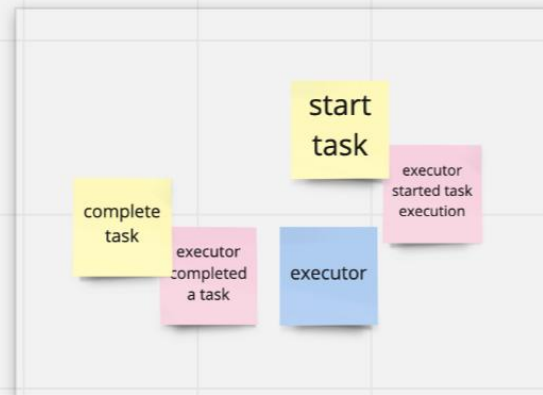


Group 3

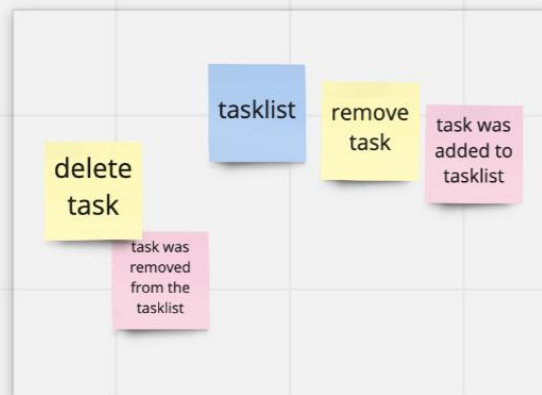
Executor Domain



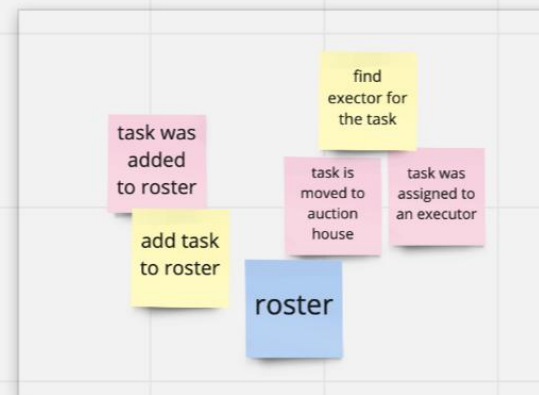
Executor pool Domain



Tasklist Domain



Roster Domain



Auction house Domain



Architecture Characteristics Worksheet

System/Project: Group 3

Architect/Team: Atilla Güven, Fabio Göldi, Phil Natter, Valentin Berger, Fabian Gubler, Sven Schnydrig Date: 24.09.22

Candidate Architecture Characteristics

performance	data integrity	deployability
responsiveness	data consistency	testability
availability	adaptability	abstraction
fault tolerance	extensibility	workflow
scalability	interoperability	configurability
elasticity	concurrency	recoverability

others: modularity

^a denotes characteristics that are related; some systems only need one of these, other systems may need both

^b

Top 3 Driving Characteristics

- ☒1. interoperability
- ☒2. scalability
- ☒3. workflow
- ☐4. concurrency
- ☐5. fault tolerance
- ☐6. modularity
- ☐7. data consistency

Instructions

- Identify no more than 7 driving characteristics.
- Pick the top 3 characteristics (in any order).
- Implicit characteristics can become driving characteristics if they are deemed *structural* concerns.
- Add additional characteristics identified that weren't deemed as important as the list of 7 to the *Others Considered* list.

Implicit Characteristics

- feasibility (cost/time)
- security
- maintainability
- simplicity

Others Considered

- performance
-
-
-

Architecture Characteristics Worksheet

performance

The amount of time it takes for the system to process a business request

responsiveness

The amount of time it takes to get a response to the user

availability

The amount of uptime of a system; usually measured in 9's (e.g., 99.9%)

fault tolerance

When fatal errors occur, other parts of the system continue to function

scalability

A function of system capacity and growth over time; as the number of users or requests increase in the system, responsiveness, performance, and error rates remain constant

elasticity

The system is able to expend and respond quickly to unexpected or anticipated extreme loads (e.g., going from 20 to 250,000 users instantly)

data integrity

The data across the system is correct and there is no data loss in the system

data consistency

The data across the system is in sync and consistent across databases and tables

adaptability

The ease in which a system can adapt to changes in environment and functionality

concurrency

The ability of the system to process simultaneous requests, in most cases in the same order in which they were received

interoperability

The ability of the system to interface and interact with other systems to complete a business request

extensibility

The ease in which a system can be extended with additional features and functionality

deployability

The amount of ceremony involved with releasing the software, the frequency in which releases occur, and the overall risk of deployment

testability

The ease of and completeness of testing

abstraction

The level at which parts of the system are isolated from other parts of the system (both internal and external system interactions)

workflow

The ability of the system to manage complex workflows that require multiple parts (services) of the system to complete a business request

Architecture Characteristics Worksheet

configurability

The ability of the system to support multiple configurations, as well as support custom on-demand configurations and configuration updates

recoverability

The ability of the system to start where it left off in the event of a system crash

feasibility (implicit)

Taking into account timeframes, budgets, and developer skills when making architectural choices; tight timeframes and budgets make this a driving architectural characteristic

security (implicit)

The ability of the system to restrict access to sensitive information or functionality

maintainability (implicit)

The level of effort required to locate and apply changes to the system

simplicity (implicit)

The level of complexity of the solution; generally, the simpler the solution, the easier and cheaper it is to maintain

Explicit characteristics

1. Interoperability
Since tasks, for which no internal executors are available, need to be executed by external executors, interoperability is critical. We need the interoperability for the auction house.
2. Scalability
Each group will form an organization. Each organization can have thousands of users adding tasks to the organization's task list.
3. Workflow
The roster must assign the tasks to the correct executor so that the executor is able to complete the task. Therefore, it is important to assign the tasks to the appropriate executor.
4. Concurrency
To ensure, that the system still works while an executor is adding himself, we need to process simultaneous requests on the system.
5. Fault tolerance
The System should be able to run even if an executor fails.
6. Modularity
Some components should run independently. It should be possible to add new executors independent to other components.
7. Data consistency
Data must be synced and consistent between modules e.g. if an executor starts a task the roster has to be informed.

Implicit characteristics

- 1) Performance
The performance is not explicitly mentioned, but it is necessary so that the user does not have to wait minutes for his requests.