**Distributed Systems Programming 600089**

Distributed Systems API: Report

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# 1. APIs

Outline what an API is and does, how it manages requests and discuss why this API is stateless and describe the difference between a stateless and stateful server.

# 2. Route Mapping in WebAPI

Briefly explain what route mapping is, how WebAPI uses the id parameter and what actions are.

# 3. RESTful Requests

Briefly outline what GET, POST and DELETE requests are and provide screenshots of where you have used these requests in your server project to illustrate your written work.

# 4. API Keys

In the created API, methods requiring an authenticated user expect to receive an API key in the header of the request, which is then searched for in the database for verification. Briefly describe how your Server and Client use the API key. Identify if you think an API key is a good or bad option for identifying users, giving your reasons. Is the API key safe in this project? How would you ensure this API key was kept safe if you were developing this Server/Client in the ‘real world’?

# 5. The RSA Algorithm

Outline the steps in the RSA algorithm. IN BULLET POINTS

# 6. The AES Algorithm

Outline the steps in the AES algorithm. IN BULLET POINTS

# 7. Entity Framework

Briefly describe what the Entity Framework is and what it does.

Entity framework does things…

Compare code first, model first and database first techniques and describe what a migration is/does.

There are several documented approaches to developing applications with Entity Framework:

* Code First
* Model First
* Database First

The suitability of each approach largely depends on the scope of the project and the information available at the time of development.

The code first method allows the developer to focus on development of backend code without concern for database design, which is instead managed by Entity Framework. Through a variety of decorators and conventions (e.g. “[Key]” or PrimaryKeyId) and the manual creation of “context” simply to define the required collections to be stored, EF can generate any number of SQL databases and, likewise, tables within them.

On the other hand, the model first approach requires that…

Finally, in database first…

# 8. Reflections

Finally, write a short reflective statement about which tasks you completed and to what level, any problems you had with any of the functionality and how you overcame these problems (if you managed to).