

-

Product
AbstractFactory, ConcreteFactory,
AbstractProduct, ConcreteProduct, Client

client, Product, Product

-
API ADT

Builder= API, ConcreteBuilder= ,
Director= workflow, Product= ADT
Product, Product

vs

-
UI event handling

msg receiver, msg
Handler(Handler), ConcreteHandler

msg receiver, sender (= /)
msg

-
Container

container, API
Aggregate(Container ADT), ConcreteAggregator, Iterator, ConcreteIterator

- Command

Command(API), ConcreteCommand,
Invoker(), Receiver(client)
, ,undo

-
client

Product, ConcreteProduct, Creator,
ConcreteCreator

Product Creator

- Adapter
client

ObjectAdapter(), ClassAdapter() 2
. Target= , Adapter, Adaptee()

Adapter vs Proxy
Adapter interface vs proxy realSubject redirection
Proxy

-
Abstraction, RefinedAbstraction(client API), Implementor(ADT), ConcreteImplementor



Adapter vs Bridge

. client . Bridge

- Mediator

workflow .

interaction ,
interaction

Mediator, ConcreteMediator, Colleague,
ConcreteColleague

Mediator ,
, Mediator

Facade vs Mediator

Facade Interface vs Mediator
interaction .

Facade vs Mediator .

- State

, if-else

Context(client API), State, ConcreteState

state , State state

- Composite

, API

Component(client API), Leaf(
) , Composite(Component
API)

client , hierarchy

(1 ,)

- Visitor

Visitor, ConcreteVisitor, Element,
ConcreteElement

ConcreteElement Visitor .

- Observer

Subject(Observer , notify()
observer), ConcreteSubject,
Observer, ConcreteObserver(subject
ConcreteSubject notify .)

1:N sender, receiver , ,

- Strategy

Context(client API), Strategy, ConcreteStrategy

, ConcreteStrategy

Strategy , .

SOLID - Single Responsibility Principle

?



By **kniz**
cheatography.com/kniz/

Published 24th June, 2020.
Last updated 24th June, 2020.
Page 2 of 9.

Sponsored by **CrosswordCheats.com**
Learn to solve cryptic crosswords!
<http://crosswordcheats.com>

SOLID - Open Closed Principle

SOLID - Liskov substitution principle

SOLID - Interface Segregation principle

?
? (mixin, interface), Delegation

SOLID - Dependency Inversion Principle

?, (ADT) ()
?

Coupling vs Cohesion

-> (, Composition,)
->

System Service (FR) Context(NFR)

SDLC Water fall, Incremental, Evolutionary, Spiral Iterative, Agile, RUP

RUP Inception, elaboration, construction, transition

Incremental RE RE , code code , Test Test

Validation vs Verification , Validation vs Verification

(cont)

RE Feasibility Test > RE Elicitation > Req Specification > Req Validation

Elicitation System model Workshop, Brainstorming, survey, interview, role playing, prototyping . Prioritization&Negotiation NFR (FR)

Negotiation ranking, ahp, grouping, bubble sort, hundred dollars

Specification / .

SRS Software Requirement Specification (). Plan .

Validation ()

- QA - Functionality

Suitability()

Accuracy

Interoperability() interaction

- QA - Functionality (cont)

Security , ,

Compliance() SW , ,

- QA - Reliability

Maturity() SW

Fault Tolerance(,)

Recoverability() ,

- QA - Usability

Usability

Understandability() ?

Learnability()

Operability() SW / ?

Attractiveness()



By **kniz**
cheatography.com/kniz/

Published 24th June, 2020.
Last updated 24th June, 2020.
Page 3 of 9.

Sponsored by **CrosswordCheats.com**
Learn to solve cryptic crosswords!
<http://crosswordcheats.com>

- QA - Effectiveness

Effectiveness
?

TimeBehavior()
?

Resource Utilization()

- QA - Maintainability

Analyzability() SW

Changeability()

Stability() SW

Testability SW

- QA - Portability

Adaptability() SW

Installability()

Co-existancy() , SW

- QA - Portability (cont)

Replaceability() SW

- Viewpoints 4+1

Viewpoints? . View .
Logical Views , Process View
, , Development (,
) , Deployment

Use- Case view Activity/Info Flow Diagram,
UseCase diagram

Logical View Sequence Diagram, Domain
Model Class Diagram

Development view component diagram, package
diagram

Domain Model? RE Conceptual class
diagram.

Process view sequence, activity diagram

Physical view deployment diagram

Quality Life cycle

Process Quality

Internal QA
QA

External QA Stake holder QA. 2

Quality in use QA ()

Quality Life cycle (cont)

Architecture concerns , .

- GRASP

Responsibility? contract . /
private
field

GRASP coupling, cohesion, expert,
controller, creator, don't talk to
stranger

Low coupling ?

cohesion ?

Information Expert (encapsulated) private info .



- GRASP (cont)

Creator A B , B , B aggregate
B A B .

controller

Don't talk to stranger

- ADD

ADD? Architecture Design Methodology

Plan -> -> Architecture Driver ->

do NFR Style + FR ->

and -> Usecase, QA

check constraint ->

- Unified process

UP inception phase, elaboration,
construction, transition

phase test, code, planning, Req,
discip- analysis & design, business
lines modeling, deployment, config-
uration & change management,
Project management

Inception Business modeling, Req ,
phase Prototyping, feasibility study

- Unified process (cont)

Elaboration ADD Baseline
Architecture . Baseline archir-
ecture skeleton architecture
elaboration

- Pattern, Style, Idium

Architecture == Architecture Pattern
Style

Pattern? (,)

Design components subsystem
pattern?

idium

Associ-
ation

Aggreg- owner owning .
ation

Compos-
ition

Source(), (Stimulus), (Artifact),
(Environment), (Response), (R-
esponse Measure)

(cont)

Modifi (), , LateBinding
ability

() (, , , ,

() , , (HW),

() Ping,Echo(, ,),
HeartBeat(,),

() /Node ,

(), (write), (,
, Non-Repudication(, , ,
AccessControl(,), ()



By kniz

cheatography.com/kniz/

Published 24th June, 2020.

Last updated 24th June, 2020.

Page 5 of 9.

Sponsored by **CrosswordCheats.com**

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>

UML

class diagram class, interface, component, visibility

deployment diagram artifacts(file, db), node, components

component diagram port, provided interface, required interface, component,

sequence lifeline, message, interaction use,

activity diagram swim lanes, merge node, decision node, initial node, final node, merge node, fork node

data flow external entity, process, datastore

- Batch Sequential

Data Flow

Data Flow AS

input

Program, Data Store

()

input

latency

- Pipe and Filter

Data Flow

- Pipe and Filter (cont)

Batch Sequential

- Process Control

Data Flow

Controller, Actuator, Process, Sensor

Controller Actuator start/stop

. Actuator Process

Process input start/stop

sensor Controller . closed -

loop

- Process Control (cont)

- Repository

Repository, Components

interaction

, BackUp&Restore

components / (interaction

),

components

- Blackboard

Data Centered

Blackboard, Control, KnowledgeSource

KnowledgeSource 1

. Blackboard Knowle-

dgeSource blackboard

Control



By kniz

cheatography.com/kniz/

Published 24th June, 2020.

Last updated 24th June, 2020.

Page 6 of 9.

Sponsored by **CrosswordCheats.com**

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>

- Blackboard (cont)

?

KnowledgeSource
blackboard
KnowledgeSource

- Layered

Hierarchical

Layer

layer Layer

?

layer

- Layered (cont)

, Exception
Handling depth

- PlugIn Architecture

Hierarchical

CoreSystem, Plug-in modules

App PlugIn coreSy-
stem

- Virtual Machine

Application, Virtual Machine, Existing
Platform

, SW

- Non-buffered event invoc

Implicit asynchronous communication
software

Event source, event listener

interaction

listener / , (source, listener
)

listener

- Buffered Message Based

Implicit Asynchronous communication

MessageBroker, Consumer, Producer

Producer msg xml broker
Broker , borker route
consumer

, ,

Producer Consumer idle
, / , producer

- Client - server

Distributed

Client, Server

tier



- Client - server (cont)

Control
?

(presentation, business logic),

- Multi tier

Distributed

Tier

Layer vs Layer, Tier
Tier

tier, ,

- Dispatcher

Distributed

Client, Broker, Server

Server . Broker Server load
Server client . Broker tier
, Server Broker register .

Client-Server, , ,

- Dispatcher (cont)

Broker, .

- Broker

distributed

Broker, Client, Servant

CORBA . Node Broker
Broker Node Servant .
Node Node .

interaction, ,
(fault-tolerance),

?

- Master slave

Distributed

Master, Slave

Master Slave

fault tolerance, (slave)

fault tolerance, reliability

- P2P

Distributed

Peer Provider
Consumer contents

struct- unstructured, struct-
ured, ured, .
unstru- unstru-
ctured ctured

DB

power, node

- Service oriented

distributed

(OS) MVC
XML
XML



By **kniz**
cheatography.com/kniz/

Published 24th June, 2020.
Last updated 24th June, 2020.
Page 8 of 9.

Sponsored by **CrosswordCheats.com**
Learn to solve cryptic crosswords!
<http://crosswordcheats.com>

- Service oriented (cont)

?

, ,

, , .

- micro service

Distributed

SOA . SOA monolithic .
interaction

. (DB) Microservice
API encapsulation
. DB DB .

RESTful? API . json https
. RESTful API HTTP GET,
POST . API .

, . , / .

- micro service (cont)

? micro service .

- MVC

View Control , Model
impact .

- PAC

By **kniz**

cheatography.com/kniz/

Published 24th June, 2020.

Last updated 24th June, 2020.

Page 9 of 9.

Sponsored by **CrosswordCheats.com**

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>