CHALMERS
EXAMINATION / TENTAMEN

Course code/kurskod	Course name/kursnamn			
DIT 341	Mobile and Web Development			
Anonymous code Anonym kod		Examination date Tentamensdatum	Number of pages Antal blad	Grade Betyg
932		2022-01-04	9	VG

* I confirm that I've no mobile or other similar electronic equipment available during the examination.
Jag intygar att jag inte har mobiltelefon eller annan liknande elektronisk utrustning tillgänglig under eximinationen.

Solved task Behandlade uppgifter No/nr		Points per task Poäng på uppgiften	Observe: Areas with bold contour are to completed by the teacher. Anmärkning: Rutor inom bred kontur ifylles av lärare.
1	x	18	
2	x	18	
3	x	18	
4	x	16	
5	x	3	
6	x	4	
7	x	7	
8	x	7	
9			
10			
11			
12			
13			
14			
15			
16			
17			
Bonus poäng			
Total examination points Summa poäng på tentamen		97	

1.1

```
line 9 :  app.get('app/users', function (req, res) {
line 10:        res.status(200).json(users)
          }
```

✓

1.2

```
line 16:  app.get('app/users/:userid', function(req, res) {
     17:        let id = req.params.userid
     18   if (id >= 0 && id< users.length) {
     19         res.status(200).json(users[id]) }
     20   else {
     21        res.status(404)
          }
        }
```

✓

1.3

```
line 23:  app.delete('app/users/:userid', function(req,res) {
               let id = req.params.userid
          if (id >= 0 && id < users.length) {
              let deletedUser = users[id]
                  users[id] = null
             res.status(200).json(deletedUser)}
          else{ res.status(404)}
        }
```

✓

CHALMERS	Anonymous code 932 Anonym kod	Points for question (to be filled in by teacher) Poäng på uppgiften (ifylles av lärare)	Consecutive page no. Löpande sid nr 2 Question no. Uppgift nr 2

4

2.1

GET /canvas/users : I would expect to recieve a list of all users on canvas by clicking on a button that would send this request to the backend for instance. A success would return the status 200 whereas it would return a 404 if the ressource cannot be found. ~~I would use this if i want~~

GET /canvas/users/:user I would expect retreiving the information about a specific user in the collection of users, if i am loging in for instance. The difference with the first request is that this one asks about a specific user, not all of them. The status are however the same. + response codes?

3

2.2 :

To update a user we could use either a patch or a put request following this structure :

- PUT /canvas/users/:user
- PATCH /canvas/users/:user

2.3 :

200 : successful request (when using a get for instance)
304 : redirected request (to cashed value for instance)
404 : ressource is not found
~~4.~~ 500 : problem on the server side

Answer only one question on this page. Do not write on the back of this paper
Behandla endast en uppgift på detta blad. Skriv ej på baksidan

CHALMERS	Anonymous code / Anonym kod: 932	Points for question (to be filled in by teacher) / Poäng på uppgiften (ifylles av lärare)	Consecutive page no. / Löpande sid nr: 3
			Question no. / Uppgift nr: 2

2.4

This is not a good RESTful design.
We use a post (that is supposed to create a new user) and use the query parameters to update the name.
It exists different HTTP requests that allows updating and follow the expected CRUD behaviours (Create, Request, Update, delete).
In this case I would use the patch and pass the attributes to update as a json file in the request using this API:

PATCH /canvas/users/:user

and in the body of the request: { name: "Leitner" }

2.5

The HATEOAS constraint in REST implies that ressource are ~~not~~ identifiable by unique hyperlinks/URL. using href as an attribute of the requested object.
The first API method should always return the same ressource it refers to (a list of users) whereas the second method, if :user is defined should always return the same specific user (if no changes have been made on the ressource of course).

Not, really what HATEOAS is about

3

18

4

CHALMERS	Anonymous code / Anonym kod: 932	Points for question (to be filled in by teacher) / Poäng på uppgiften (ifylles av lärare)	Consecutive page no. / Löpande sid nr: 4 — Question no. / Uppgift nr: 3

line 16 : class = "selector" ✓

line 17 : < span id = "highlight" > ✓ < /span >

line 18 : style=" color : "pink" " -7

line 20 : <span> </span> ✓

line 23 : lang = "fr" ✓

line 24 : lang = "en"

line 25 style=" display : "false" ✓

CSS styling prioritise the header tag definition first. In the code, every <p> will be grey unless defined otherwise.
This can either happen by giving a css class to a tag (like .selector) which is happening line 16. In that case, this specific <p> will be orange even if it is defined that all <p> should be grey.
Overwritting can also work by giving id to elements like line 17 where we use the # to indicate that this specific element should be styled in a specific way.
finally, line 9 shows how a span in a div should behave. In this case, in line 20, even though the div is pink, the span in a div will be black.

if general cascading rules -7

18

4

CHALMERS	Anonymous code / Anonym kod: 932	Points for question (to be filled in by teacher) / Poäng på uppgiften (ifylles av lärare)	Consecutive page no. / Löpande sid nr: 5 · Question no. / Uppgift nr: 4

```
line 6:    v-model: this.name ✓
line 7:    v-model: this.role ✓
line 10:   v-on:click = "createTeacher" ✓

line 18:   name = '', ✓
line 19:   role = '', ✓

line 23:   let teacher = { 'name': this.name , 'role': this.role }
           console.log( teacher)
           this.sendToAPI( teacher)            ✓
           this.name = ''
           this role = ''
```

16

CHALMERS	Anonymous code / Anonym kod	Points for question (to be filled in by teacher) / Poäng på uppgiften (ifylles av lärare)	Consecutive page no. / Löpande sid nr
	932		6
			Question no. / Uppgift nr: 5

When the user is authenticating and sends a get request, the server will ~~respond~~ and set a cookie with user and a session that will be stored in a session database on the server side. This cookie will then be send for any other request instead of asking for re authenticating the user. The following request holds a cookie:

```
GET / canvas / users / ~~user~~ HTTP/1.1
Localhost
~~auth_session~~ cookie : "ABCD"
~~auth_user~~ : "Leitner"
...
```

≠ HTTP Response

3

Cookies are then compared to the ones in the session database and the request goes through or is denied.

In our projects, we used AJAX using the axios library that allowed us to query the backend and update only the relevant components based on the information recieved. Usually, an http request will trigger a response from the server that will send back a whole page to render. the single page application, using AJAX principles will only get a json object instead of the whole page. These objects will then be interepreted by the front end and trigger reaction instead of having the whole page re-rendered. The client side is often heavier in terms of code but messages are lighter between the client and server.

✓

CHALMERS	Anonymous code / Anonym kod: 932	Points for question (to be filled in by teacher) / Poäng på uppgiften (ifylles av lärare)	Consecutive page no. / Löpande sid nr: 8
			Question no. / Uppgift nr: 7

For users that have view problems, adding alternative text to visual elements so they can eventually be described by a voice over system could make the app more blind friendly. We could also remove / exclude elements that are not relevant from the app, that do not need to be described. This also could apply for people who cannot read for instance.

We could adapt colorschemes so that they are friendly to people who cannot see all colours for instance, avoiding blinking and agressive stylings for epilepsia. Map the navigation with keyboard shortcuts so that people with reduced mobility can use a keyboard to navigate through the app instead of using the mouse.

7

Application layer: layer where human / other systems will interact with our system.

Presentation layer: responsible of formatting the data in an intelligible way for the system.

Session layer: managing the connection / authentication between applications and the system (as well as ending them).

Transport layer: responsible of transmitting the data between systems

Network layer: responsible globally of the communication between the / systems

Data layer: responsible of the communication locally between connected / systems.

Physicall layer: physicall connection between systems (cables, waves, etc).