

CSC207 Tutorial 5

TUT0401 - 6th October 🍂

lab overview

- Introduction to APIs
- **Group Activity:** Course grades analytics app
 - Goal: complete tasks 3 & 4 (getting average & top grade in your team)
 - to be completed by the end of lab (for credit!)
- Discuss potential API uses with team

APIs

a crash course

- application programming interface... aka an interface between applications (your Java app, and some other service)
- usually, we mean a web API that communicates over the HTTP protocol
 - client sends a *request*
 - server sends a *response*

APIs

request structure

- **URL (Endpoint):** the destination of your request (e.g. <https://grade-apis.panthen.ca/> for this lab)
- **Method:** type of action to perform (e.g. GET, POST, ...)
- **Headers:** auxiliary information, like for authentication
- Storing data:
 - **Parameters** (usually used with GET): data in the URL itself
 - **Body** (usually used with POST): more complex data

APIs

response structure

- **Status code:** answers “what happened to your request”? e.g. 200 -> OK
- **Headers:** metadata
- **Body:** the actual data being sent over

group activity

overview

- **Task 1:** get an authentication token.
 - this is passed in every request (header), so the API knows who you are
- **Task 2:** form a team on the app!
- **Task 3:** calculate average team grade
 - familiarize yourself with the Grade & Team entities, and what data is provided by the GradeDataBase interface
- **Task 4:** implement UI for showing the top grade