Lecture-12
Object oriented design patterns

Lecturer: Temurbek A. Kuchkorov

Subject: OOP-II

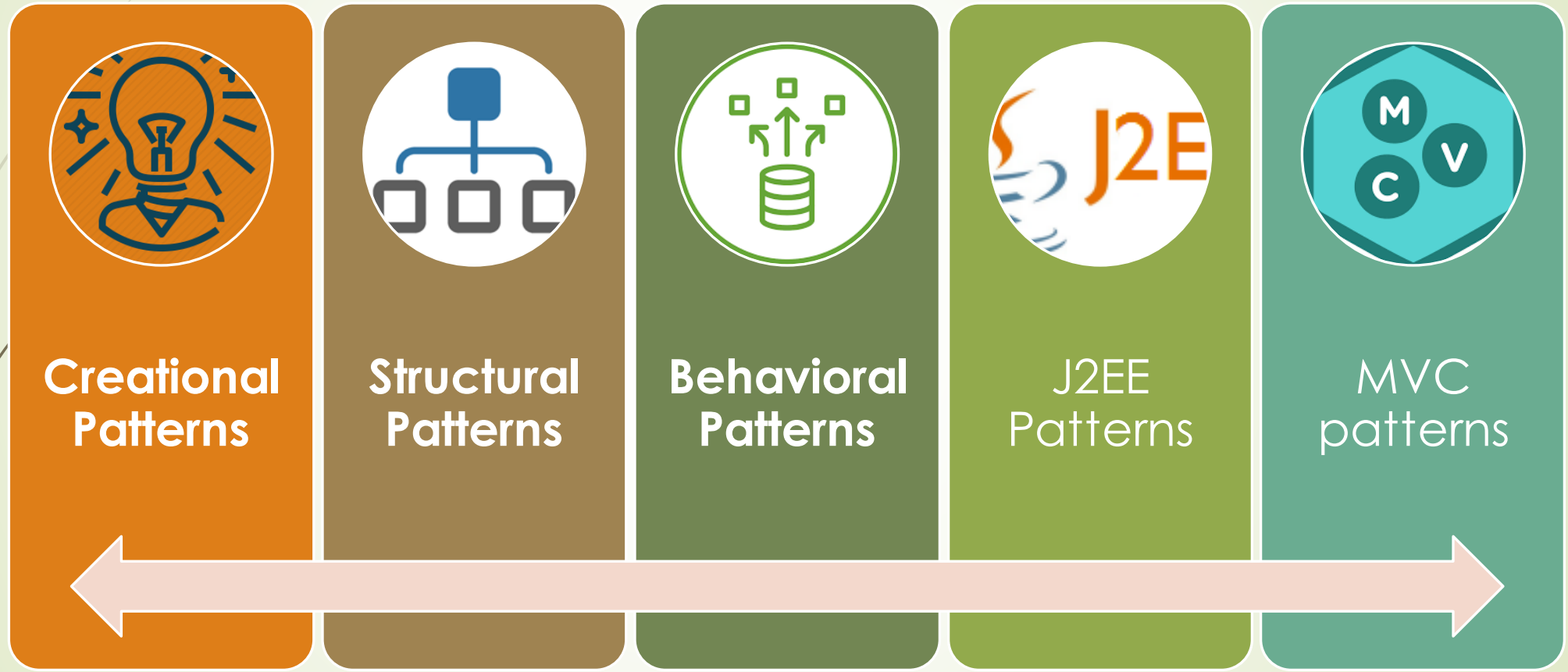
E-mail: timanet4u@gmail.com

Table of contents

1. Design patterns overview

- **Design patterns** represent the best practices used by experienced object-oriented software developers.
- **Design patterns** are solutions to general problems that software developers faced during software development.
- **Gang of Four (GOF)**. According to these authors design patterns are primarily based on the following principles of object orientated design.
  - Program to an interface not an implementation
  - Favor object composition over inheritance

2. Types of design patterns



3. Creational patterns

- Creational design patterns provide a way to create objects while hiding the creation logic, rather than instantiating objects directly using new operator. This gives program more flexibility in deciding which objects need to be created for a given use case.

1. Hiding the creation logic
2. Different method of instantiating objects
3. Flexibility for creating object

4. Behavioral design patterns

- **Behavioral design patterns** are design patterns that identify common communication patterns between objects and realize these patterns.
- By doing so, these patterns increase flexibility in carrying out this communication.

4. Type of behavioral patterns

1. Iterator Pattern
2. Observer Pattern
3. Interpreter Pattern
4. Memento Pattern
5. Strategy Pattern
6. Template Pattern
7. State Pattern

5. Structural patterns overview

- **Structural design patterns** are concerned with how classes and objects can be composed, to form larger structures.
- The structural design patterns **simplifies the structure by identifying the relationships**.
- These patterns focus on, how the classes inherit from each other and how they are composed from other classes.

5. Type of structural patterns

1. Adapter Pattern
2. Bridge Pattern
3. Composite Pattern
4. Decorator Pattern
5. Flyweight Pattern
6. Proxy Pattern

References

- http://www.oodesign.com/creational-patterns/
- http://www.oodesign.com/behavioral-patterns/
- http://www.oodesign.com/structural-patterns/