Daily Homework

03/23/2022

Notes and Q&A:

<https://docs.google.com/document/d/1O7ogrWUuttxBATKADPk98zPqyQcgCWbdF18YKx0xcSQ/edit?usp=sharing>

Checklist:

<https://docs.google.com/document/d/1fmYhFHUIy44UIId1fpUUV-vWt9RdjD0ghkv9n5PqzBw/edit?usp=sharing>

1. What have you reviewed today?

OSI Model:

* Physical Layer
* Data Link Layer
* Network Layer
* Transport Layer
* Session Layer
* Presentation Layer
* Application Layer

TCP/IP Model:

* Network Access Layer
* Internet Layer
* Transport Layer
* Application Layer

For HTTP(in application layer)

HTTP Status Code

* 1xx information (100 - 199)
* 2xx success (200 - 299)
* 3xx redirection (300 - 399)
* 4xx client error (400 - 499)
* 5xx server error (500 - 599)

TCP vs UDP

1. TCP is a connection-oriented protocol, whereas UDP is a connectionless protocol.
2. Speed diff, as TCP is comparatively slower than UDP.

Overall, UDP is a much faster, simpler, and efficient protocol, however, retransmission of lost data packets is only possible with TCP.

1. What new things you have learned today?

**Spring MVC**

* For web development
* Architecture:
* Model
* Controller
* View
* Front controller

flow of spring mvc

* Request intercepted by dispatcherServlet(front controller)
* dispatcherServlet gets mapping and forward request to controller
* Controller return an object of ModelAndView
* DispatcherServlet checks the entry of the view resolver in xml file and invokes the specific view component

**spring boot**

advantage

* Auto config and easy config/dependency
* Batch processing
* Annotation based spring application
* Embedded servlet container -> Tomcat

**Spring Boot Application**

@SpringBootApplicaiton annotation includes @EnableAutoConfiguration, @ComponentScan, @SpringBootConfiguration

**http url design-** basic

Handle CRUD (create, read, update, delete) actions using http method:

* get /api/employees retrieves a list of employees
* get /api/employees/10 retrieve a specific employee
* put /api/employees/10 update employee #10
* post /api/employees create a new employee
* delete /api/employees/10 delete employee #10
* patch /api/employees/10 partially update emp #10

filtering, sorting, searching

combine all:

**get /api/employees?q=java&state=open&sort=created\_at,-salary**

Limit fields

get /api/employee?fields=id,department&...

auto loading

get /api/employees/10?embed=manage.name

get /api/employees/10?expand=manage.name

Spring RESTful API

@RestController, @Controller, @Service, @Repsitory,

@GetMapping, @PostMapping, @PutMapping, @DeleteMapping, @RequestMapping,

@PathVariable, @RequestParam

@RequestBody, @ResponseBody

**Exception Handling**

**Validation**

common validation annotations

@NotNull, @NotEmpty, @NotBlank, @Min, @Max, @Pattern, @Email …

@Valid(partial validation), @Validated(group validation)

1. What is your learning plan tomorrow?

* Focus on Spring concepts
* Creating a Spring boot project tomorrow or on the weekend
* 2 coding questions