with a valid JSON Web Token Should return 401 Un-Authorized if the user isn't logged in or properly authenticated, the user must be the author of the given post Should return 404 (Not Found) if the category doesn't exist or the post doesn't exist.
[GET]	/Comments/<postId>	Returns all the comments for a given post

[POST]	/Comments/<postID>	Creates a new comment for the given post. Authentication header is required with a valid JSON Web Token Should return 401 Un-Authorized if the user isn’t logged in or properly authenticated Should return 404 Not Found if the post is not found
[PATCH]	/Comments/<postID>/<commentID>	Updates an existing comment, only the comment content can be updated. Authentication header is required with a valid JSON Web Token Should return 401 Un-Authorized if the user isn’t logged in or properly authenticated Return 404 Not Found if the comment is not found or the post is not found
[DELETE]	/Comments/<postID>/<commentID>	Deletes an existing comment Authentication header is required with a valid JSON Web Token Should return 401 Un-Authorized if the user isn’t logged in or properly authenticated, you should be the author of the comment, or the author of the post Returns 404 Not Found of the Comment or Post is not found
[GET]	/Comments/<postID>/<commentID>	Returns an existing comment Returns 404 not found of the comment ID or post ID are invalid

Error Messages:
All error messages should be sent back as the following JSON Object

```
{
        “Status”: 401
        “Message”: “Unable to do x y z”
}
```

All objects should be sent back as JSON Objects or JSON Object Arrays

The data should be persisted saved to a database.