Course 635-1 – Autumn Semester 2019
Java EE Mini Project
Prof. Dr. Adrien Depeursinge

Mini project description:

The mini project will constitute the **mark for the midterm exam**. Each **student duo** must deliver a zip file with the code and a 5-slides presentation.

Each student duo receives a topic that includes a minimum of 3 types of entities:

Topic	Entity 1	Entity 2	Entity 3	STUDENT 1	STUDENT 2
Travel	Passenger	Flight	Destination		
Car selling	Owner	Car	Car brand		
University	Professor	Courses	Research projects		
Football	Player	Club	League		
Music	Singer / Band	Song	Album		
Book	Writer	Book	Category		
Series	Viewer	Episode	Season		
Network	User	Device	Operating System		
Video games	Developer	Game	Category		
Movie	Viewer	Movie	Category		
Restaurants	Owner	Ratings	Menu		
War	Country	Weapons	Leader		
Holidays	Country	Hotel	Activity		
School	Student	Mark	Subject		

Each student duo must develop a **mini information system** for their assigned topic.

It should implement the three layers seen during the course (i.e. presentation, service and persistence). It must use all technologies mentioned below as ***mandatory*** and at least **two** additional technologies ***to be chosen***.

In terms of business objects, the data should contain at least the three types of entities mentioned above but can include more. You are responsible for generating the data instances for all entities, e.g. entity “Athlete”:

id	firstname	lastname	country
1	Carl	Lewis	USA
2	Usain	Bolt	Jamaica
3	Michael	Phelps	USA
...	...	...	...

Timeline

- Officially starts on **04.12.2019**,
- The courses of the 04.12, 11.12 and 18.12 will be dedicated to the mini project.
- Deadline: the project code (zip file) and the presentation slides (5 slides, ppt, pdf, key) must be uploaded on the **07.01.2020 before 11:59pm on Cyberlearn under Section 7 > Devoir – MiniProject**,
- Presentations: each student duo will present their project with 5 slides (5min talk + 5min demo + 5min questions) on the **08.01.2020** (see presentation schedule below).

entity, usecase, what strages in project
show how the code works
questions will be asked

Tips

- Use the implementation examples seen in the labs.
- Start as early as possible and ask questions if the instructions are not clear. Do not hesitate to visit me in Technopole or book a skype call for questions. Please send me an email before: adrien.depeursinge@hevs.ch
- Define the *use-cases* and *entity mapping* of your application before starting the implementation (using e.g. UML *use-case* and *class* diagrams).
- Start the implementation with the persistence layer.
- Reuse and adapt the basic structure of TP12 in Eclipse to avoid redefining all configuration files from scratch (e.g. pom.xml).
- Split the work between students by application layer.
- In the project evaluation (see below), all points will be given only if the technology is implemented in a **meaningful fashion** (e.g. annotating an EJB method with @TransactionAttribute is not enough to have a true transaction).

both on persistence , then one service and one the other

List of Java EE technologies

- Presentation layer
  - JSF (including managed beans and faces-config.xml): ***mandatory***
  - Facelets (including simple templates and EL): ***mandatory***
- Business/service layer
  - Stateless EJB ***and[1]/or*** Stateful EJB: ***mandatory***
  - Reference to EJBs: JNDI ***and[1]/or*** dependency injection: ***mandatory***
  - JTA or @TransactionAttribute (including a business process requiring a transaction!): ***to be chosen***

  *[1] will be counted as one extra "**to be chosen**" technology if both are implemented (and adequately chosen)*
- Persistence layer (JPA)
  - Entities: ***mandatory***
  - Entity Manager, PC: ***mandatory***
  - Mapping associations and relations: ***mandatory***
  - Transitive persistence (i.e. cascade): ***mandatory***
  - JPQL: ***mandatory***
  - Inheritance: ***to be chosen***
  - Embedding: ***to be chosen***
  - Extended PC (needs to be justified): ***to be chosen***
- Security: ***to be chosen***

Presentation schedule

Please arrive 10min earlier than your time (no time extension possible).
Presentation format: 5min talk (5 slides) + 5min for demo and questions.
Describe which Java EE technologies were used and how they were implemented.
Explain how you split the work between students.

Student duo	Topic	Presentation time (AM)	Location
Student 1, Student 2	Travel	Wed. **08.01** at **08:30**	Bellevue 102
	Book	Wed. **08.01** at **08:45**	Bellevue 102
	Network	Wed. **08.01** at **09:00**	Bellevue 102
	War	Wed. **08.01** at **09:15**	Bellevue 102
	Car selling	Wed. **08.01** at **09:30**	Bellevue 102

Evaluation example

			General evaluation						
			General quality of the project	Functional consistency and implementation of the 3-tier architecture	Deadline not met	JSF	Facelets	Session EJBs	
	Student duo	Topic	5	3	2	3	2	2	
1	…	Travel	4	2.5	2	3	1.5	2	
2	…	Book	4.75	3	2	2.75	2	2	
3	…	Network	3	2.5	2	3	1.5	1.5	
4	…	War	3.75	3	2	2.75	2	2	
5	…	Car Selling	4	3	2	3	2	1	

…

Implementation and understanding of Java EE technologies							Presentation and demo			
Resource injection (JNDI or direct)	Entities, relations and transitive persistence	optimization ORM	JPQL	Optional 1	Optional 2	Additional option (if any)	Clarity and organization	Timing	Total	***Grade***
1	2	2	1	1	1	1	3	1	30	
1	1.75	1	0.5	1	1	1	3	1	26.25	***5.5***
1	1.5	1.5	1	1	1	1	3	1	28.5	***6***
1	1	0.5	0.5	1	1	1	1.5	1	22	***4.5***
1	1.25	1	0.5	1	1	1	2.75	0.5	25.5	***5.3***
1	1.5	1	0.5	1	1	1	3	1	26	***5.4***

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