

Instructions



How was the exam?

0 responses



Do you have problems with practice?

Agenda

- Recall what was learned
- Discuss current topic
- Practice

Total Recall



What do you remember most from the previous learning part?



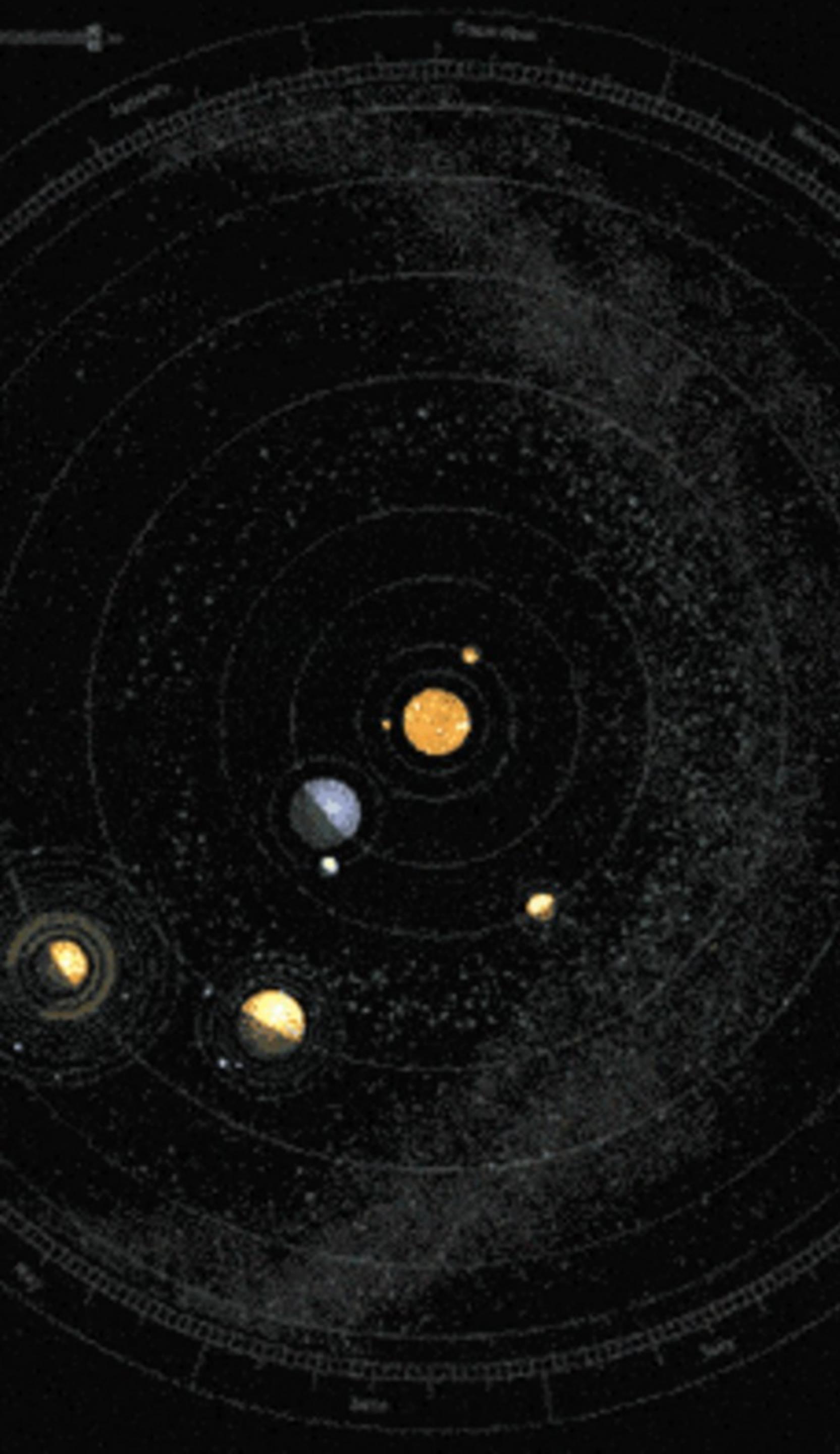
Rank your knowledge of the topics

- 1st** | Expert, Low Coupling, High Cohesion
- 2nd** | SRP, OCP
- 3rd** | LSP, ISP
- 4th** | DIP, IoC, DI
- 5th** | MVC
- 6th** | YAGNI, KISS, DRY
- 7th** | Code smells



Passed

- Expert, Low Coupling, High Cohesion
- SRP, OCP
- LSP, ISP
- DIP, IoC, DI
- MVC
- YAGNI, KISS, DRY
- Code smells



Discuss current topic



Earth's rotation is changing speed.

It's actually slowing. This means that, on average, the length of a day increases by around 1.8 seconds per century. 600 million years ago a day lasted just 21 hours.

Have you looked through code smells materials?

0



yes

0



no

Overview and Classification of Patterns

What types of patterns do you know?



Why we need Creational patterns?

0 

to automate creation

0 

to separate creation from
usage

0 

to comply with architecture

What creational patterns do you know?

0 responses



Creational patterns (examples)

- Factory Method
- Abstract Factory
- Builder
- Prototype
- Singleton

Why we need Structural patterns?

0

to initialize objects

0

to form large structures

0

to improve performance

What are two types Structural patterns do you know?

0 ✓

is-a and has-a

0 ✗

structs and constructs

0 ✗

init and perform components

What Structural patterns do you know?

0 responses



Structural patterns (examples)

- Adapter
- Bridge
- Composite
- Decorator
- Facade
- Flyweight
- Proxy

Why we need Behavioral patterns?

0 ✓

to set connections between objects

0 ✓

to set communication between objects

0 ✓

to assign responsibilities between objects

What Behavioral patterns do you know?

0 responses



Behavioral patterns (examples)

- Chain of Responsibility
- Command
- Iterator
- Mediator
- Memento
- Observer
- State
- Strategy
- Template Method
- Visitor

Architectural Patterns are about

0 ✓

high or module level

0 ✓

solving global concerns

0 ✓

complying with security,
performance, maintainability

0 ✗

guiding implementation



What architectural patterns you know?

0 responses



Common architectural patterns

- Layered pattern
- Microservices pattern
- Event-Driven Architecture (EDA)
- MVC
- Service-Oriented Architecture (SOA)

Top 7 Architecture patterns

- Monolithic Architecture
- Microservices Architecture
- Event-Driven Architecture (EDA)
- Serverless Architecture
- Service-Oriented Architecture (SOA)
- Containerization and Kubernetes
- Reactive Architecture

Few more architectural patterns

can be found here:

<https://ideasoftware.com/blog/modern-software-architecture-patterns/>

What are we trying to achieve when using immutable objects?

0 ✓

Thread Safety

0 ✓

Predictability and
Debugging

0 ✗

adaptability and
frequent changes

0 ✓

Caching and Optimization



Is shallow copy allowed for immutable object?

0

yes

0

sometimes

0

no



Shallow Copy	Deep Copy
Creates a new object but copies references of the original object's fields.	Creates a new object and recursively copies all fields, including nested objects.
References nested objects from the original object, so changes to nested objects affect both the original and the copy.	Copies nested objects completely, so changes in one object don't affect the other.
It's more memory efficient because it shares references to existing objects.	It consumes more memory because it duplicates all objects and their nested objects.
It's faster since it only copies references.	It's slower as it needs to copy all nested structures recursively.

Deep copy vs Shallow

Values vs References

What is copy-on-write approach?

0

copy object after changing

0

clone object into field
before editing field

0

store a duplication value to
rollback

Drawbacks of immutability

- Memory overhead
- Performance trade-offs

Q&A part

0 questions
0 upvotes