

# Vývoj Aplikácií s Viacvrstvovou Architektúrou

## 01. Úvod do Architektúry a Javy



# Čo nás čaká a neminie...

## 1. časť

Úvod do Javy

Štruktúra platformy

Vývojové technológie

Kolekcie

Logovanie

Lokalizácia

## 2. časť

XML, IO

Regulárne výrazy

Modularita

JDBC

Bezpečnosť

Prehľad JEE a .NET

# Čo nás čaká a nemenie...

1. časť

Architektúra

2. časť

Java

Best practices | Faily | Fuckupy



**Čo je architektúra (viacvrstvová) a na čo je dobrá?**





Join at  
**slido.com**  
**#VAVA1**



# SLIDO - VAVA1

1. Čo je to architektúra? Čo si pod ňou predstavujete?
2. Potrebuje každá firma IT architekta?
3. Čo by mal vedieť/ovládať každý IT architekt?

<https://app.sli.do/event/wwbrEKpsUjFrBqdi6LUZKn>

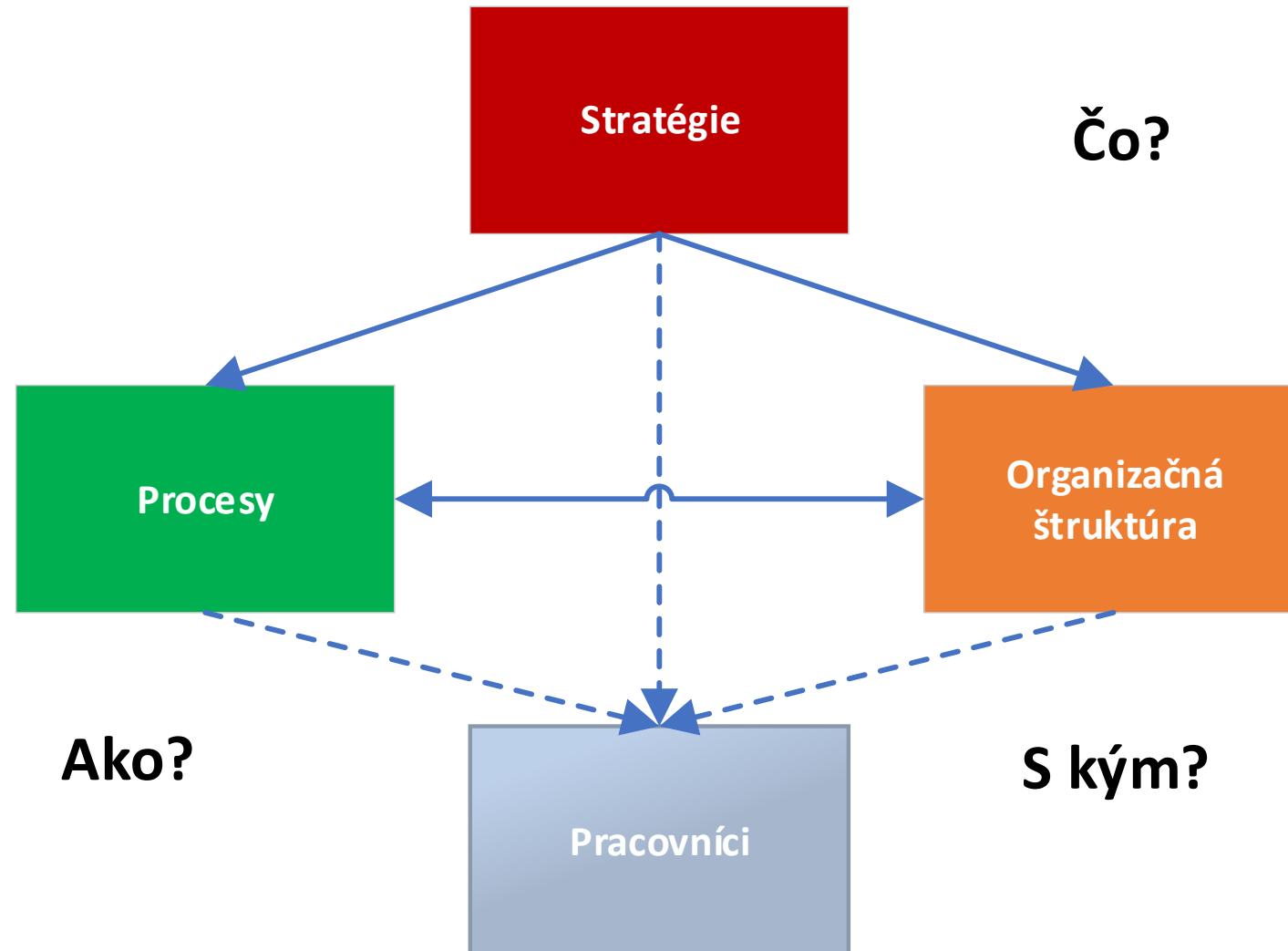
PART **BUSINESS** STRATEGIC ARCHITECTURE

STRUCTURE DEMANDS ENTERPRISE CONCEPT

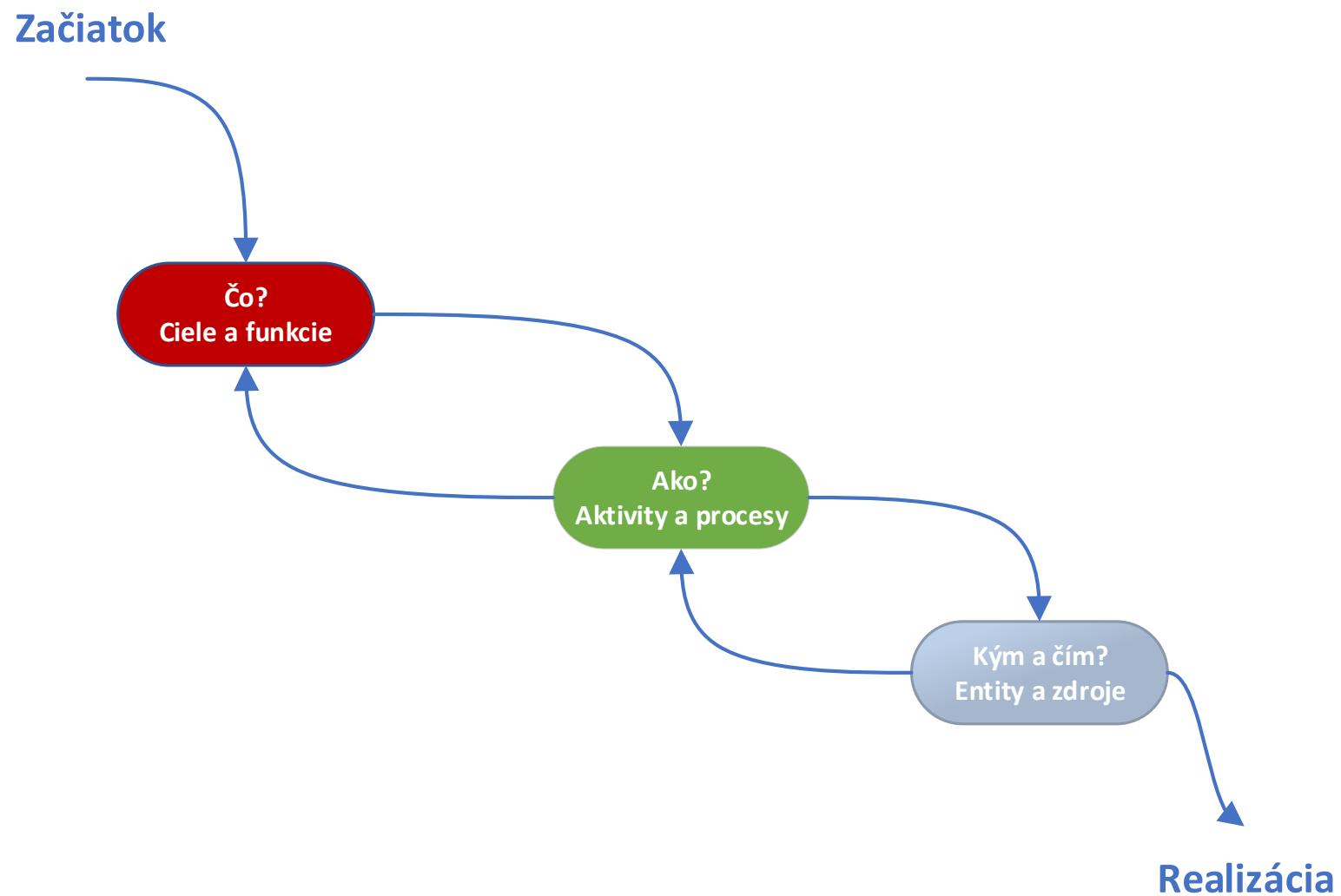
FUNCTIONALITY MODEL FRAMEWORK

KNOWLEDGE OBJECTIVES ORGANIZATION

# Základný pohľad na organizáciu



# Procesný nadhlľad



# Čo je Architektúra?

## Definícia

- „Umenie a/alebo veda o navrhovaní a stavbe budov“
- „Konštrukcia vo všeobecnejšom význame“ (Webster)
- Voľne: **Architektúra vyjadruje podstatu systému** (konštrukciu aj vlastnosti)

## Typy architektúr

- Architektúra budov
- Architektúra sídiel (urbanizmus)
- Záhradná architektúra
- Architektúra bunkového jadra (biológia)
- Hardvérová architektúra
- Softvérová architektúra
- **Podniková architektúra/biznis architektúra**

# Čo je to podniková architektúra?

- Architektúra podniku ako celku, ako **spoločensko-technického** systému
  - Zahŕňa: ľudí, organizáciu, biznis (procesy) technológie ...
- Existuje viacero definícií Gartner, TOGAF, Zachman, MIT...



# Čo je to podniková architektúra?

- Podniková architektúra zahŕňa **opis cieľov organizácie**, spôsoby ako sú tieto ciele dosahované prostredníctvom **obchodných postupov** a **spôsobov**, ako môžu tieto **procesy** byť **podporené technológiami**.

-- Roger Sessions

# Čo je to podniková/biznis architektúra?

## TOGAF

- BA definuje biznis stratégiu, riadenie, organizáciu a kľúčové biznis procesy

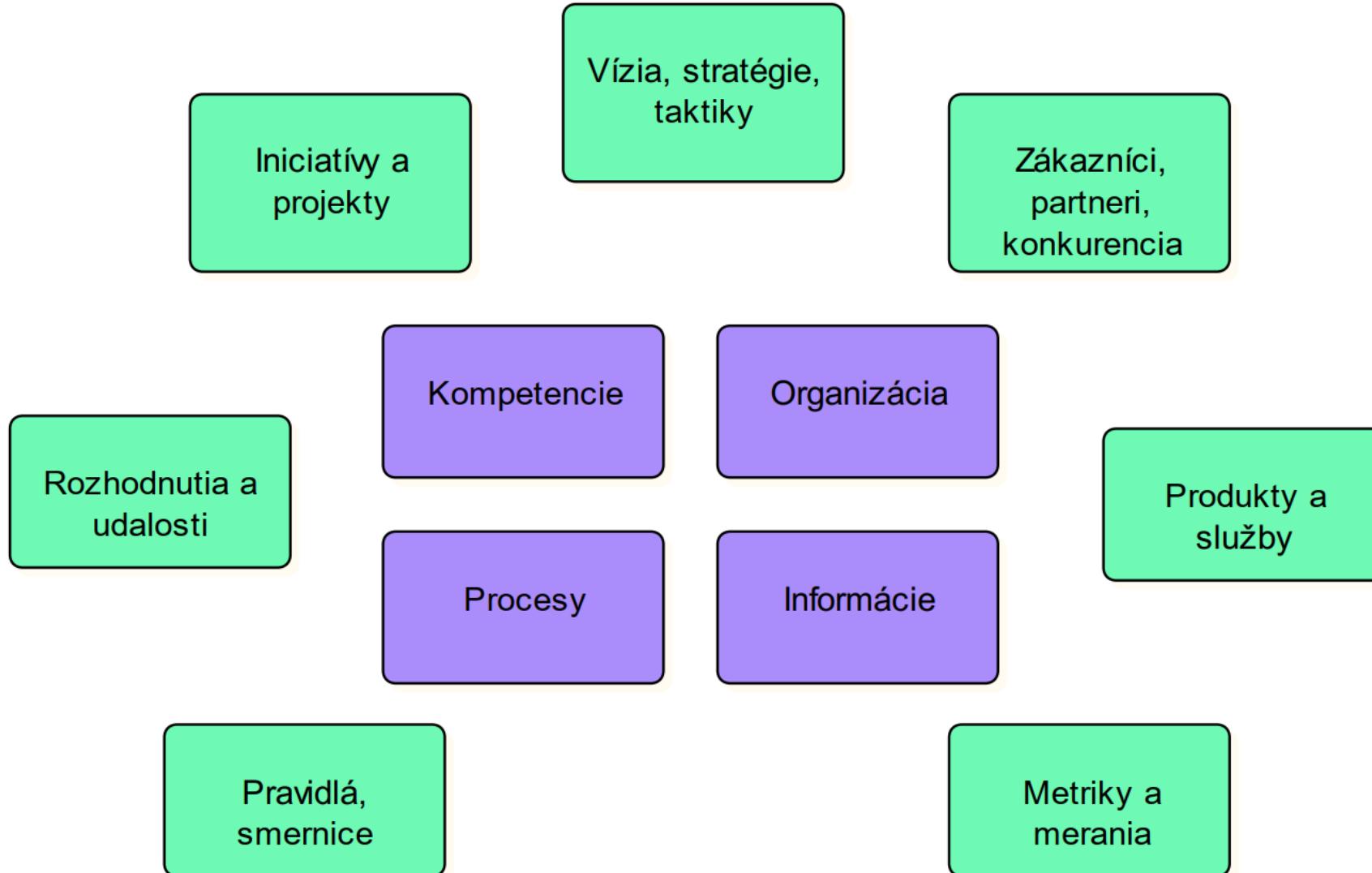
## OMG

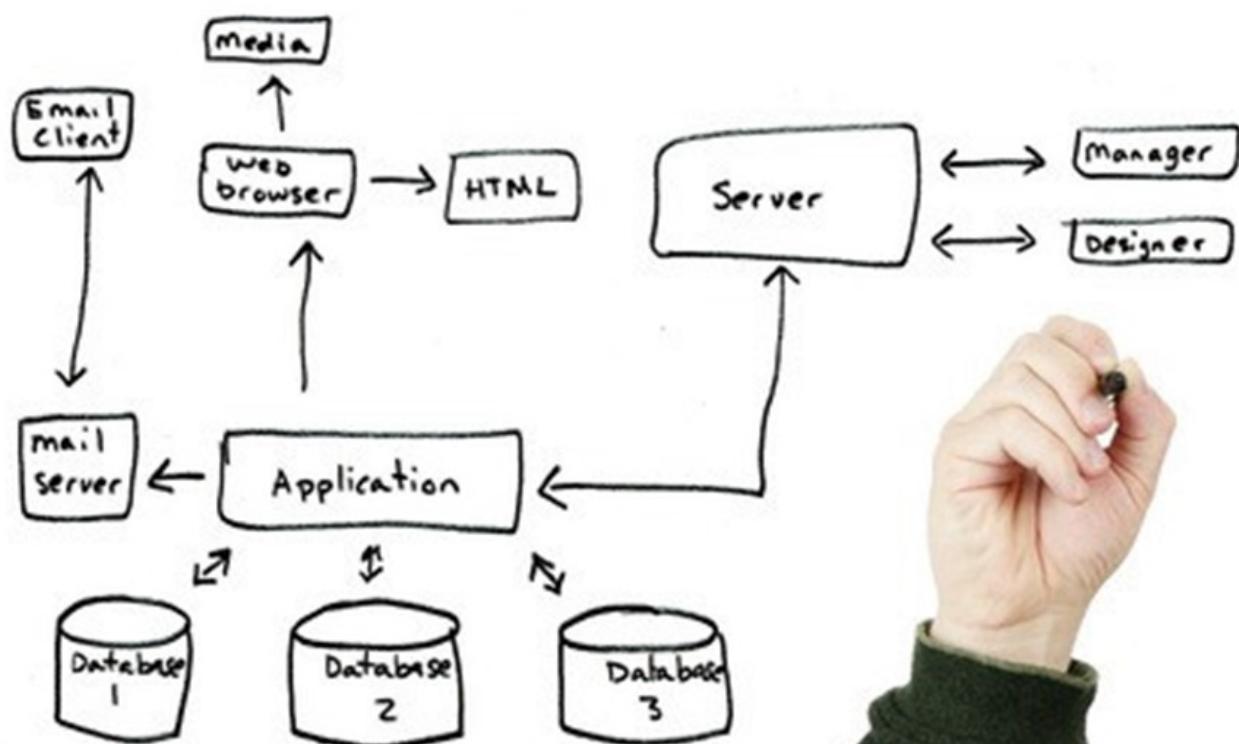
- Schéma podniku, ktorá umožňuje spoločné porozumenie organizácií a používa sa na usmernenie **strategických cieľov** a **taktických požiadaviek**

## BIZBOK

- Definuje časti biznis architektúry

# Časti biznis architektúry





Potrebujem  
podnikového IT  
architekta?



## IKT architekt, projektant

KARTA ZAMESTNANIA

OBLASŤ PRE ČŽV

O SEKTORE

PRIPOMIENKY A OTÁZKY

GARANCIA

 VYTLAČIŤ

 ULOŽIŤ AKO

IKT architekt, projektant vykonáva, prípadne riadi vysoko odborné tvorivé činnosti v oblasti návrhu IKT. Študuje a stanovuje smery technického rozvoja informačných technológií, navrhuje riešenia na optimalizáciu a zvýšenie efektívnosti prostriedkov výpočtovej techniky. Navrhuje základnú architektúru informačných systémov, ich komponentov a vzájomných väzieb. Zabezpečuje projektovanie dizajnu, architektúry IT štruktúry, špecifikácie jej prvkov a parametrov, vhodnej softvérovej a hardvérovej infraštruktúry podľa základnej špecifikácie riešenia. Zodpovedá za spracovanie a správu projektovej dokumentácie a za kontrolu súladu implementácie s dokumentáciou. Môže tiež poskytovať konzultácie, poradenstvo a vzdelávanie v oblasti svojej špecializácie.

[viac...](#)



## How to Deal with Difficult People on Software Projects

Product Managers									
	The Dictator	The Sales Liaison	The Executive Assistant	The Napkin Sketcher	The Scope Wiggler	The Patent Author	The Scope Creeper	The People Pleaser	
Designers									
	The Note Taker	The Disenfranchised	The Professor	The Artist	The Distrusted	The Blueprinter			
Project Managers									
	The Meeting Scheduler	The Statistician	The Delusional	The Pessimist	The Optimist	The Cheerleader	The Tyrant	The Hoverer	
Development Managers									
	The Formerly Technical	The Non-Technical	The Ladder Climber	The Peacemaker	The Wants-to-be-Technical				
Developers									
	The Rockstar	The Aspiring Manager	The Bull in the China Shop	The Diva	The Extreme Overestimator	The Extreme Underestimator	The Hostage Taker	The Idealist	The Incompetent
Quality Assurance									
	The Firehose	The Blamer	The Alarmist	The Scientist	The Misleader	The Downtrodden	The Random Clicker	The Flippant	



## Project templates

### Software development

Service management

Work management

Marketing

Human resources

Finance

Design

Personal

Operations

Legal

Sales

PRODUCTS

Jira Software

Jira Service Management

## Software development

Plan, track and release great software. Get up and running quickly with templates that suit the way your team works. Plus, integrations for DevOps teams that want to connect work across their entire toolchain.



### Kanban

Visualize and advance your project forward using issues on a powerful board.



### Scrum

Sprint toward your project goals with a board, backlog, and roadmap.



### Bug tracking

Manage a list of development tasks and bugs.



Skryť navigáciu

Hlavná stránka



Hľadať v projektoch, programoch, službách, agendách...

Rozšírené vyhľadávanie

Hľadať

ORGÁNY VEREJNEJ MOCI

EGOVERNMENT  
KOMPONENTY

ISVS

Koncová služba

Proces

Aplikačná služba

Infraštruktúrna služba

Celkové náklady na  
vlastníctvo

Monitoring

KRIT, ŠTÚDIE, PROJEKTY

INTEGRÁCIE A SLA

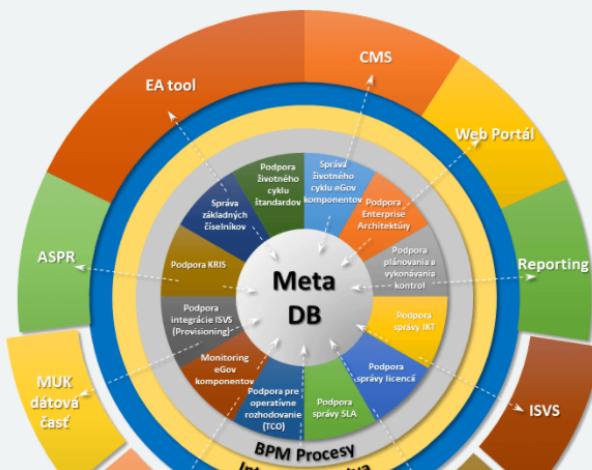
INFORMAČNO KOMUNIKAČNÉ  
TECHNOLOGIEŠTANDARDIZÁCIA A DÁTOVÉ  
OBJEKTY

LICENCIE

ZOSTAVY

INÉ ENTITY

POMOC

**3 377**Koncové služby štátnej správy  
(prevádzkované)**414**Koncové služby samosprávy  
(prevádzkované)**254**

Koncepcie rozvoja ISVS

**12 870**

Aplikačné služby

**3 467**

Informačné systémy verejnej správy

**56**

Základné číselníky

**Monitoring**

Sledovanie metrík projektov a služieb

**Životné situácie**

Pohľad občana na biznis procesy

**URI**

Zoznam referencovateľných identifikátorov

**Projekty**

Vráthane štúdií uskutočniteľnosti a koncepcí rozvoja

**Enterprise architektúra**

Architektúry verejnej správy a ISVS

**Licencie**

Softvérové licencie štátu Oracle a Microsoft

**Štandardizačné dokumenty**

Štandardy pre informačné systémy verejnej správy

**Dátové prvky**

Katalóg dátových prvkov

**Referenčné registre**

Zoznam referenčných registrov

**Centrálny metainformačný systém verejnej správy**

- ▶ Systém pre podporu riadenia informatizácie verejnej správy,
- ▶ Systém pre tvorbu politík v oblasti informačnej spoločnosti,
- ▶ Nástroj na centrálnu správu v oblasti informačnej spoločnosti,
- ▶ Podpora cieľov efektívnej verejnej správy, ktorími sú vytvorenie inkluzívnej informačnej spoločnosti ako prostriedku pre rozvoj vysoko výkonnej vedomostnej ekonomiky,
- ▶ Zjednodušený a sprehľadnený proces integrácie elektronických služieb,
- ▶ Zjednodušený a sprehľadnený proces komunikácie medzi orgánmi VS.

Centrálny metainformačný systém verejnej správy je najmä evidenčným portálom, ktorý obsahuje údaje a správu životného cyklu údajov o službách, informačných systémoch, číselníkoch, referenčných registroch a referencovateľných identifikátoroch, licenciach ako aj ďalších komponentoch eGovernmentu na Slovensku. Účelom systému je správnosť, kompletnosť a dostupnosť aktuálnych informácií.

[Viac informácií](#)

Join at  
**slido.com**  
**#VAVA2**



# SLIDO – VAVA2

1. Aké typy enterprise IT architektúr poznáte?
2. Vieš čo je to ArchiMate a TOGAF?
3. Vieš používať Jira Software (Scrum/Kanban)?

<https://app.sli.do/event/xy2ZUVZVaH9bTmw1uhUBcR>

# ArchiMate®, an Open Group Standard

- Otvorený a nezávislý modelovací jazyk pre podnikovú architektúru
- Označenie pre popis, analýzu a vizualizáciu vzťahy medzi obchodnými doménami
- Vychádzal tiež zo štandardov IEEE 1471 a UML
  - Plus princípy servisnej orientácie



[www.opengroup.org/ArchiMate](http://www.opengroup.org/ArchiMate)

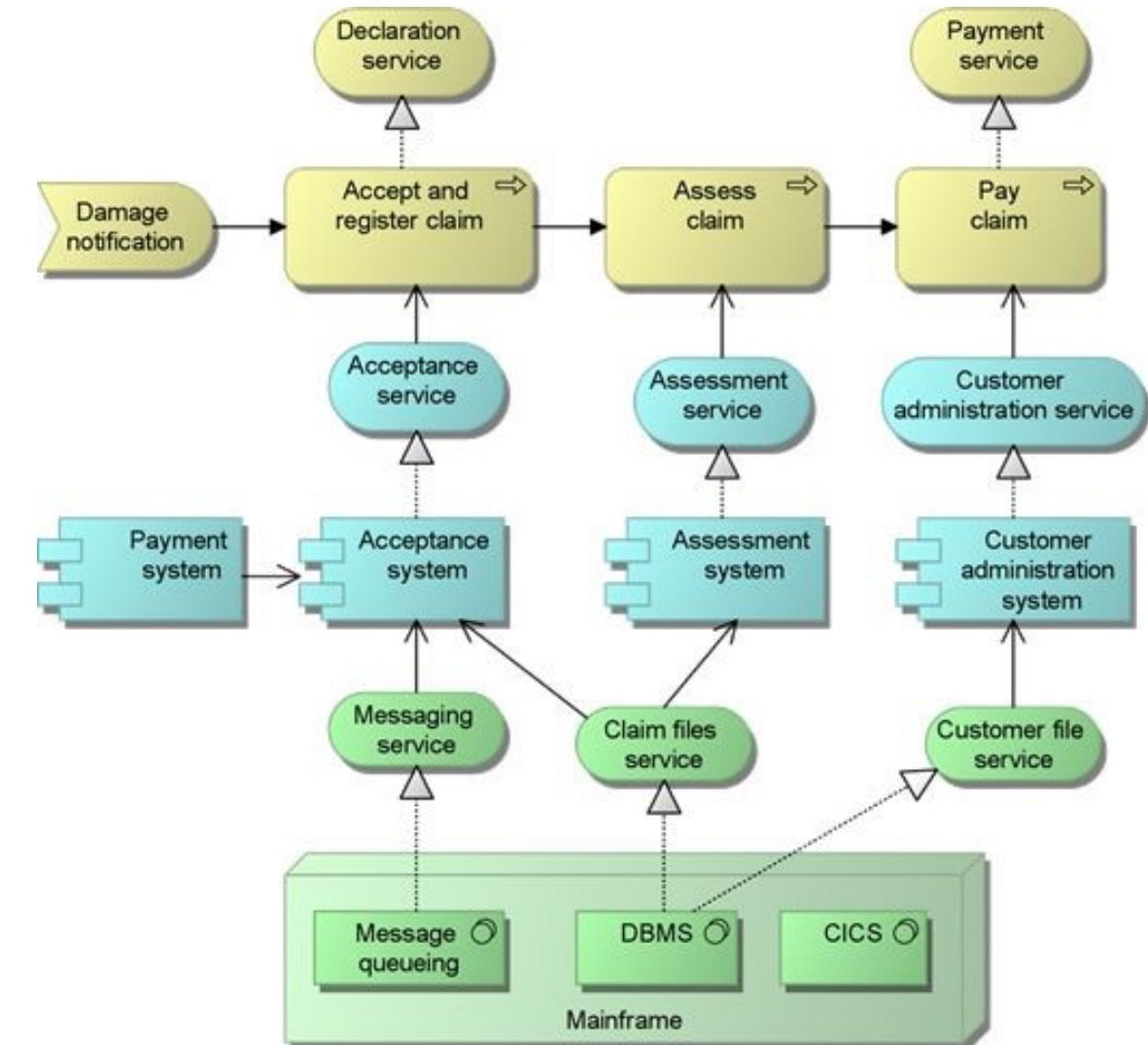
# Open Group != OMG (Object Management Group)

- The Open Group je nezávislá súkromná spoločnosť, ktorá **vlastní ochranné známky** napríklad na **TOGAF** a **ArchiMate**
- Object Management Group je otvorené združenie s jasnými pravidla a zaistuje syntaxe ako napríklad:
  - UML
  - BPMN
  - SysML
  - CORBA



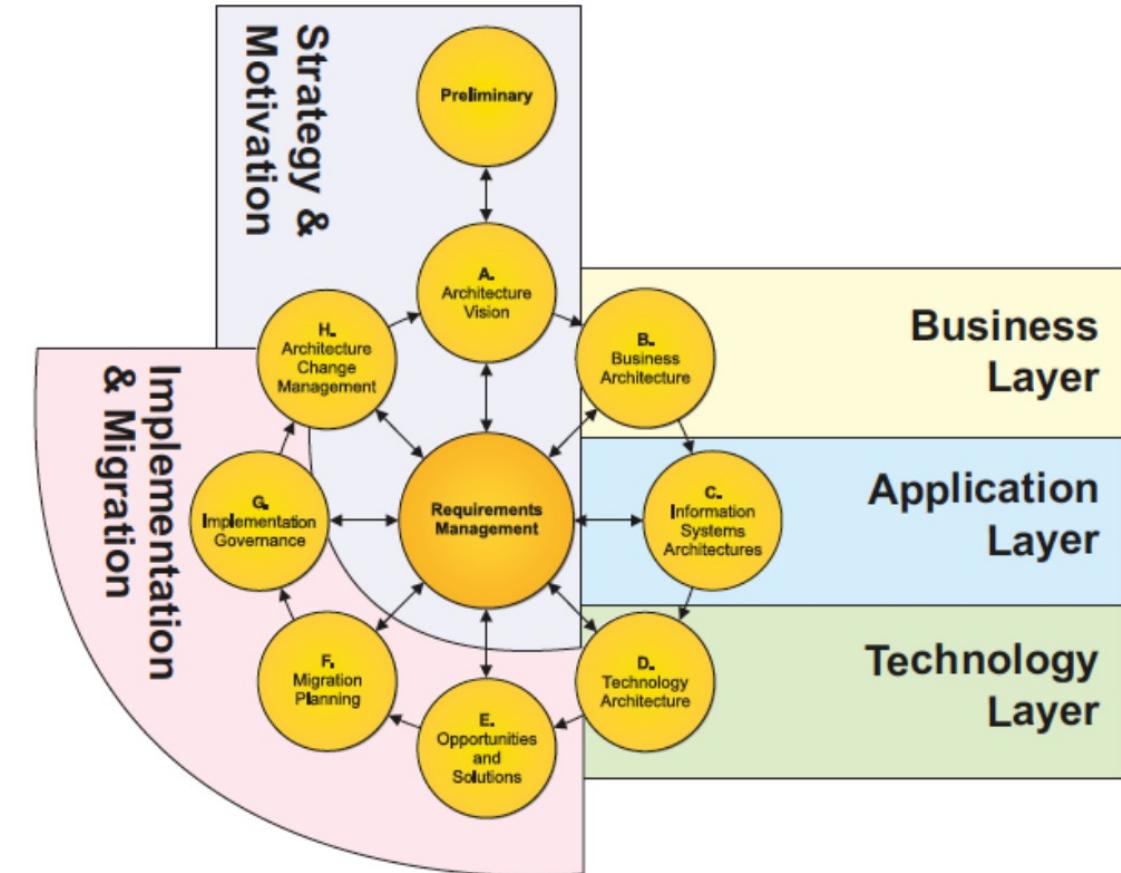
# Čo je ArchiMate®?

- Modelovací (vizuálny) jazyk so množinou predvolených ikon na opis, analýzu a komunikáciu mnohých záujmov (problémov) podniku
- Poskytuje množinu entít a vztahov s ich zodpovedajúcou ikonografiou pre reprezentáciu opisov architektúry
- Štandard Open Group pre architektúru



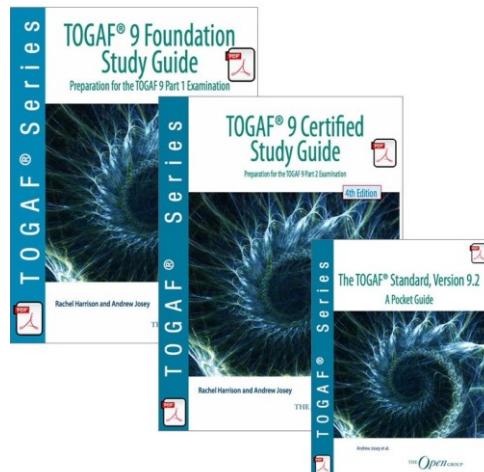
# ArchiMate®, an Open Group Standard

- Pomerne jednoduchý jazyk (napr. voči UML)
- Umožňuje modelovanie všetkých architektúr TOGAFu:
  - **Biznis architektúry**
  - **Architektúry informačných systémov**
  - **Technologickej architektúry**
- Okrem jazyka aj odporúčanie ako modelovať:
  - **18 architektonických pohľadov**



# TOGAF a podniková architektúra

- **TOGAF** = The Open Group Architecture Framework
- **Open Group** (platinoví členovia:  
Capgemini, IBM, Kingdee, HP,  
Oracle)
- Štandard od r. 1995



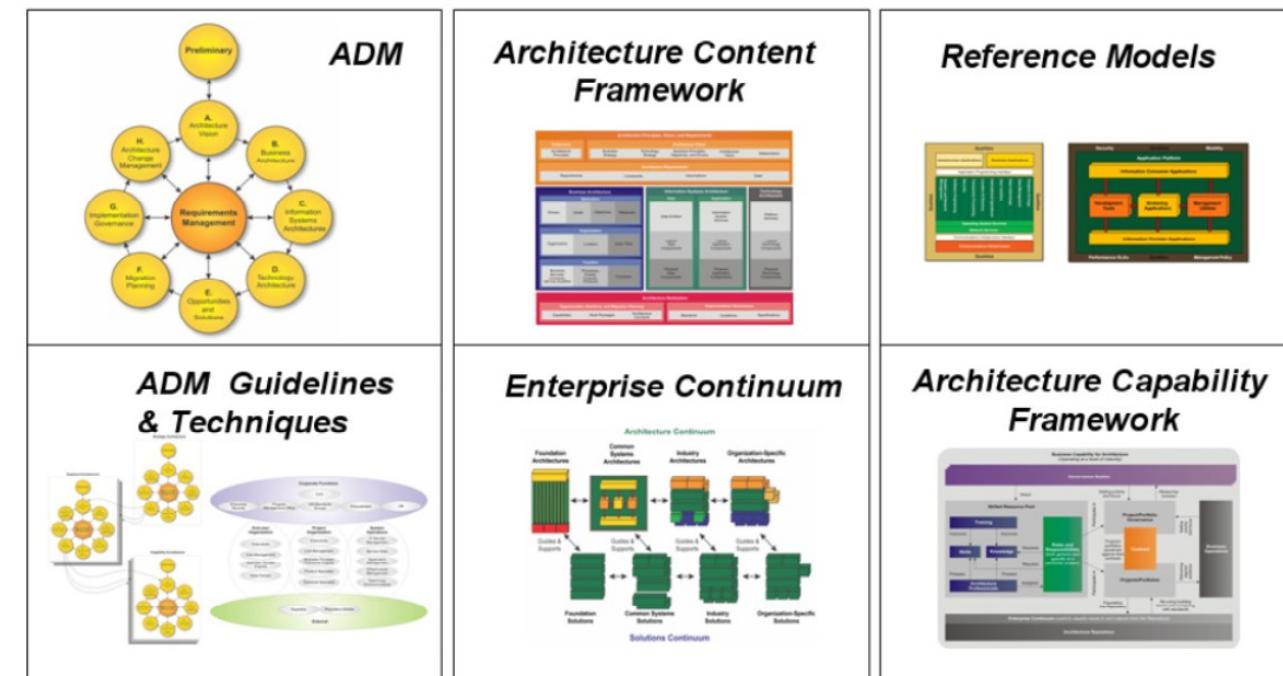
Biznis  
architektúra

Architektúra  
informačných  
systémov

Technologická  
architektúra

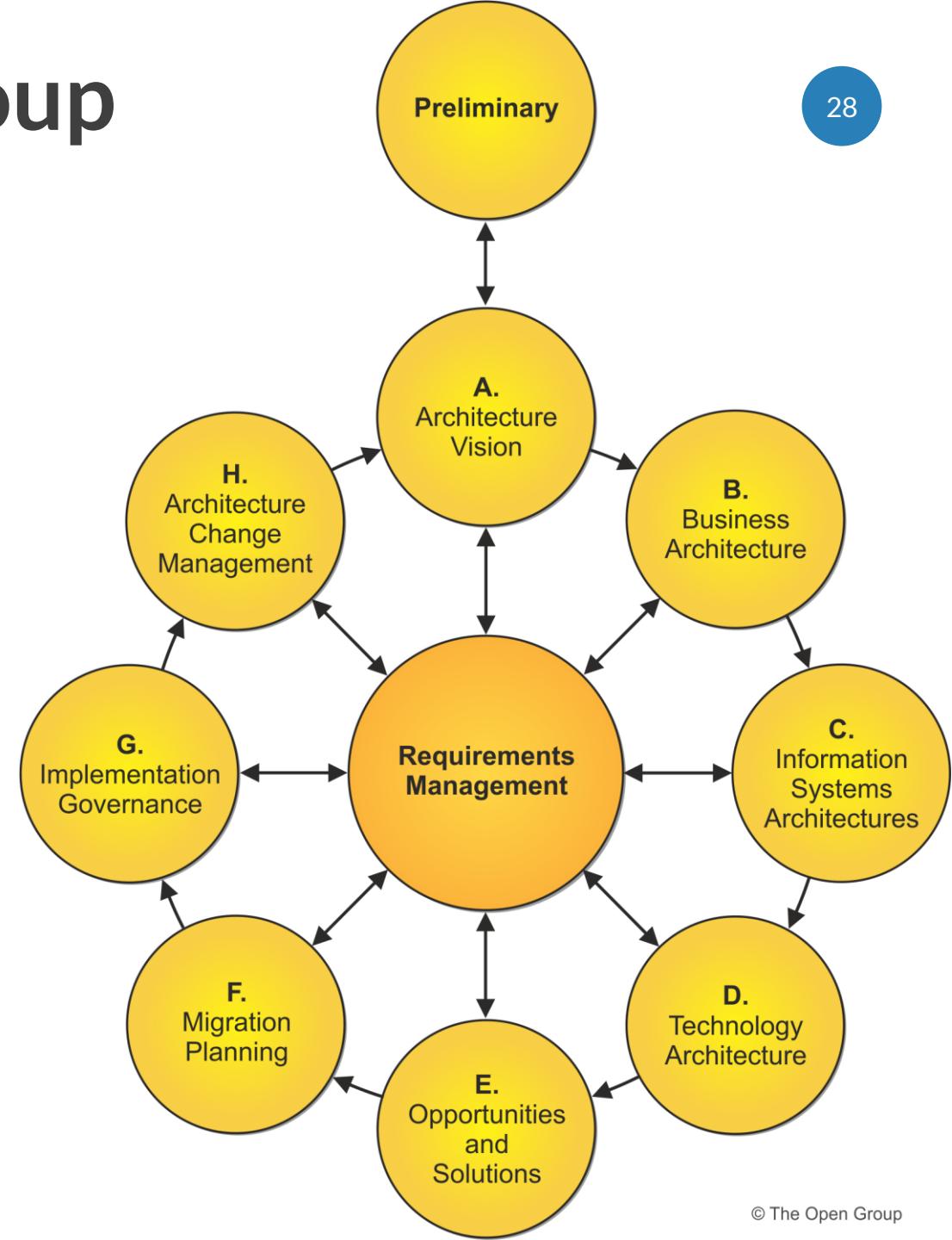
# Čo je TOGAF štandard?

- Je **architektúrny rámec (framework)**
- Poskytuje **metódy** a **nástroje** na pomoc pri **prijímaní, výrobe, používaní a údržbe podnikových architektúr (enterprise)**
- Založený na **iteratívnom procesnom modeli** podporovaný **osvedčenými postupmi** (best practices) a **opakovane použiteľnou sadou** (reusable) existujúcich architektonických prostriedkov (architectural assets)



# Čo je TOGAF (The Open Group Architecture Framework)

- Je založený na **iteratívnom prístupe k rozvoju podnikovej architektúry** (a jej modelu)
- Je **aplikovateľný** na **rozsiahle projekty** ale aj na **malé, jednoduché zmeny**
- Vyžaduje customizáciu
- **Pozostáva z 8 základných fáz + 2 doplnkové**
- Definuje **postupy, úložisko modelov, výstupy jednotlivých fáz, základné princípy riadenia zmien**



# Čo je architektúra v kontexte TOGAF?

## ISO/IEC/IEEE 42010:20118

- The fundamental concepts or properties of a system in its environment embodied in its elements, relationships, and in the principles of its design and evolution.

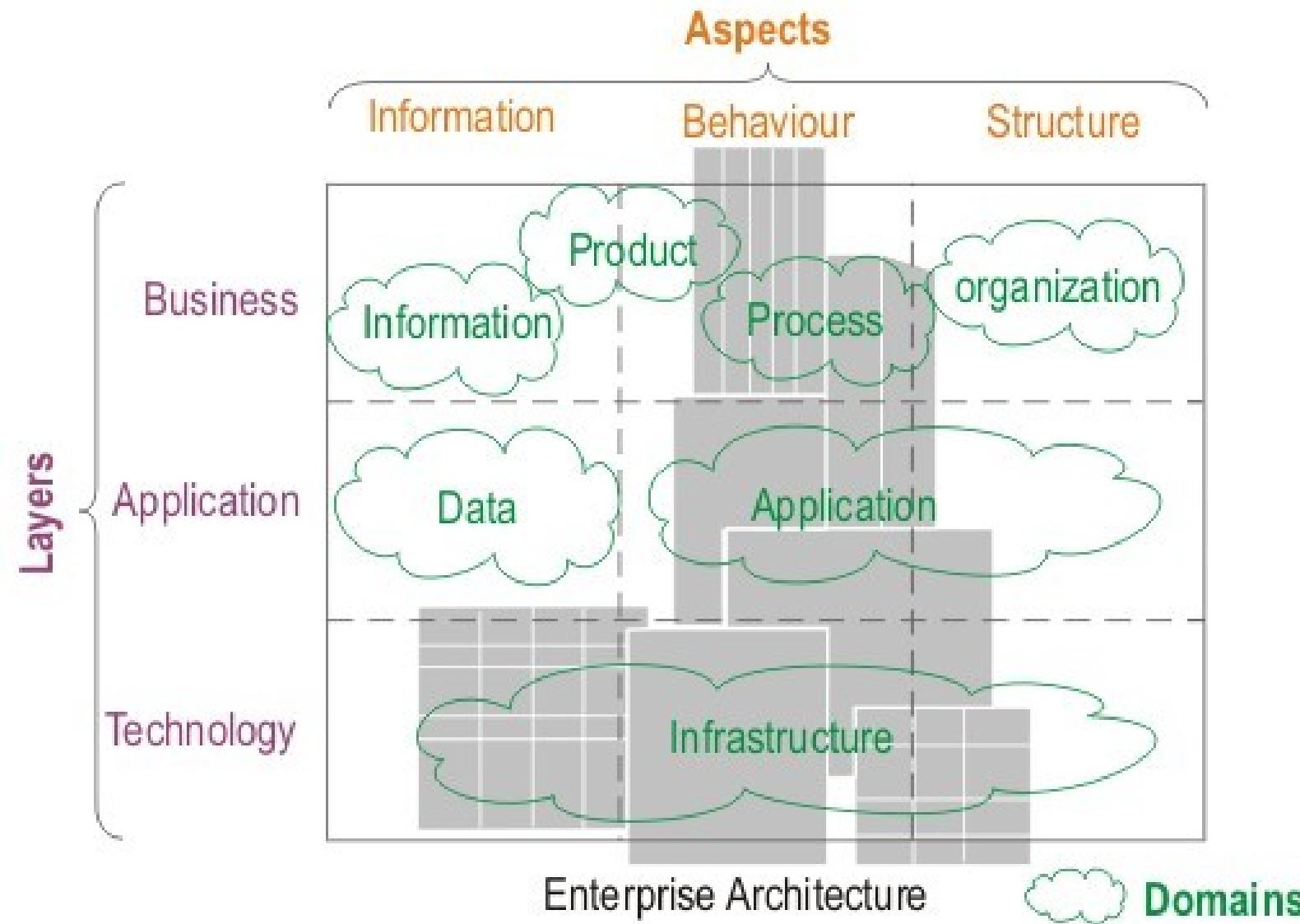
## The TOGAF standard

- The structure of components, their inter-relationships, and the principles and guidelines governing their design and evolution over time.

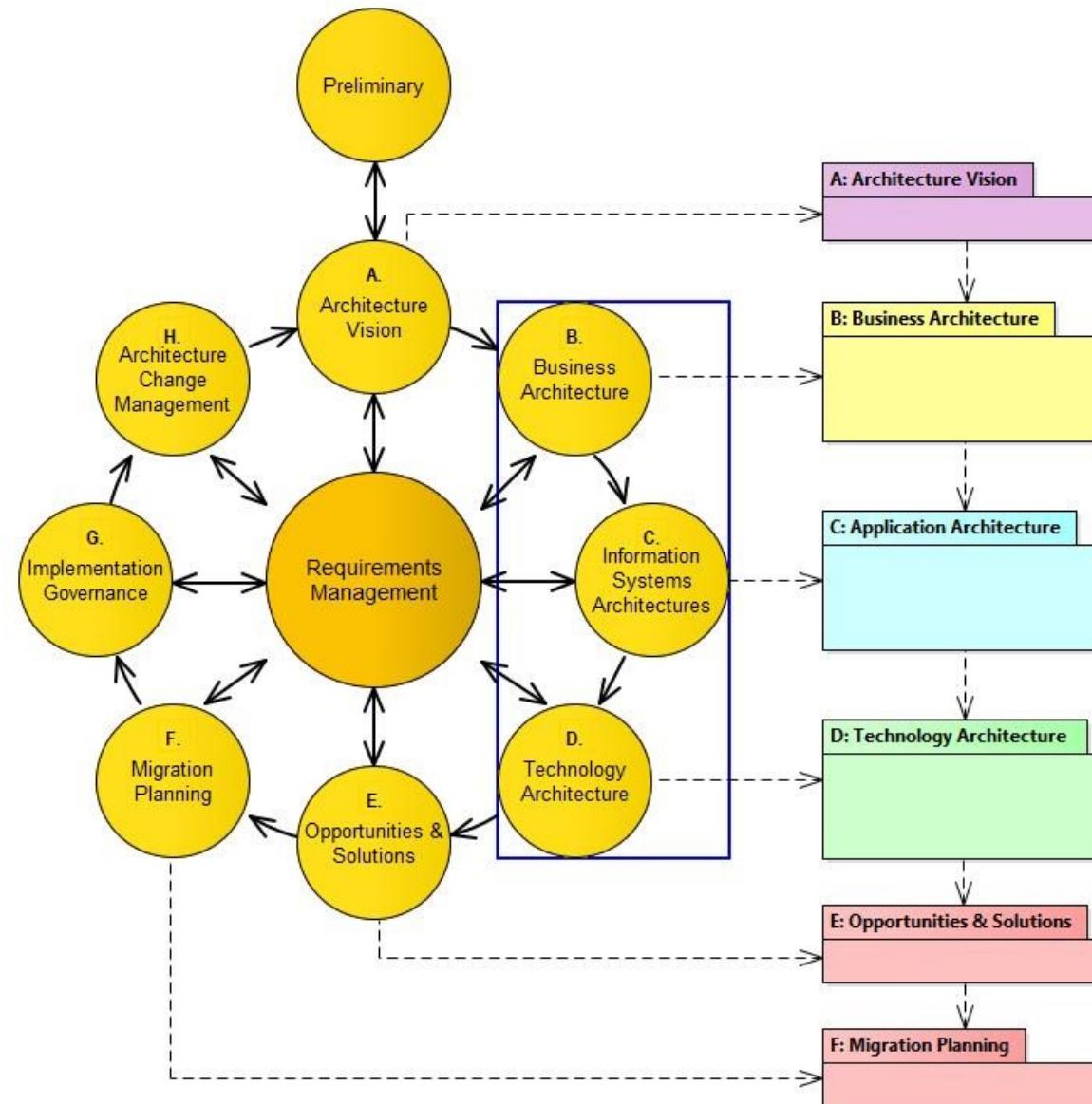
# čo je to architektúrny rámec (Architecture Framework)?

- Je **základná štruktúra** alebo **sada štruktúr**, ktoré možno **použiť** na **vývoj širokej škály rôznych architektúr**.
- Mal by **opísať** metódu pre návrh **cieľového stavu podniku** z **hľadiska súboru stavebných blokov** a pre ukážku toho, ako tieto **stavebné prvky do seba zapadajú**.
- Mal by **obsahovať** súbor **nástrojov** a poskytnúť **spoločnú slovnú zásobu**.
- Mal by tiež obsahovať **zoznam odporúčaných štandardov** a **vyhovujúcich produktov**, ktoré možno **použiť** na **implementáciu** **stavebných prvkov**.

# Pohl'ad TOGAF a ArchiMate



# Vztah TOGAF a ArchiMate®



# Prečo používať ArchiMate?

Spoločný jazyk  
pre architektov

1 obrázok za 1000  
slov

Lepšia  
komunikácia vo  
vnútri spoločnosti

Odstránenie  
nejednoznačností

Umožňuje  
analýzy dopadu

Kratšie  
zaškolenie

Priama väzba na  
TOGAF



## Welcome to the ArchiMate® 3.0.1 Specification, an *Open Group Standard*

### Contents

#### 1 Introduction

- 1.1 Objective
- 1.2 Overview
- 1.3 Conformance
- 1.4 Normative References
- 1.5 Terminology
- 1.6 Future Directions

#### 2 Definitions

- 2.1 ArchiMate Core Framework
- 2.2 ArchiMate Core Language
- 2.3 Aspect
- 2.4 Attribute
- 2.5 Concept
- 2.6 Conformance
- 2.7 Conforming Implementation
- 2.8 Core Element
- 2.9 Composite Element
- 2.10 Element
- 2.11 Layer
- 2.12 Model
- 2.13 Relationship

#### 3 Language Structure

- 3.1 Language Design Considerations
- 3.2 Top-Level Language Structure
- 3.3 Layering of the ArchiMate Language
- 3.4 The ArchiMate Core Framework
- 3.5 Full Framework
- 3.6 Abstraction in the ArchiMate Language
- 3.7 Concepts and their Notation
- 3.8 Use of Nesting
- 3.9 Use of Colors and Notational Cues

#### 4 Generic Metamodel

- 4.1 Behavior and Structure Elements
  - 4.1.1 Active Structure Elements
  - 4.1.2 Behavior Elements
  - 4.1.3 Passive Structure Elements
- 4.2 Specializations of Structure and Behavior Elements

RTFM

# Kto používa ArchiMate®?



HSBC

The HSBC logo consists of the word "HSBC" in a serif font next to a red diamond shape containing a white "H".

amazon

The Amazon logo features the word "amazon" in a black sans-serif font with a yellow arrow underneath.

IBM

The IBM logo consists of the word "IBM" in a bold, blue, sans-serif font.

ORACLE

The Oracle logo is the word "ORACLE" in red capital letters.

Walmart

The Walmart logo features the word "Walmart" in blue and yellow, accompanied by its signature yellow asterisk symbol.

Coca-Cola

The Coca-Cola logo is the word "Coca-Cola" in its iconic red script font.

GM

The GM logo consists of the letters "GM" in white on a dark blue square background.

QUALCOMM

The Qualcomm logo consists of the word "QUALCOMM" in blue capital letters.

Whirlpool

The Whirlpool logo features the word "Whirlpool" in a yellow script font with a yellow swoosh, and "CORPORATION" in smaller text below.

BOEING

The Boeing logo is a stylized "B" in blue and white.

Ford

The Ford logo is the word "Ford" in a blue, italicized, cursive font inside an oval.

Johnson & Johnson

The Johnson & Johnson logo is the company name in red script with a small ampersand.

CISCO

The Cisco logo consists of the word "CISCO" in blue capital letters with a series of vertical bars above it.

Všetci veľkí hráči

# Obmedzenia ArchiMate

## Zakreslenie procesov

- Ponúka len základné prvky pre zakreslenie biznis procesov
- Pokial' je potrebné tieto procesy zakresliť do väčšieho detailu je vhodné použiť BPMN alebo diagram aktivít v UML

## Popis aplikačných komponentov

- Ak je treba popísať vnútornú štruktúru aplikácií či informačných systémov, je vhodné použiť notáciu UML, ktorá k tomu poskytuje potrebné prostriedky

## Biznis objekty

- ArchiMate nedovoľuje pridávať atribúty (podobne ako v diagramoch tried)

# Pohľady v ArchiMate®

1. Úvodný pohľad
2. Organizačný pohľad
3. Pohľad kooperácie aktérov
4. Pohľad biznis funkcií
5. Pohľad biznis procesov
6. Pohľad kooperácie biznis procesov
7. Produktový pohľad
8. Pohľad správania aplikácie
9. Pohľad kooperácie aplikácií
10. Pohľad štruktúry aplikácie

11. Pohľad použitia aplikácií
12. Infraštrukturny pohľad
13. Pohľad použitia infraštruktúry
14. Pohľad implementácie a rozmiestnenia
15. Pohľad informačnej štruktúry
16. Pohľad realizácie služieb
17. Vrstvový pohľad
18. Mapový pohľad

## Motivation Layer

Mission-  
Vision-Values  
View

Motivation  
View

Stakeholder  
View

Stakeholder  
Analysis View

Goals View

Principles  
View

Requirements  
View

Risk and  
Security View

## Strategy Layer

Value Map -  
Strategy Map  
View

Goal to  
Strategy View

Strategy View

Strategy To  
Capability  
View

Business  
Model View

Capability  
Map View

Capability  
Planning View

## Business Architecture Layer

Business  
Services View

Business  
Actors View

Business Roles  
View

Business  
Concepts  
View

Business  
Processes  
View

Business  
Functions  
View

Business  
Process Co-  
operation

## Application Architecture Layer

Application  
Services View

Applications  
Map View

Application  
Functions  
View

Information  
View

Application  
Interfaces  
View

Application  
Integration  
View

Application  
Co-operation  
View

Layered View

## Technology Architecture Layer

Technology  
Services View

Platform View

Technology  
Map View

Infrastructure  
View

## Implementation and Migration Layer

Kanban Board  
(portfolio)

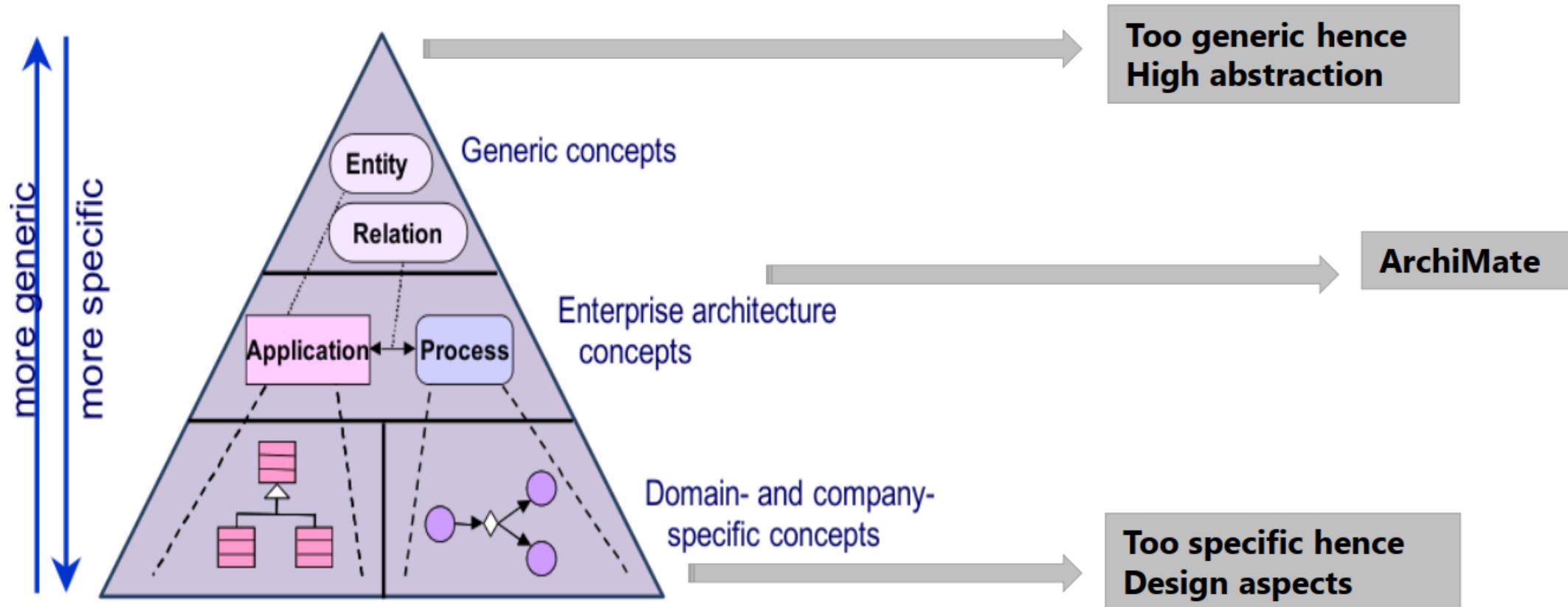
Programs &  
projects View

Roadmap  
View

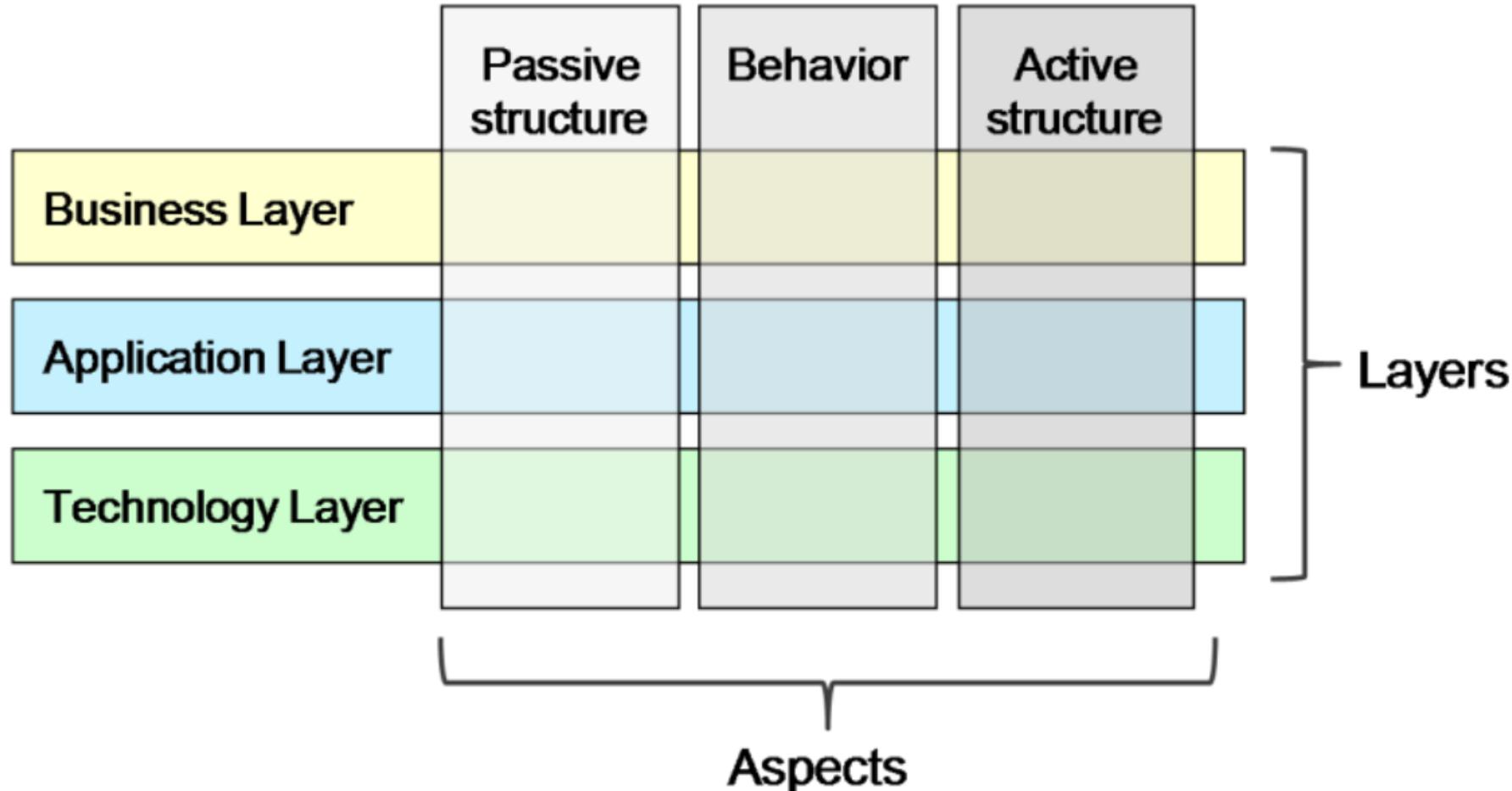
Capability  
Realization  
View

Service  
Realization  
View

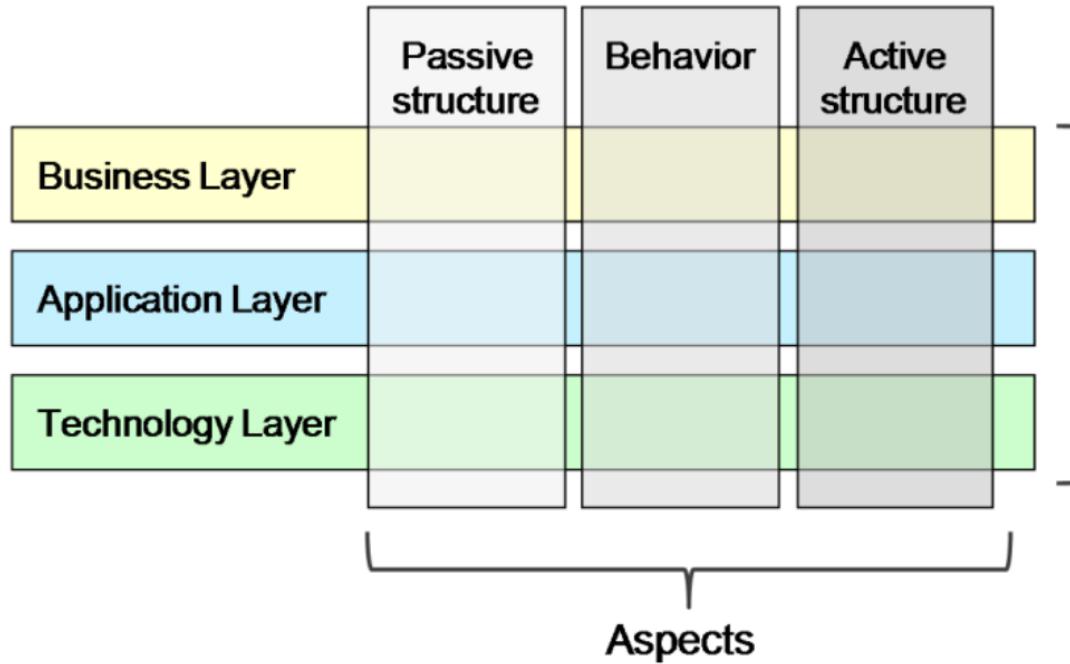
# Popis architektúry na rôznych úrovniach



# Core Framework – Vrstvy (Layers) a aspekty

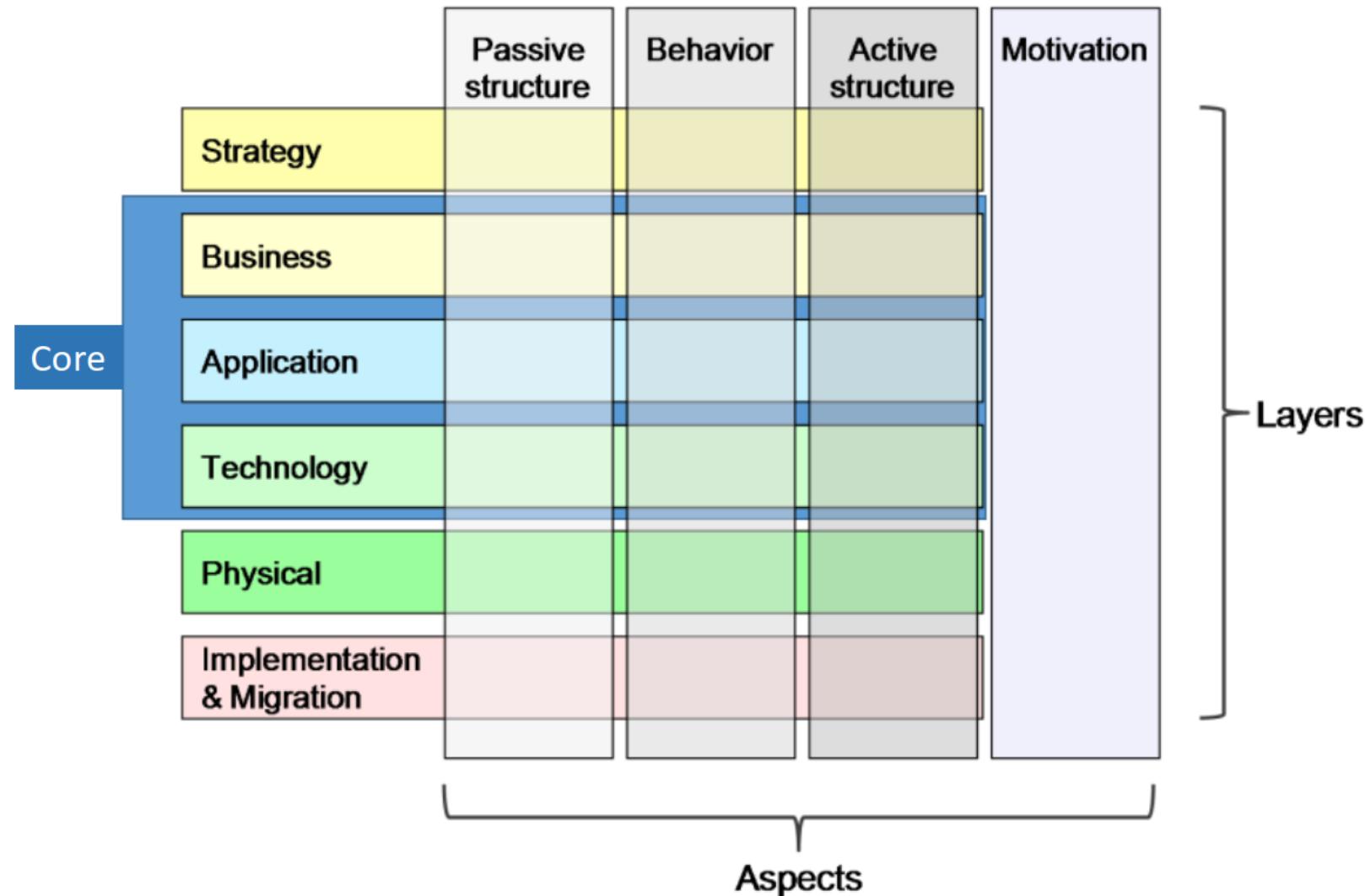


# Core Framework – Vrstvy



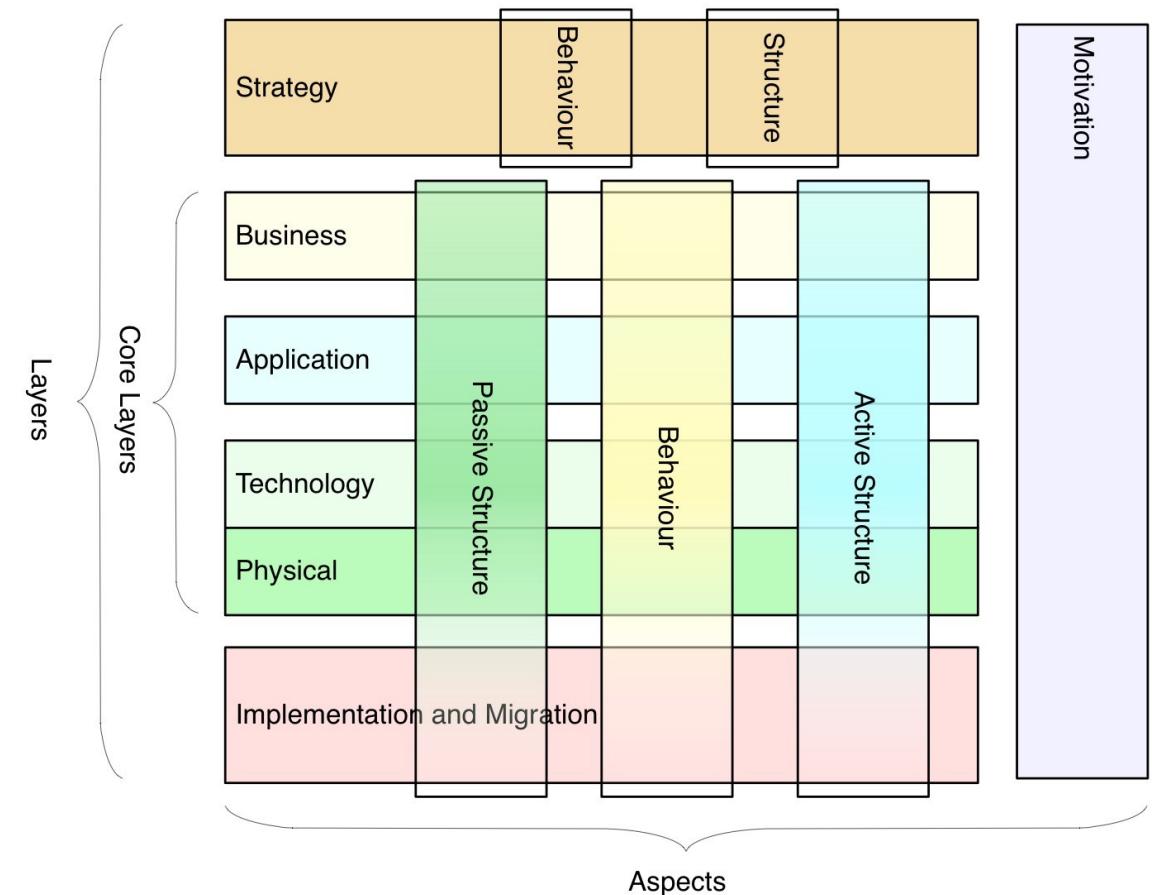
1. **Business Layer** depicts business services offered to customers. These services are realized in the organization by business processes and are performed by business actors.
2. **Application Layer** depicts application services that support the business. These services are realized by application components.
3. **Technology Layer** depicts technology services serving the applications. These services (like processing, storage, and communication services) are realized by computer and communication hardware and system. Physical elements are added for modeling physical equipment, materials, and distribution networks to this layer.

# Úplný rámec - vrstvy a aspekty



# Vrstvy (Layers) - ArchiMate Extensions

- 4. Strategy layer
- 5. Physical layer
- 6. Implementation & Migration layer
- Motivation extension



# Aspekty (Aspects)

ArchiMate striktne oddeluje 3 základné aspeky:

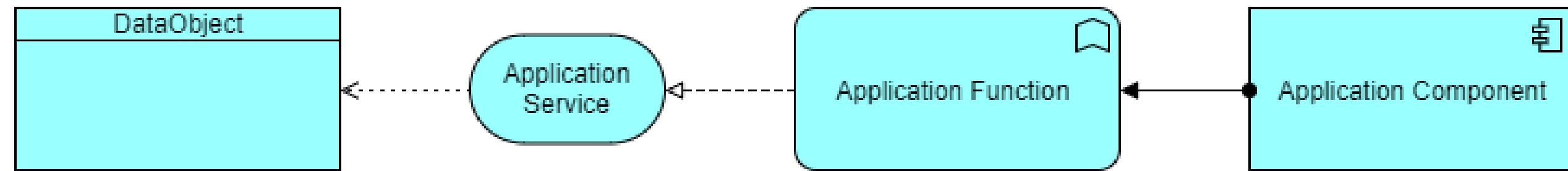
1. **Active Structure Aspect** – reprezentujú **štrukturálne elementy** (napr. aktérov, role, komponenty, hardvér, ktoré sú schopné určitého chovania. Tiež sú tieto elementy označované ako aktívne).
2. **Behavior Aspect** – Reprezentuje **chovanie** (napr. procesy, funkcie, služby) **vykonávané aktívnymi** (štrukturálnymi) **elementami**. Chovanie je priradené (assigned) aktívному elementu.
3. **Passive Structure Aspect** (pasívne elementy) – **reprezentujú objekty** (napr. biznis objekty, dátové objekty ale aj fyzické objekty), na ktorých môže byť aplikované chovanie aktívneho elementu (či sú takýmto chovaním ovplyvnený)

# Aspekty (Aspects)

Pasívny element  
Passive Structure  
Aspect

Chovanie aktívneho elementu  
Behavior Aspect

Aktívny element  
Active Structure Aspect



# Pochopenie typov aspektov elementu

- Aká je aktívna štruktúra, behaviorálna a pasívna štruktúra?
  - Kuchár varí jedlo
  - Mechanik zvára auto
- **Kuchár/Mechanik**
  - **Aktívny prvok** štruktúry schopný **vykonávať správanie, zobrazuje správanie – subject/podmet (podstatné meno)**
- **Varenie/zváranie**
  - **Behaviorálny** prvok je jednotka **aktivity vykonávaná aktívnym elementom** (štruktúrami) - typicky verb/**prísudok (sloveso)**
- **Potraviny/Auto**
  - **Prvok pasívnej** štruktúry, **na ktorom sa vykonáva správanie** – objekt/**predmet (podstatné meno)** (informácie, údaje alebo fyzické)

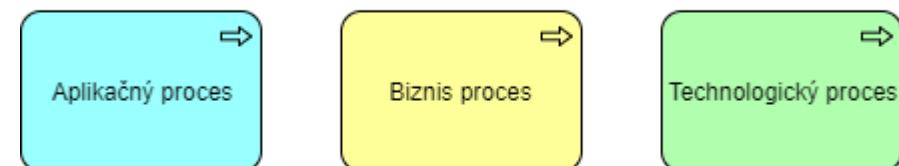
Inšpirácia prirodzeným jazykom

# Rozlúšenie elementov podľa rohov

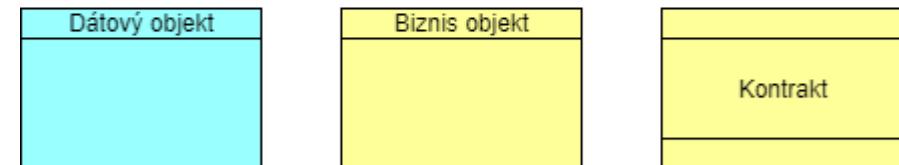
## 1. Ostré rohy – aktívne elementy



## 2. Zaoblené rohy – element chovania (behavior)

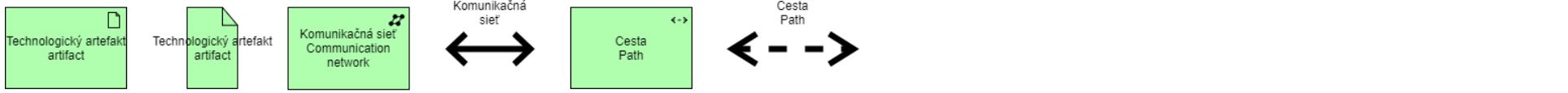
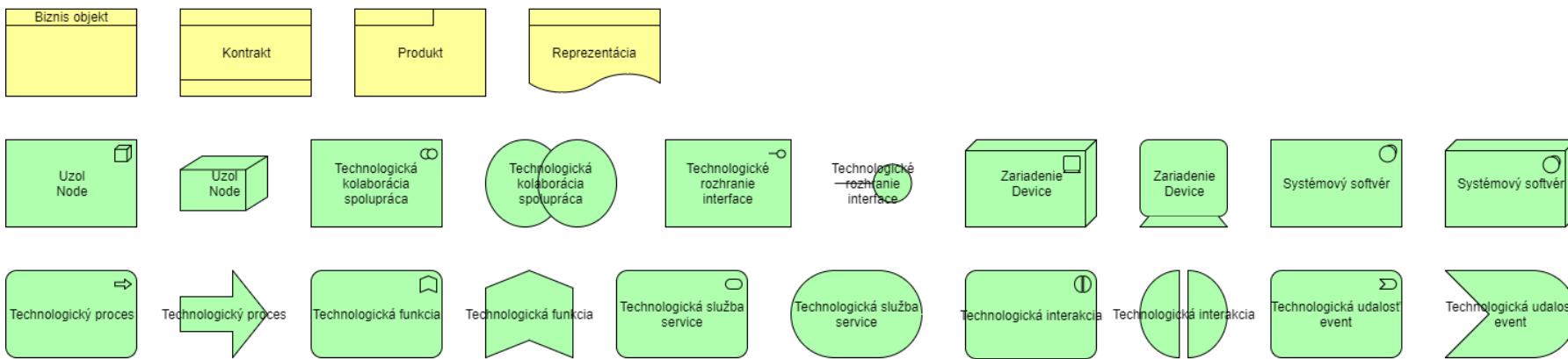
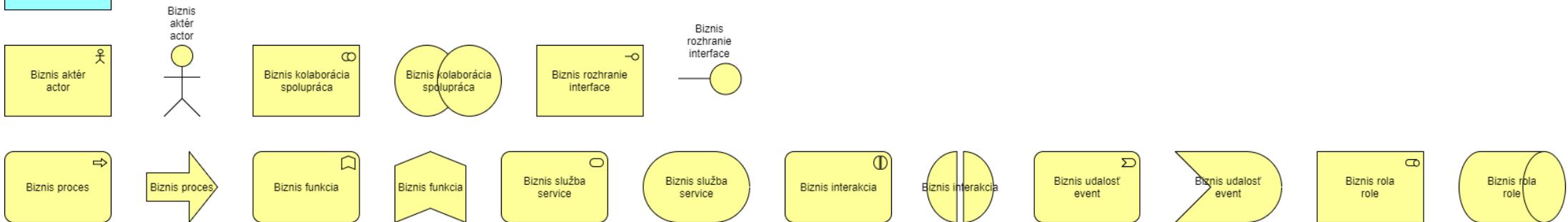
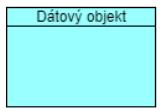
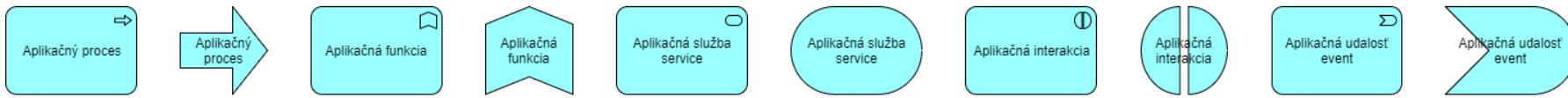
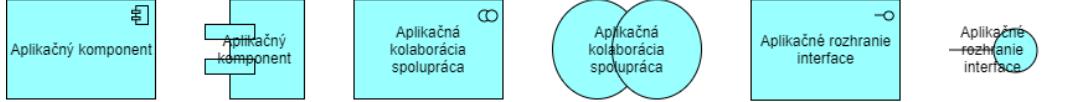


## 3. Ostrý roh s preškrtnutím – pasívne elementy



## 4. Skosené rohy – motivačný element

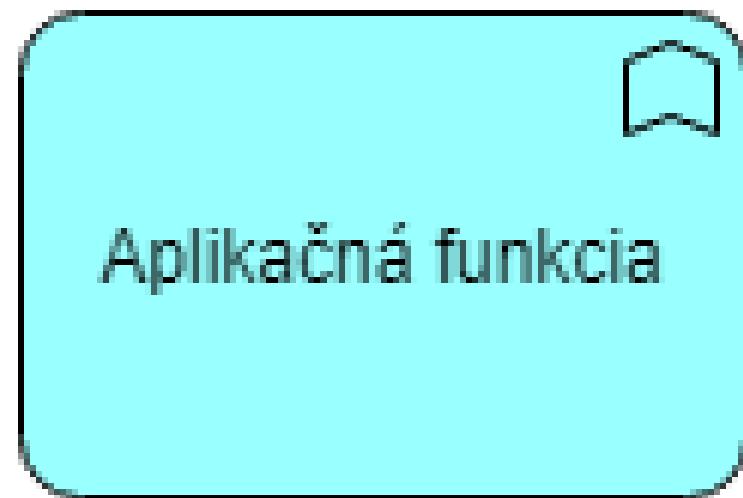




Zmysel/význam Meaning

# Spôsob zápisu elementov

Obdĺžnikový zápis



Zápis ikony



S	V	O	M	P	T
Subject/Podmet	Verb/Prísudok	Object/Predmet	Manner/Spôsob	Place/Miesto	Time/Čas
kto/čo?	čo robí?	koho/čo?	ako?	kde?	kedy?
Mike	rides	his bike	fast	in the park	every day.
Michal	jazdí	na motorke	rýchlo	v parku	každý deň.
Peter	writes	his homework		on Monday	morning.
Peter	si píše	domácu úlohu		v pondelok	ráno.
I	have	my dinner		at home	every evening.
Ja	večeriam			doma	každý večer.

# Pochopenie typov aspektov elementu

## 1. Zástupca zákazníka

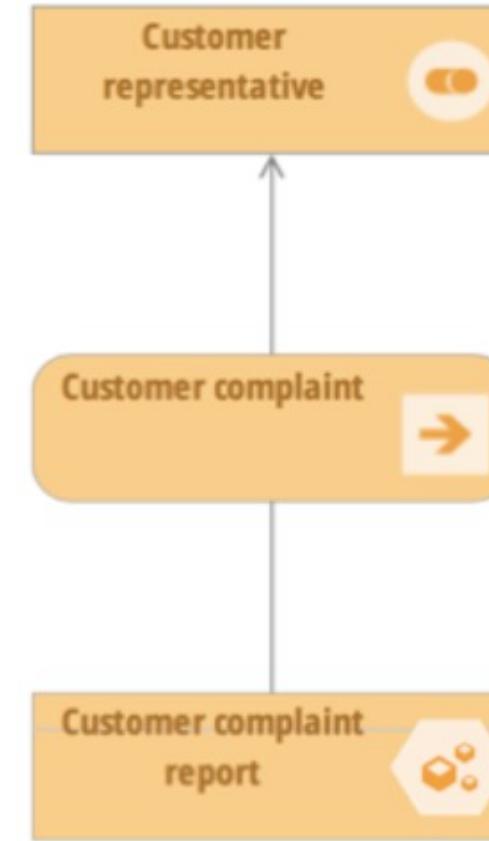
- Aktívny prvok štruktúry schopný vykonávať správanie, zobrazuje správanie - predmet

## 2. Vybavovanie sťažností zákazníkom

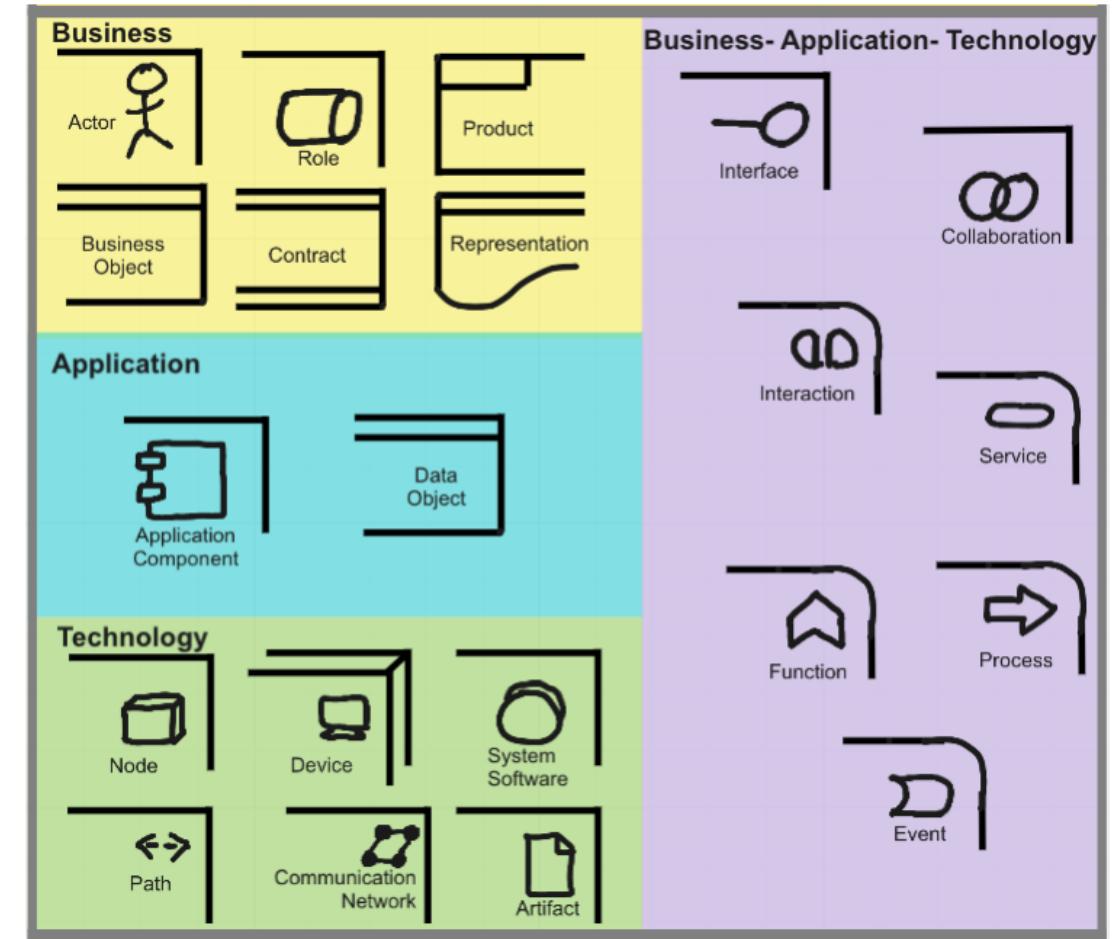
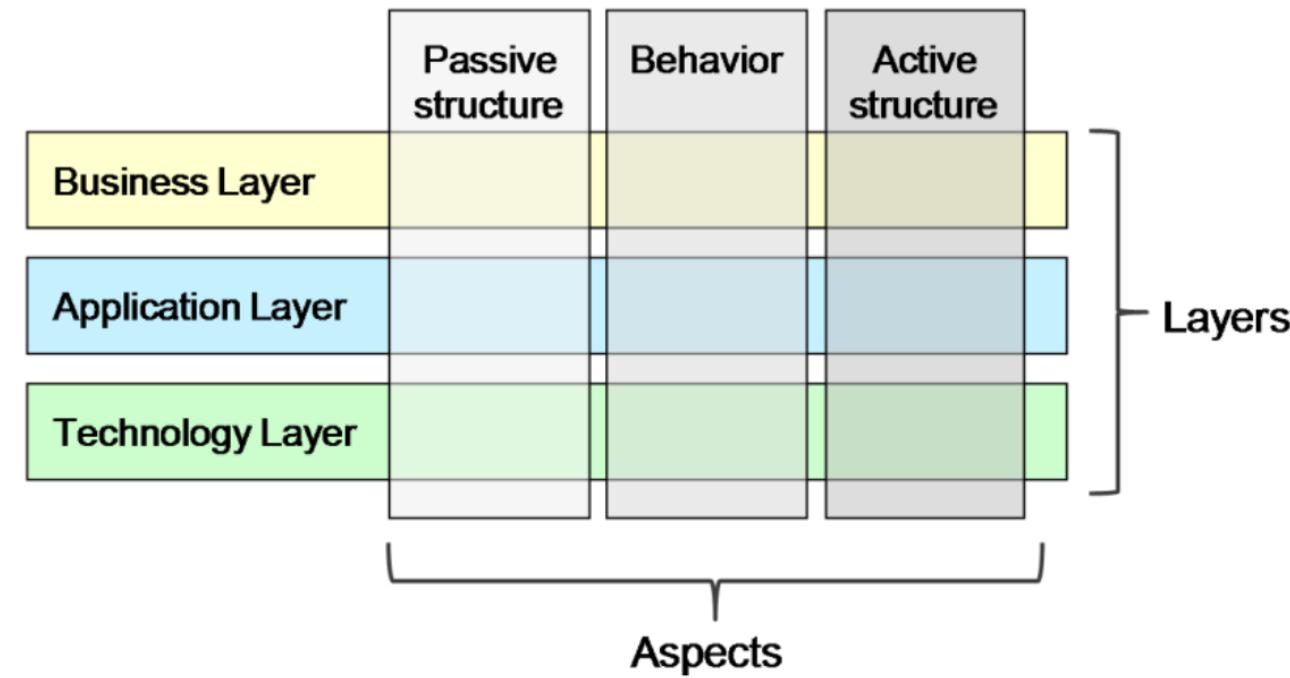
- Behaviorálny prvok je jednotka aktivity vykonávaná aktívou štruktúrou element (y) - (typicky sloveso)

## 3. Správa o zákazníkovi

- Prvok pasívnej štruktúry, na ktorom sa vykonáva správanie – objekt (informácie, údaje alebo fyzické)

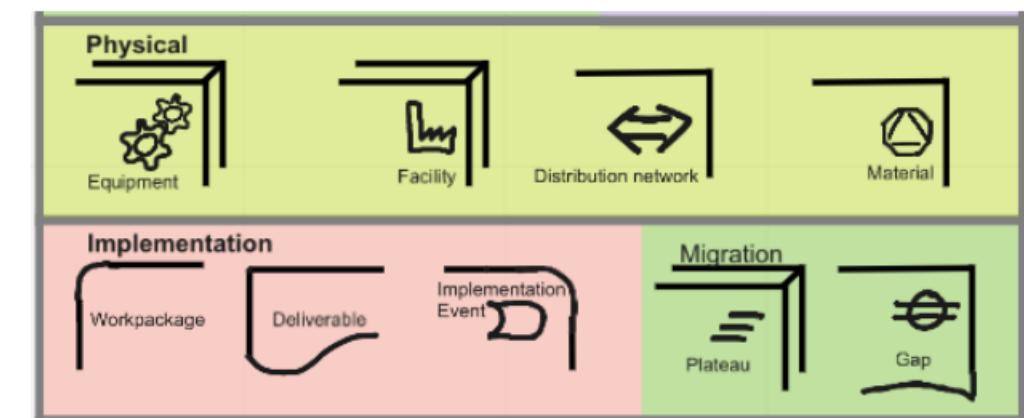
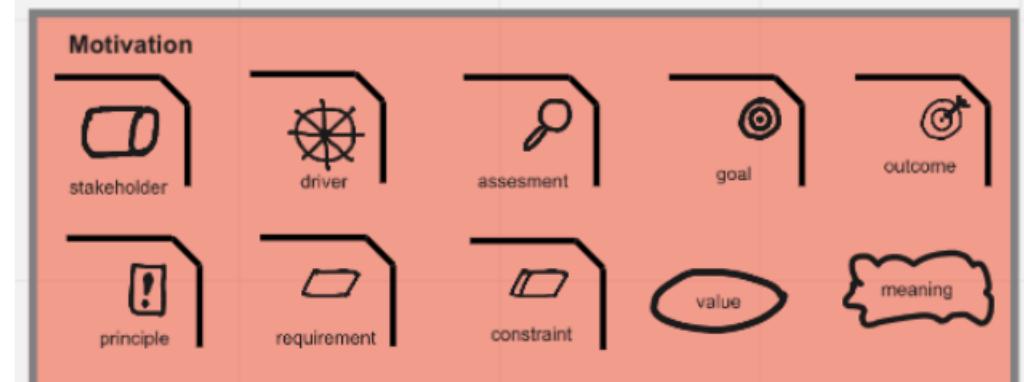
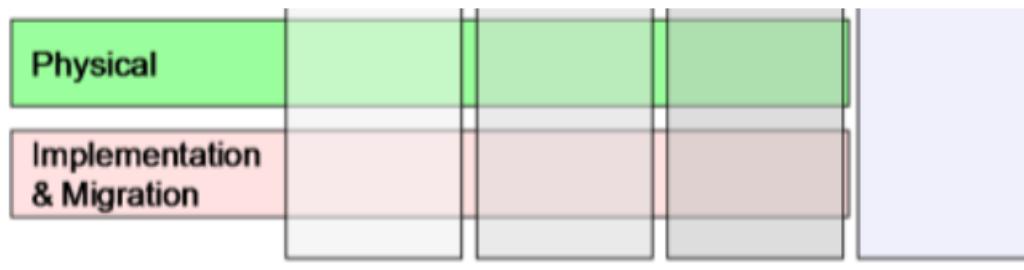


# Všetky prvky v základnom rámci (Core Framework)

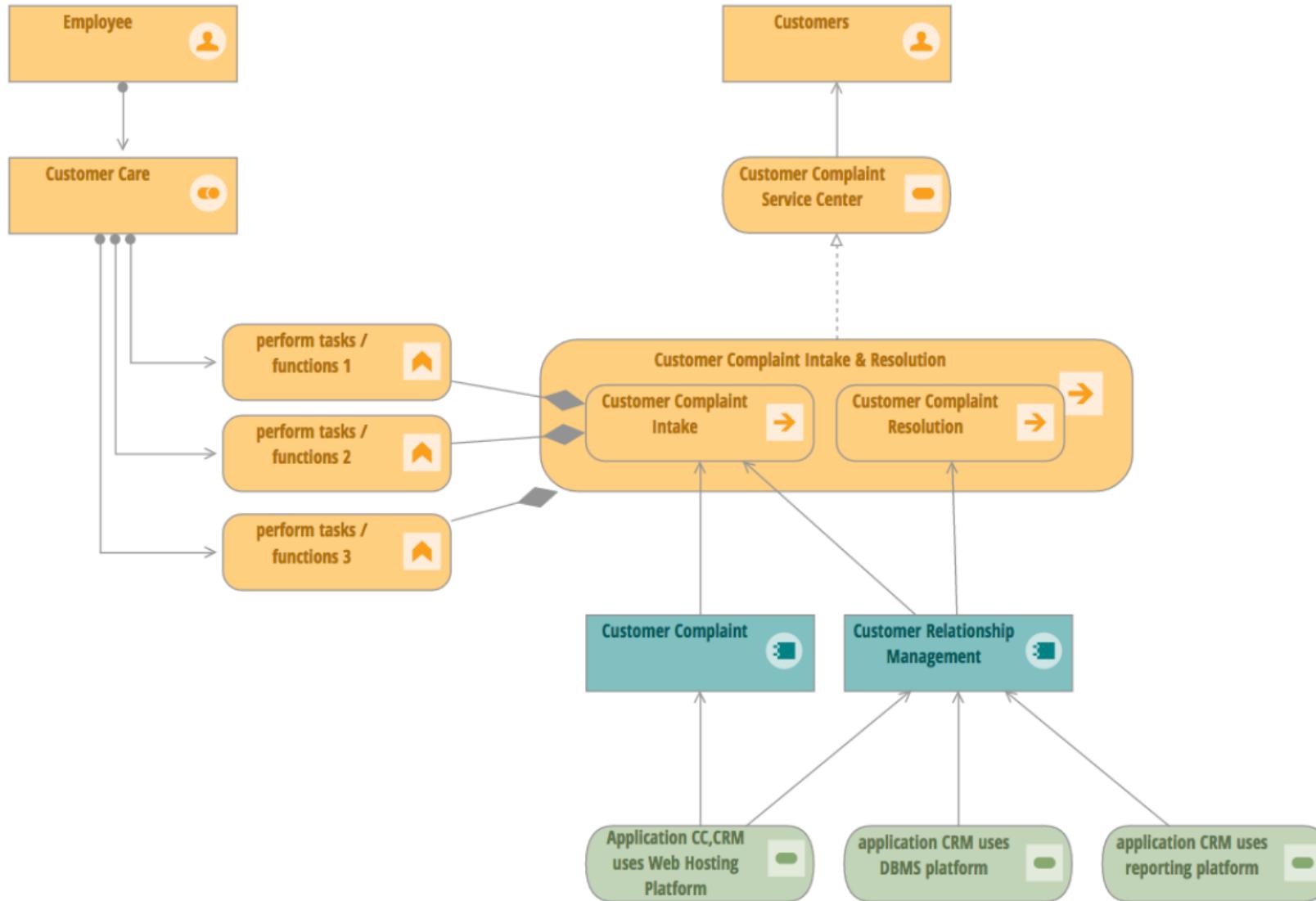




Core layers removed for simplicity



# Príklad ArchiMate modelu - Core Layers



## Toolkit Tuesday: A Best Practice for Developing a MOSA-based Reference Architecture



The Open Group <donotreply@opengroup.org>

i Ak sa vyskytnú problémy so zobrazením tejto správy, kliknutím sem ju zobrazte vo webovom prehliadači.



Odpovedať

Odpovedať všetkým

Preposlať

st 16. 2. 2022 21:26



Dear Miroslav,

In the next episode of the [Architect's Toolkit Tuesday Broadcast Series](#), we are talking about Modular Open Systems Approach (MOSA).

Join us on **Tuesday, February 22, 2022**, at 8:30 am PST, 4:30 pm GMT when Dr. Steven Davidson, Chief Scientist for Systems Architecture Electronic Systems Innovation Center, The MITRE Corporation will be talking about **A Best Practice for Developing a MOSA-based Reference Architecture**.

# Viacvrstvová architektúra

- V softvérovom inžinierstve aplikácie, ktorých **funkčnosť netvorí jeden celistvý program**, ale **viac vzájomne spolupracujúcich vrstiev**, ktoré bežia spravidla na rôznej výpočtovej infraštruktúre.
- **Príkladom** môže byť **eshop**, ktorého **klientska časť (Frontend)** beží v prehliadači používateľa, aplikačná logika na webovom či **aplikáčnom serveri (Backend)** a **dáta (napr. popis predávaných produktov a objednávky)** sú uložené v databázovom serveri .

# Encyclopedia of Database Systems

2009 Edition | Editors: LING LIU, M. TAMER ÖZSU

Contents

Search

Page 82 of 154

M

[Multiple Query Optimization](#)[Multiple Representation Modeling](#)[Multiplicity](#)[Multiprocessor Data Placement](#)[Multiprocessor Database Management](#)[Multiprocessor Query Processing](#)[Multi-Query Optimization](#)[Multi-Resolution](#)[Multi-Resolution Terrain Modeling](#)[Multi-scale](#)[Multiscale Views](#)[Multiscale Interface](#)[Multiset Semantics](#)

## Multi-Tier Architecture

[Authors](#)[Authors and affiliations](#)

Heiko Schultdt

Reference work entry

DOI: [https://doi.org/10.1007/978-0-387-39940-9\\_652](https://doi.org/10.1007/978-0-387-39940-9_652)

13

1.1k

Citations

Downloads

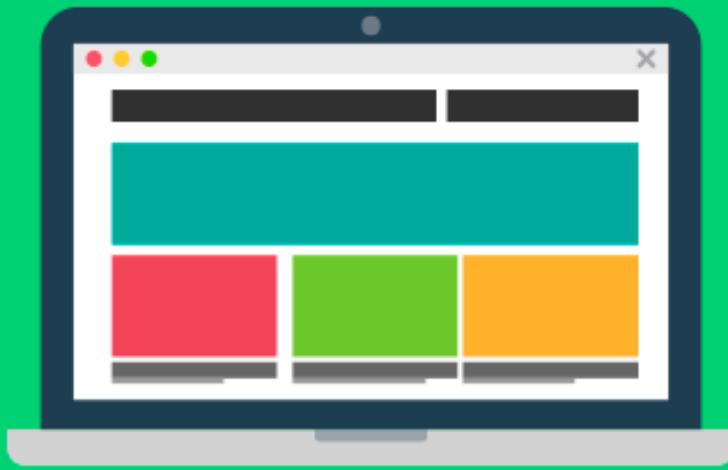
[How to cite](#)

## Synonyms

[n-tier architecture](#); [Multi-layered architecture](#)

## Definition

A *Multi-tier Architecture* is a software architecture in which different software components, organized in tiers (layers), provide dedicated functionality. The most common occurrence of a multi-tier architecture is a three-tier system consisting of a data management tier (mostly encompassing one or several database servers), an application tier (business logic) and a client tier (interface functionality). Novel deployments come with additional tiers. Web information systems, for instance, encompass a dedicated tier (web tier) between client and application layer.



**FRONTEND**



**BACKEND**

# Front-End



Bootstrap

HTML



CSS



vs

PHP



# Back-End

# Informácie o eurofondoch, grantoch a projektoch

ITMS2014+ ako nástroj pre žiadosti, implementáciu a monitorovanie fondov EÚ, slúži žiadateľom zapojeným do prípravy, administrácie, výberu, kontroly, analýzy, monitorovania a hodnotenia poskytovaných finančných prostriedkov z ESIF.



Video o ITMS2014+  
2 min



Ako môžem začať s  
eurofondami?



Vyhľadať  
vhodný grant



Prehľad  
projektov

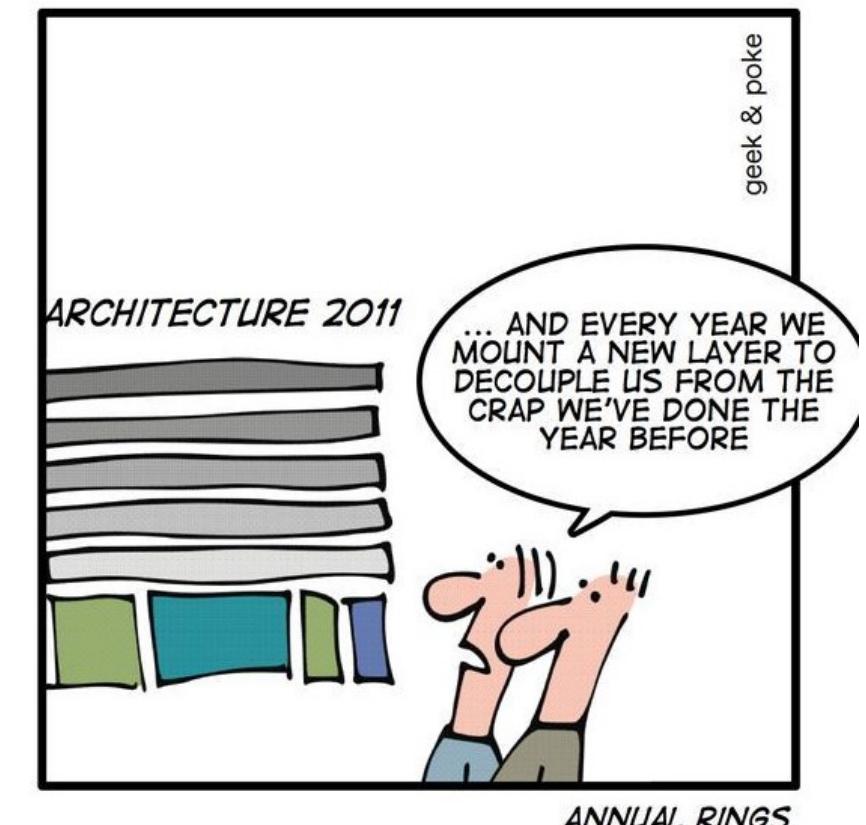


Používateľská  
príručka

# Viacvrstvová architektúra

- Susediace vrstvy spolupracujú cez definované **rozhrania** a môžu sa preto zamieňať bez toho, aby to malo vplyv na funkčnosť celej aplikácie
- Prenos údajov medzi vrstvami je **súčasťou architektúry**
- Býva **založený** na **štandardných protokoloch a technológiách**, ako sú CORBA , Java RMI , .NET Remoting , sokety , UDP alebo webové služby

*BEST PRACTICES IN  
APPLICATION ARCHITECTURE  
TODAY: USE LAYERS TO DECOUPLE*



# Trojvrstvová architektúra

- **Prezentačná vrstva**

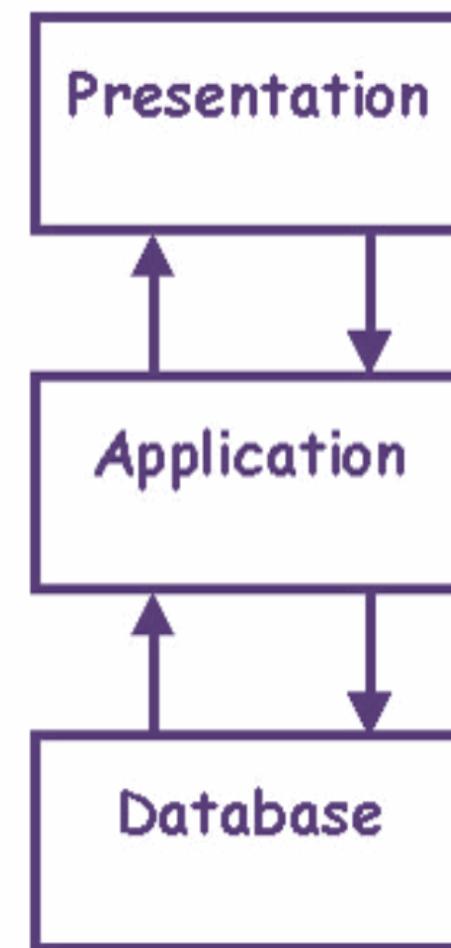
- Zobrazuje informácie pre používateľov, väčšinou formou grafického používateľského rozhrania
- Môže kontrolovať zadávané vstupy, neobsahuje však spracovanie dát

- **Aplikačná vrstva (tiež Business Logic)**

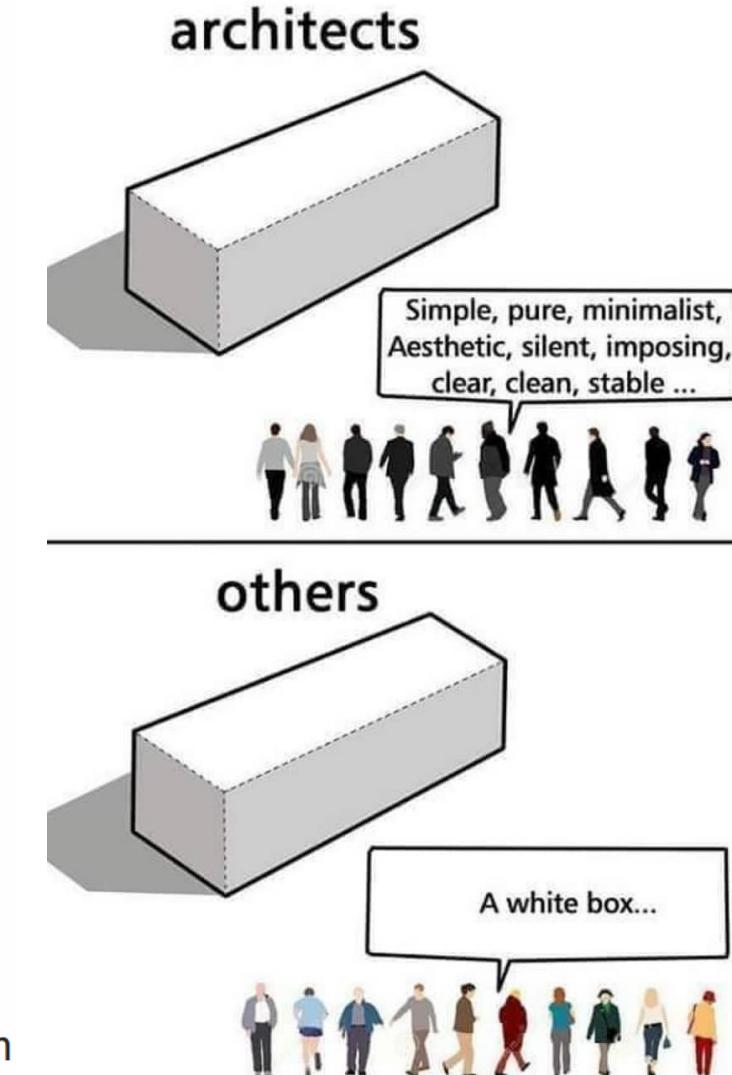
- Jadro aplikácie, jej logika a funkcie, výpočty a spracovanie dát

- **Dátová vrstva**

- Túto vrstvu tvorí najčastejšie databáza , ktorá dáta uchováva, sprístupňuje a zaručuje ich konzistenciu
- Môže tu byť ale aj (sietový) súborový systém, webová služba alebo iná aplikácia



N Tier Architecture Diagram



# Čo je Java?

Objektovo orientovaný programovací jazyk

**ORACLE®**



Vychádza zo syntaxe C a C++



← →

[Bio](#)

[8 Fallacies](#)

[Standards](#)

[Facebook](#)

[Twitter](#)

Personal stuff:

Work stuff:



## Made the leap to Amazon Web Services!

It's time for a change. I'm leaving Boeing Defense (nee Liquid Robotics), with many fond memories. Today I start a new Adventure at Amazon Web Services. I'll mostly be working on IoT-related projects, but I'm sure to get dragged into projects all over the map. Including OpenJDK.

This blog has become almost totally stagnant. These days, I mostly use [Facebook](#) for posting personal stuff, and [Twitter](#) for work-related stuff.



# The Eight Fallacies of Distributed Computing

*Peter Deutsch*

Essentially everyone, when they first build a distributed application, makes the following eight assumptions. All prove to be false in the long run and all cause *big* trouble and *painful* learning experiences.

1. The network is reliable
2. Latency is zero
3. Bandwidth is infinite
4. The network is secure
5. Topology doesn't change
6. There is one administrator
7. Transport cost is zero
8. The network is homogeneous

For more details, read the article by Arnon Rotem-Gal-Oz

# Začiatky v Jave...

Problémy pri kompilovaní

Syntaktické chyby

Sémantické chyby

Problémy pri spúšťaní

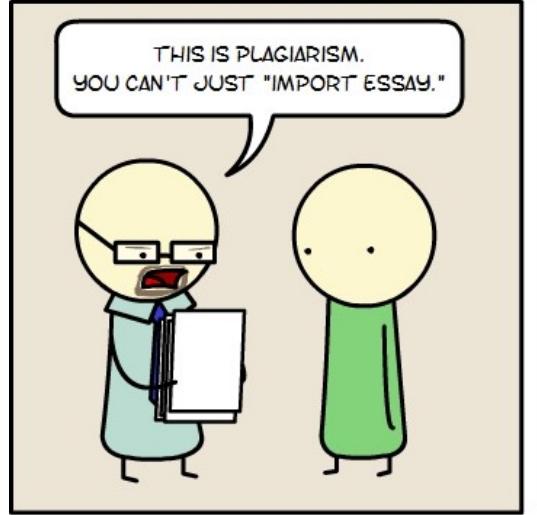
Chybové hlásenia

I had a problem so I  
thought to use Java

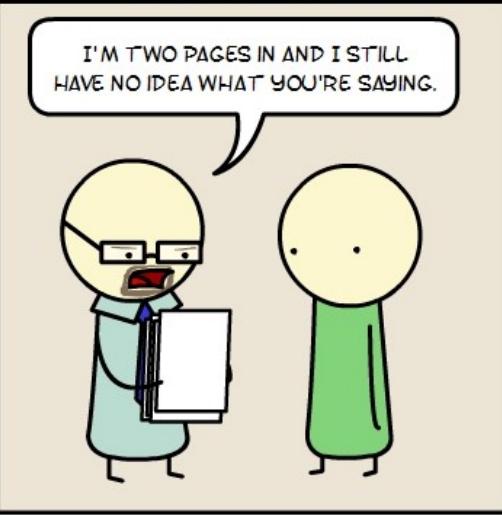
Now I have a ProblemFactory

javac: Command not found

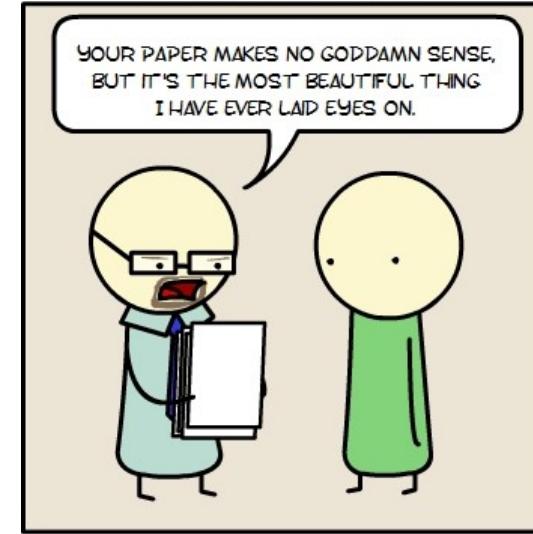
# PYTHON



# JAVA



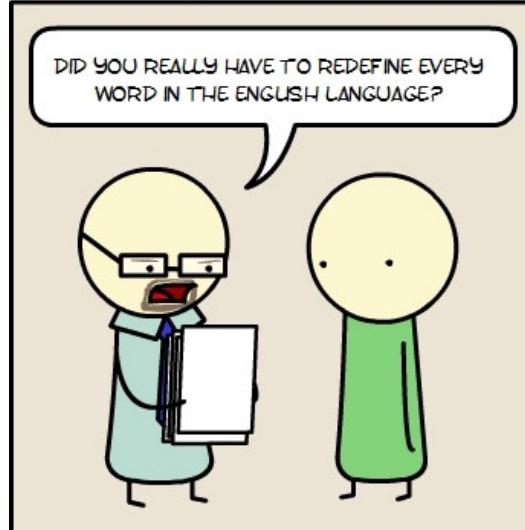
# LATEX



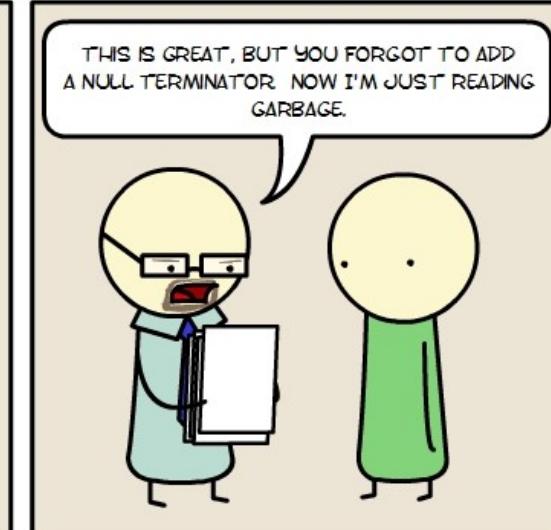
# HTML



# ASSEMBLY



# C



Feb 2021	Feb 2020	Change	Programming Language	Ratings	Change
1	2	▲	C	16.34%	-0.43%
2	1	▼	Java	11.29%	-6.07%
3	3		Python	10.86%	+1.52%
4	4		C++	6.88%	+0.71%
5	5		C#	4.44%	-1.48%
6	6		Visual Basic	4.33%	-1.53%
7	7		JavaScript	2.27%	+0.21%
8	8		PHP	1.75%	-0.27%
9	9		SQL	1.72%	+0.20%
10	12	▲	Assembly language	1.65%	+0.54%
11	13	▲	R	1.56%	+0.55%
12	26	▲	Groovy	1.50%	+1.08%
13	11	▼	Go	1.28%	+0.15%
14	15	▲	Ruby	1.23%	+0.39%
15	10	▼	Swift	1.13%	-0.33%
16	16		MATLAB	1.06%	+0.27%
17	18	▲	Delphi/Object Pascal	1.02%	+0.27%
18	22	▲	Classic Visual Basic	1.01%	+0.40%
19	19		Perl	0.93%	+0.23%

## Very Long Term History

To see the bigger picture, please find below the positions of the top 10 programming languages of many years back. Please note that these are *average* positions for a period of 12 months.

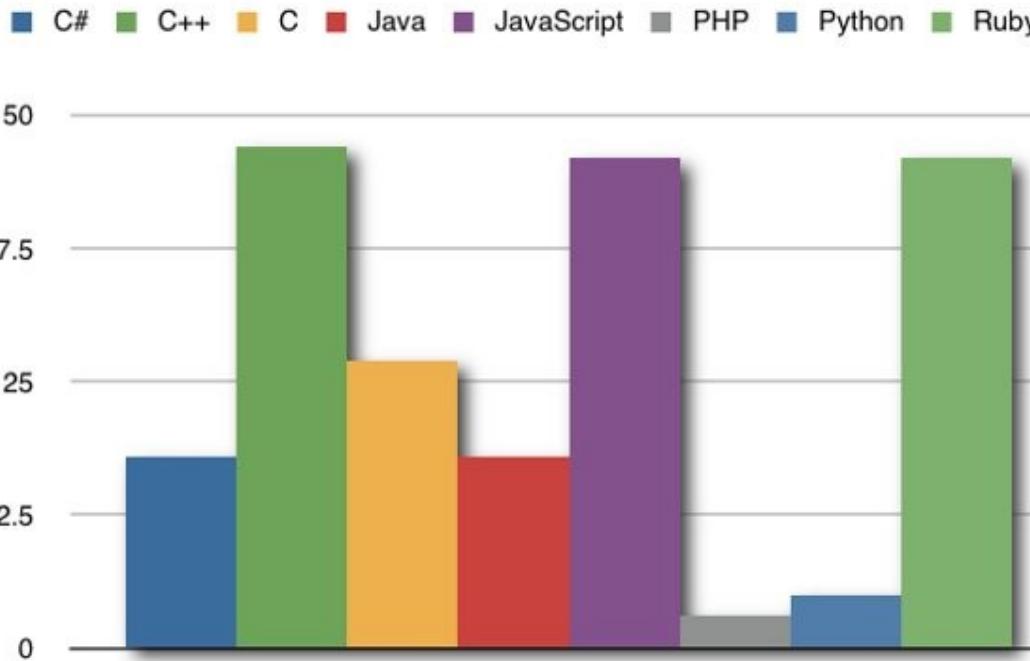
Programming Language	2021	2016	2011	2006	2001	1996	1991	1986
C	1	2	2	2	1	1	1	1
Java	2	1	1	1	3	28	-	-
Python	3	5	6	7	24	15	-	-
C++	4	3	3	3	2	2	2	8
C#	5	4	5	6	9	-	-	-
JavaScript	6	7	10	9	6	30	-	-
PHP	7	6	4	4	19	-	-	-
R	8	14	39	-	-	-	-	-
SQL	9	-	-	-	-	-	-	-
Go	10	57	16	-	-	-	-	-
Perl	14	9	7	5	4	3	-	-
Lisp	29	24	13	13	17	5	3	2
Ada	33	23	21	15	15	6	9	3

## Programming Language Hall of Fame

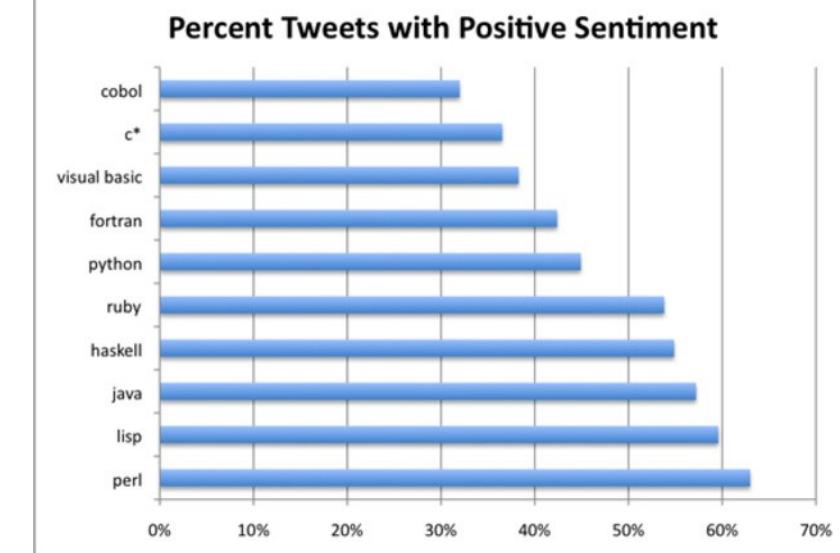
The hall of fame listing all "Programming Language of the Year" award winners is shown below. The award is given to the programming language that

# Oblúbenost Javy

## Twitter

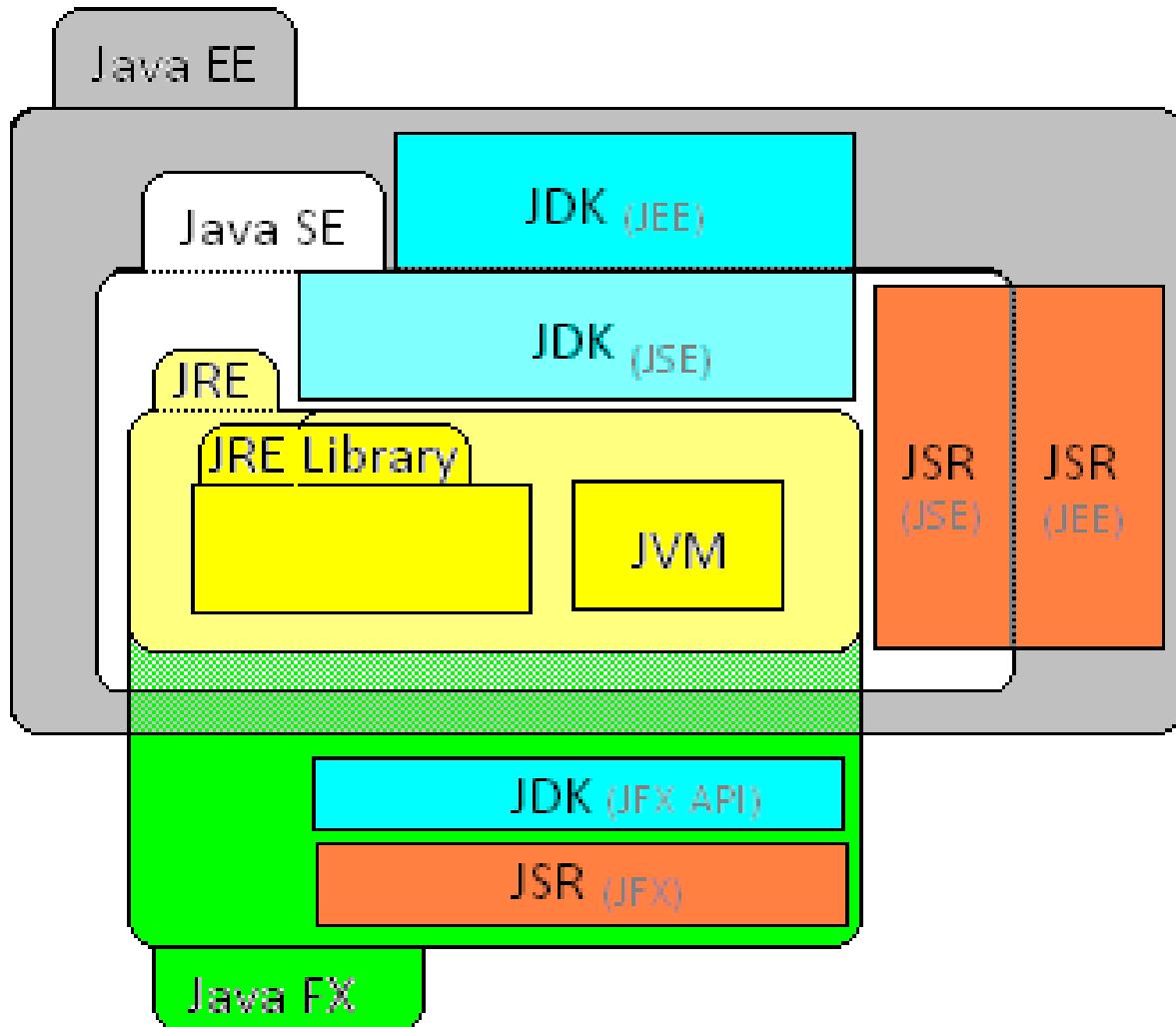


## GitHub



StackOverflow, JetBrains

# Java (platforma)



**JDK**

`javac, jar, javap, etc.`

**JRE**

`java, javaw, rt.jar, libraries`

**JVM**

`JIT Compiler`

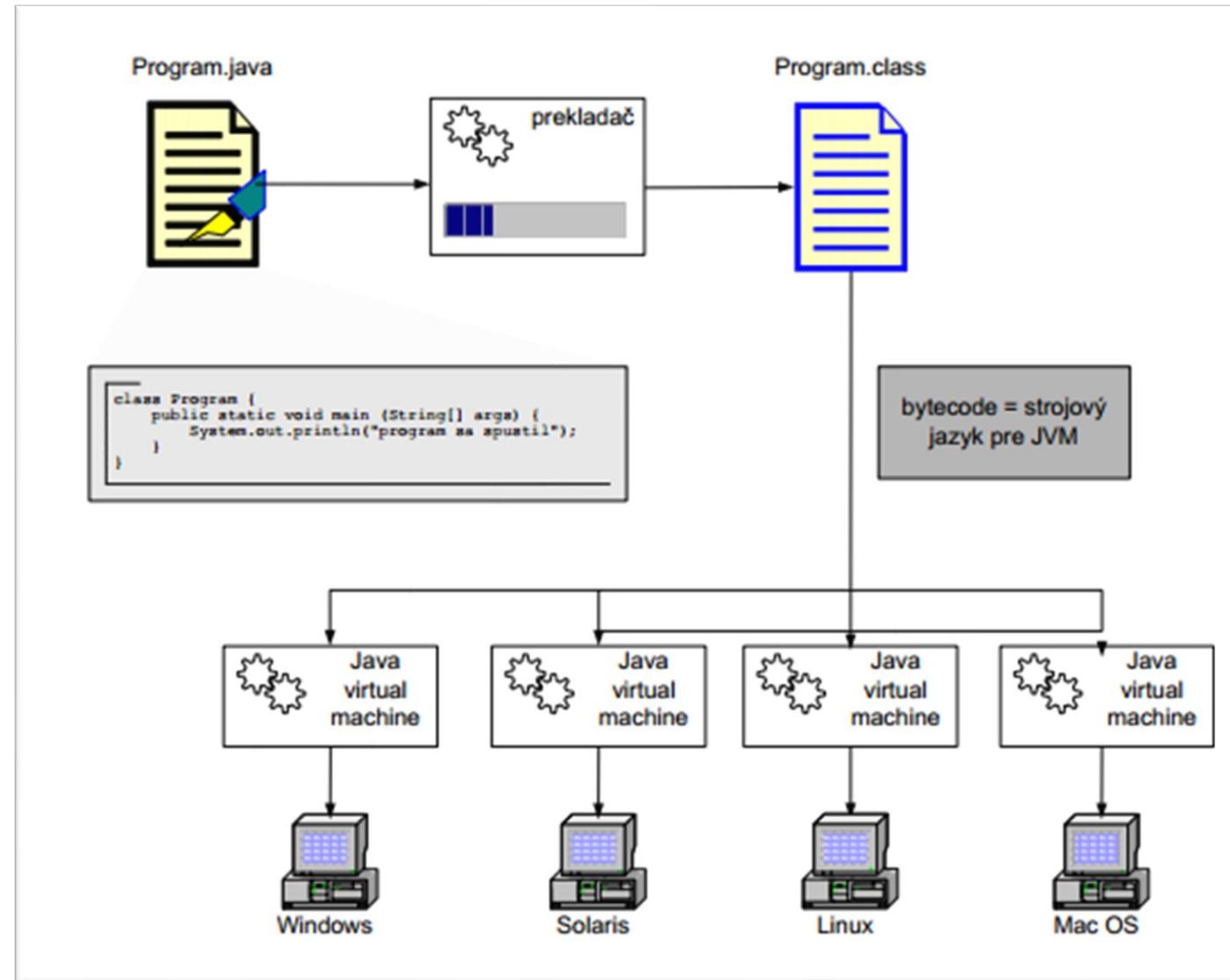
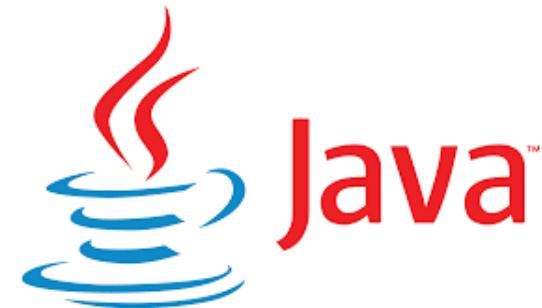
		Java Language											
		java	javac	javadoc	jar	javap	jdeps	Scripting					
JDK	Tools & Tool APIs	Security	Monitoring	JConsole	VisualVM	JMC	JFR						
		JPDA	JVM TI	IDL	RMI	Java DB	Deployment						
		Internationalization		Web Services		Troubleshooting							
JRE	Deployment	Java Web Start			Applet / Java Plug-in								
		JavaFX											
		Swing		Java 2D		AWT	Accessibility						
JRE	User Interface Toolkits	Drag and Drop		Input Methods		Image I/O	Print Service	Sound					
		IDL	JDBC	JNDI	RMI	RMI-IIOP		Scripting					
		Beans	Security		Serialization		Extension Mechanism						
JRE	Integration Libraries	JMX	XML JAXP		Networking		Override Mechanism						
		JNI	Date and Time		Input/Output		Internationalization						
		lang and util											
JRE	Base Libraries	Math		Collections		Ref Objects		Regular Expressions					
		Logging		Management		Instrumentation		Concurrency Utilities					
		Reflection	Versioning		Preferences API		JAR	Zip					
Java Virtual Machine		Java HotSpot Client and Server VM											

Java SE

API

Compact Profiles

# Java platforma



## Java SE Development Kit 11.0.14

Java SE subscribers will receive JDK 11 updates until at least **September of 2026**.

These downloads can be used for development, personal use, or to run Oracle licensed products. Use for other purposes, including production or commercial use, requires a Java SE subscription or another Oracle license.

JDK 11 software is licensed under the [Oracle Technology Network License Agreement for Oracle Java SE](#).

JDK 11.0.14 [checksum](#)

[Linux](#)   [macOS](#)   [Solaris](#)   [Windows](#)

Product/file description	File size	Download
ARM 64 Debian Package	134.61 MB	<a href="#">jdk-11.0.14_linux-aarch64_bin.deb</a>
ARM 64 RPM Package	140.63 MB	<a href="#">jdk-11.0.14_linux-aarch64_bin.rpm</a>
ARM 64 Compressed Archive	156.99 MB	<a href="#">jdk-11.0.14_linux-aarch64_bin.tar.gz</a>
x64 Debian Package	138.3 MB	<a href="#">jdk-11.0.14_linux-x64_bin.deb</a>
x64 RPM Package	144.48 MB	<a href="#">jdk-11.0.14_linux-x64_bin.rpm</a>
x64 Compressed Archive	160.87 MB	<a href="#">jdk-11.0.14_linux-x64_bin.tar.gz</a>

Java SE
Java EE
Java ME
Java SE Subscription
Java Embedded
Java Card
Java TV
Community
Java Magazine

[Overview](#) [Downloads](#) [Documentation](#) [Community](#) [Technologies](#) [Training](#)**The information on this page is for Archive Purposes Only**

This page is not being actively maintained. Links within the documentation may not work and the information itself may no longer be valid. The last revision to this document was made on April 20, 1999

- [136057 TOC](#)
- [139411 Page 1](#)
- [137760 Page 2](#)
- [141855 Page 3](#)
- [136091 Page 4](#)
- [141999 Page 5](#)
- [141270 Page 6](#)
- [142311 Page 7](#)
- [141388 Page 8](#)
- [135099 Page 9](#)
- [137265 Page 10](#)
- [137946 Page 11](#)
- [142146 Copyright](#)
- [150233 zip download](#)
- [150003 pdf download](#)

[CONTENTS](#) | [PREV](#) | [NEXT](#)**Code Conventions for the Java™ Programming Language**

Revised April 20, 1999

**1 Introduction****1.1 Why Have Code Conventions****1.2 Acknowledgments****Java SDKs and Tools**

- ❖ [Java SE](#)
- ❖ [Java EE and Glassfish](#)
- ❖ [Java ME](#)
- ❖ [Java Card](#)
- ❖ [NetBeans IDE](#)
- ❖ [Java Mission Control](#)

**Java Resources**

- ❖ [Java APIs](#)
- ❖ [Technical Articles](#)
- ❖ [Demos and Videos](#)
- ❖ [Forums](#)
- ❖ [Java Magazine](#)
- ❖ [Developer Training](#)
- ❖ [Tutorials](#)
- ❖ [Java.com](#)

## JDK 11

JDK 11 is the open-source reference implementation of version 11 of the Java SE Platform as specified by JSR 384 in the Java Community Process.

JDK 11 reached General Availability on 25 September 2018. Production-ready binaries under the GPL are available from Oracle; binaries from other vendors will follow shortly.

The features and schedule of this release were proposed and tracked via the JEP Process, as amended by the JEP 2.0 proposal. The release was produced using the JDK Release Process (JEP 3).

### Features

- 181: Nest-Based Access Control
- 309: Dynamic Class-File Constants
- 315: Improve Aarch64 Intrinsics
- 318: Epsilon: A No-Op Garbage Collector
- 320: Remove the Java EE and CORBA Modules
- 321: HTTP Client (Standard)
- 323: Local-Variable Syntax for Lambda Parameters
- 324: Key Agreement with Curve25519 and Curve448
- 327: Unicode 10
- 328: Flight Recorder
- 329: ChaCha20 and Poly1305 Cryptographic Algorithms
- 330: Launch Single-File Source-Code Programs
- 331: Low-Overhead Heap Profiling
- 332: Transport Layer Security (TLS) 1.3
- 333: ZGC: A Scalable Low-Latency Garbage Collector (Experimental)
- 335: Deprecate the Nashorn JavaScript Engine
- 336: Deprecate the Pack200 Tools and API

### Schedule

2018/06/28	Rampdown Phase One (fork from main line)
2018/07/26	Rampdown Phase Two
2018/08/16	Initial Release Candidate
2018/08/30	Final Release Candidate
2018/09/25	General Availability

Last update: 2019/3/19 17:06 UTC

Installing  
Contributing  
Sponsoring  
Developers' Guide  
Vulnerabilities  
JDK GA/EA Builds  
Mailing lists  
Wiki · IRC

Bylaws · Census  
Legal

### JEP Process

### Source code

Mercurial  
GitHub

### Tools

Mercurial  
Git  
jtreg harness

**Groups**  
(overview)  
Adoption

Build  
Client Libraries  
Compatibility &  
Specification  
Review

Compiler  
Conformance  
Core Libraries

Governing Board  
HotSpot

IDE Tooling & Support  
Internationalization

JMX  
Members  
Networking

Porters  
Quality

Security  
Serviceability  
Vulnerability

Web

**Projects**  
(overview)

Amber  
Annotations Pipeline

2.0  
Audio Engine  
Build Infrastructure

CRaC  
Caciocavallo

Closures  
Code Tools  
Coin

Common VM  
Interface  
Compiler Grammar

Detroit  
Developers' Guide

Device I/O  
Duke

Font Scaler  
Framebuffer Toolkit

Graal

## JDK 17

JDK 17 is the open-source reference implementation of version 17 of the Java SE Platform, as specified by [JSR 390](#) in the Java Community Process.

JDK 17 reached [General Availability](#) on 14 September 2021. Production-ready binaries under the GPL are [available from Oracle](#); binaries from other vendors [will follow shortly](#).

The features and schedule of this release were proposed and tracked via the [JEP Process](#), as amended by the [JEP 2.0 proposal](#). The release was produced using the [JDK Release Process \(JEP 3\)](#).

### Features

- 306: [Restore Always-Strict Floating-Point Semantics](#)
- 356: [Enhanced Pseudo-Random Number Generators](#)
- 382: [New macOS Rendering Pipeline](#)
- 391: [macOS/AArch64 Port](#)
- 398: [Deprecate the Applet API for Removal](#)
- 403: [Strongly Encapsulate JDK Internals](#)
- 406: [Pattern Matching for switch \(Preview\)](#)
- 407: [Remove RMI Activation](#)
- 409: [Sealed Classes](#)
- 410: [Remove the Experimental AOT and JIT Compiler](#)
- 411: [Deprecate the Security Manager for Removal](#)
- 412: [Foreign Function & Memory API \(Incubator\)](#)
- 414: [Vector API \(Second Incubator\)](#)
- 415: [Context-Specific Deserialization Filters](#)

JDK 17 will be a long-term support (LTS) release from most vendors. For a complete list of the JEPs integrated since the previous LTS release, JDK 11, please see [here](#).

### Schedule

- 2021/06/10 Rampdown Phase One (fork from main line)
- 2021/07/15 Rampdown Phase Two
- 2021/08/05 Initial Release Candidate
- 2021/08/19 Final Release Candidate
- 2021/09/14 General Availability

Installing  
Contributing  
Sponsoring  
Developers' Guide  
Vulnerabilities  
JDK GA/EA Builds  
Mailing lists  
Wiki · IRC

Bylaws · Census  
Legal

#### JEP Process

Source code  
Mercurial  
GitHub

Tools  
Mercurial  
Git  
jtreg harness

Groups  
(overview)  
Adoption  
Build  
Client Libraries  
Compatibility &  
Specification  
Review  
Compiler  
Conformance  
Core Libraries  
Governing Board  
HotSpot  
IDE Tooling & Support  
Internationalization  
JMX  
Members  
Networking  
Porters  
Quality  
Security  
Serviceability  
Vulnerability  
Web

Projects  
(overview)  
Amber  
Annotations Pipeline  
2.0

Audio Engine  
Build Infrastructure  
CRaC  
Caciocavallo  
Closures  
Code Tools  
Coin  
Common VM  
Interface

## JDK 9

The goal of this Project was to produce an open-source reference implementation of the Java SE 9 Platform as defined by JSR 379 in the [Java Community Process](#).

JDK 9 reached [General Availability](#) on 21 September 2017. Production-ready binaries under the GPL are [available from Oracle](#); binaries from other vendors [will follow shortly](#).

The features and schedule of this release were proposed and tracked via the [JEP Process](#), as amended by the [JEP 2.0 proposal](#).

### Features

- 102: [Process API Updates](#)
- 110: [HTTP 2 Client](#)
- 143: [Improve Contended Locking](#)
- 158: [Unified JVM Logging](#)
- 165: [Compiler Control](#)
- 193: [Variable Handles](#)
- 197: [Segmented Code Cache](#)
- 199: [Smart Java Compilation, Phase Two](#)
- 200: [The Modular JDK](#)
- 201: [Modular Source Code](#)
- 211: [Elide Deprecation Warnings on Import Statements](#)
- 212: [Resolve Lint and Doclint Warnings](#)
- 213: [Milling Project Coin](#)
- 214: [Remove GC Combinations Deprecated in JDK 8](#)
- 215: [Tiered Attribution for javac](#)
- 216: [Process Import Statements Correctly](#)
- 217: [Annotations Pipeline 2.0](#)
- 219: [Datagram Transport Layer Security \(DTLS\)](#)
- 220: [Modular Run-Time Images](#)
- 221: [Simplified Doclet API](#)
- 222: [jshell: The Java Shell \(Read-Eval-Print Loop\)](#)
- 223: [New Version-String Scheme](#)
- 224: [HTML5 Javadoc](#)
- 225: [Javadoc Search](#)
- 226: [UTF-8 Property Files](#)
- 227: [Unicode 7.0](#)
- 228: [Add More Diagnostic Commands](#)
- 229: [Create PKCS12 Keystores by Default](#)

[Installing](#)  
[Contributing](#)  
[Sponsoring](#)  
[Developers' Guide](#)  
[Vulnerabilities](#)  
[JDK GA/EA Builds](#)  
[Mailing lists](#)  
[Wiki](#) · [IRC](#)

[Bylaws](#) · [Census](#)  
[Legal](#)

**JEP Process**

**Source code**  
[Mercurial](#)  
[GitHub](#)

**Tools**  
[Mercurial](#)  
[Git](#)  
[jtreg harness](#)

**Groups**  
([overview](#))  
[Adoption](#)  
[Build](#)  
[Client Libraries](#)  
[Compatibility & Specification Review](#)  
[Compiler](#)  
[Conformance](#)  
[Core Libraries](#)  
[Governing Board](#)  
[HotSpot](#)  
[IDE Tooling & Support](#)  
[Internationalization](#)  
[JMX](#)

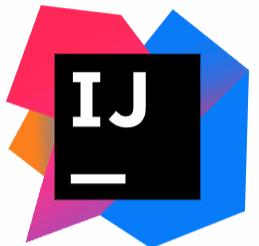
[Members](#)  
[Networking](#)  
[Porters](#)  
[Quality](#)  
[Security](#)  
[Serviceability](#)  
[Vulnerability](#)  
[Web](#)

**Projects**  
([overview](#))  
[Amber](#)  
[Annotations Pipeline 2.0](#)  
[Audio Engine](#)  
[Build Infrastructure](#)  
[CRaC](#)  
[Caciocavallo](#)  
[Closures](#)  
[Code Tools](#)  
[Coin](#)  
[Common VM Interface](#)



## IntelliJ IDEA

Coming in 2022.1 What's New Features Resources Buy

[Download](#)

Version: 2021.3.2

Build: 213.6777.52

28 January 2022

[Release notes !\[\]\(464c8d8c37c93af1341f4240133feebe\_img.jpg\)](#)[System requirements](#)[Installation instructions](#)[Other versions](#)[Third-party software](#)

## Download IntelliJ IDEA

[Windows](#)[macOS](#)[Linux](#)

### Ultimate

For web and enterprise development

[Download](#)[.exe](#)

Free 30-day trial

### Community

For JVM and Android development

[Download](#)[.exe](#)

Free, built on open source

**IntelliJ IDEA****Ultimate****IntelliJ IDEA Community Edition **

Java, Kotlin, Groovy, Scala



Maven, Gradle, sbt



Git, GitHub, SVN, Mercurial, Perforce



Debugger



Docker



## What's New 2021.3

[Key updates](#)[Editor](#)[User Experience](#)[Java](#)[Kotlin](#)[Scala](#)[JavaScript](#)[SSH](#)[Profiler](#)[Build tools](#)[Version control](#)[Terminal](#)[Debugger](#)[Frameworks & Technologies](#)[Database tools](#)[QA tools](#)[Kubernetes](#)[Docker](#)[Space integration](#)[Other](#)

# What's New in IntelliJ IDEA 2021.3

IntelliJ IDEA 2021.3 provides support for remote development (Beta) and introduces a new way to troubleshoot IDE problems with the *Repair IDE...* action. It also brings debugger updates and the Constant conditions inspection for Kotlin, along with other valuable changes. The following short descriptions explain these and other noteworthy features in more detail.

[Download](#)

## Key updates



Run the IDE Remotely





Shelve and unshelve changes

Use patches

Review changes

▼ Git

Set up a Git repository

Sync with a remote Git repository  
(fetch, pull, update)Commit and push changes to Git  
repository

Sign commits with GPG keys

Investigate changes in Git repository

Manage Git branches

Apply changes from one Git branch to  
another

Resolve Git conflicts

Use Git to work on several features  
simultaneously

Undo changes in Git repository

Use tags to mark specific Git commits

Edit Git project history

▼ GitHub

Manage projects hosted on GitHub

Contribute to projects on GitHub

Share code with GitHub gists

▶ Mercurial

▶ Perforce

▶ Subversion

▶ Version control reference

# GitHub

Last modified: 12 January 2022

GitHub Settings: [Settings/Preferences](#) | [Version Control](#) | [GitHub](#)Required plugins: [Git](#) and [GitHub](#) (bundled and enabled by default)

IntelliJ IDEA lets you manage [Git](#) projects hosted on [GitHub](#) directly from the IDE: [clone repositories](#), [share your projects](#), [create forks](#), [share code through gists](#), [create pull requests](#) and [review incoming pull requests](#).

## Register a GitHub account

To be able to retrieve data from a repository hosted on GitHub, or share your projects, you need to register your GitHub account in IntelliJ IDEA.



If you do not want to specify your credentials each time you sync with a remote, or push your commits, you can configure IntelliJ IDEA to save your account information (see [Configure a password policy](#)).

### Register an existing account

▶ Getting started  
▶ IDE configuration  
▶ Project configuration  
▼ Write and edit source code

Editor basics  
Multiple cursors and selection ranges  
LightEdit mode  
▶ Code style and formatting  
▶ Source code navigation  
▶ Find and replace

Auto import  
Code completion  
▶ Generate code  
▶ Code refactoring  
Javadocs  
Code reference information  
▶ Code inspections

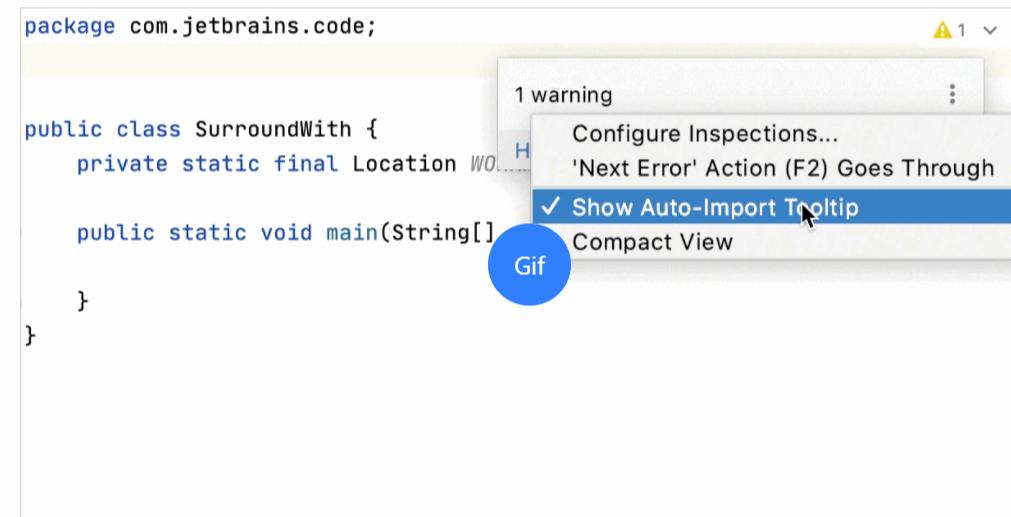
Intention actions  
▶ File templates  
▶ Live templates  
Compare files  
▶ Annotations  
▶ Natural languages  
TODO comments

# Disable import tooltips

When tooltips are disabled, unresolved references are underlined and marked with the red bulb icon ⓘ. To view the list of suggestions, click this icon (or press Alt+Enter) and select **Import class**.

## Disable all tooltips

- Hover the mouse over the inspection widget in the top-right corner of the editor, click ⋮, and disable the **Show Auto-Import Tooltip** option.



## Disable tooltips for classes or static methods and fields

- In the **Settings/Preferences** dialog (Ctrl+Alt+S), click **Editor | General | Auto Import**.

Auto import  
Automatically add import statements  
Import packages instead of single classes  
▶ Disable import tooltips  
Disable wildcard imports  
Disable auto import  
Exclude classes and packages from auto import  
Optimize imports

[User Interface](#) [Fun Stuff](#) [JavaScript](#) +1 more

# Rainbow Brackets

[izhangzhihao](#)[Get](#)

Compatible with IntelliJ IDEA (Ultimate, Community, Educational), Android Studio and [13 more](#)

[Overview](#)[Versions](#)[Reviews](#)[Support/Donate](#)

## Featured In

### Productivity bundle



```
override protected def backward[SubtypeOfOptimizer](originalDelta: INDArray)(  
    implicit implicitApplyRest: ImplicitApply.Aux[PartiallyAppliedOptimizer, SubtypeOfOptimizer],  
    asOptimizer: SubtypeOfOptimizer <:> OptimizerApi { type Delta <: INDArray }): Do[Unit] = {  
  
  Do.execute {  
    val delta =  
      implicitApplyRest(  
        indArrayPartialApplyOriginalDelta(indArrayPartialApplyWeight(indArrayOptimizerFactory.newInstance,  
          indArrayWeightParameter(this)),  
        indArrayOriginalDeltaParameter(originalDelta)).delta  
    <  
    synchronized {  
      data -= delta  
    }  
  }  
}
```

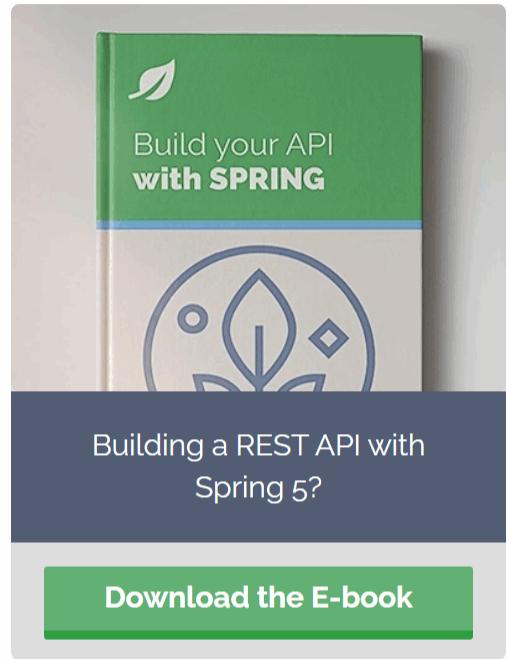
```
package com.github.izhangzhihao.rainbow.brackets;  
  
public class Test {  
  {  
    (((((((((((((((( )))))))))))))))))  
  }  
}
```

# How to Create an Executable JAR with Maven

Last modified: December 24, 2021

by baeldung

Maven



Get started with Spring 5 and Spring Boot 2, through the *Learn Spring* course:

[» CHECK OUT THE COURSE](#)

## 1. Overview

In this quick tutorial, we'll focus on **packaging a Maven project into an executable Jar file**.

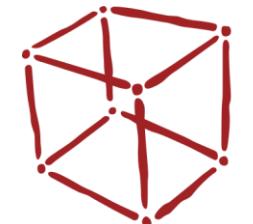
When creating a *.jar* file, we usually want to run it easily, without using the IDE. To that end, we'll discuss the configuration and pros/cons of using each of these approaches for creating the executable.

# Enough.. Done for the day..

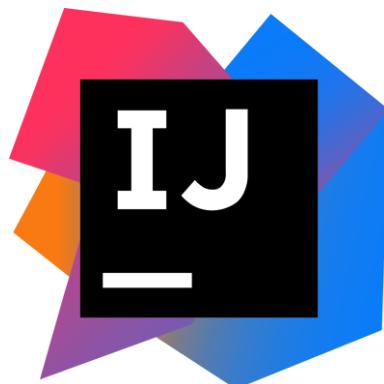
86



# Aké IDE mám použiť?



**NetBeans**



 **Visual Studio**

 **eclipse**

Integrated development environment

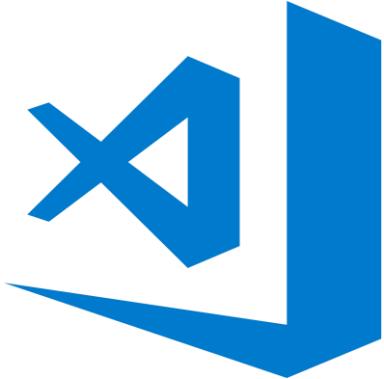
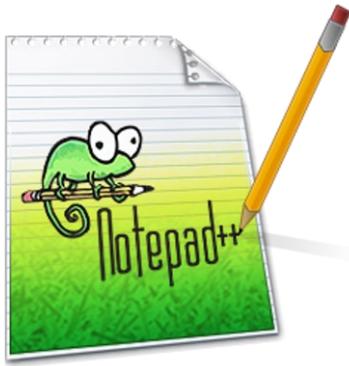
A composite image featuring two women. On the left, a woman with vibrant orange hair is smiling broadly, showing her teeth. On the right, another woman with dark hair and glasses is also smiling. They appear to be in a friendly, celebratory mood.

Je na vás aké IDEčko  
použijete

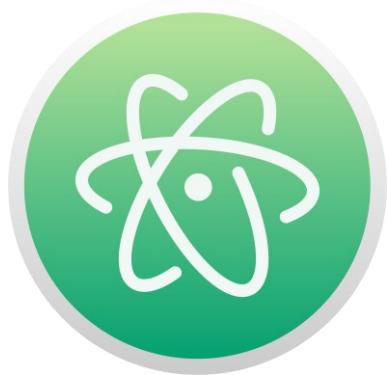
My code in IDE

My output  
in terminal

# Aký editor mám použiť?



```
:::  
iLE88Dj. :jD88888Dj:  
.LGitE888D.f8GjjjL8888E;  
iE :8888Et. .G888.  
;i E888, ,8888,  
D888, :8888:  
D888, :8888:  
D888, :8888:  
D888, :8888:  
888W, :8888:  
W88W, :8888:  
W88W: :8888:  
DGGD: :8888:  
:8888:  
:W888:  
:8888:  
E888i  
tW88D
```



# Dodržujte konvencie, best practices a Code style (Code Guidelines)

	Python	C#	TypeScript	Java
functions & methods	snake_case()	PascalCase()	camelCase()	camelCase()
classes	PascalCase	PascalCase	PascalCase	PascalCase
interfaces	N/A	PascalCase	PascalCase	PascalCase
namespaces	N/A	PascalCase	PascalCase	PascalCase
constants	snake_case	SCREAMING SNAKE CASE	SCREAMING_SNAKE_CASE	SCREAMING_SNAKE_CASE

# Google Java Style Guide

## Table of Contents

### [1 Introduction](#)

- [1.1 Terminology notes](#)
- [1.2 Guide notes](#)

### [4.6 Whitespace](#)

- [4.7 Grouping parentheses: recommended](#)
- [4.8 Specific constructs](#)

### [2 Source file basics](#)

- [2.1 File name](#)
- [2.2 File encoding: UTF-8](#)
- [2.3 Special characters](#)

### [5 Naming](#)

- [5.1 Rules common to all identifiers](#)
- [5.2 Rules by identifier type](#)
- [5.3 Camel case: defined](#)

### [3 Source file structure](#)

- [3.1 License or copyright information, if present](#)
- [3.2 Package statement](#)
- [3.3 Import statements](#)
- [3.4 Class declaration](#)

### [6 Programming Practices](#)

- [6.1 @Override: always used](#)
- [6.2 Caught exceptions: not ignored](#)
- [6.3 Static members: qualified using class](#)
- [6.4 Finalizers: not used](#)

### [4 Formatting](#)

- [4.1 Braces](#)
- [4.2 Block indentation: +2 spaces](#)
- [4.3 One statement per line](#)
- [4.4 Column limit: 100](#)
- [4.5 Line-wrapping](#)

### [7 Javadoc](#)

- [7.1 Formatting](#)
- [7.2 The summary fragment](#)
- [7.3 Where Javadoc is used](#)



## Java #4925

před 6 měsíci

How to delay intent starting on Android.

```
public void onStartClicked(){
    hideKeyboard();
    Flow newFlow = Flow.get(selectedOpiFlow);
    //If there is a flow on-going the actionBar acts like an abort otherwise a payment will be executed

    if (activeFlow == null) {
        resultTextField.setText("");
        saveNewAppState();
        startFlow(newFlow);
        abortButtonLayout.setVisibility(View.VISIBLE);
        opiFlowLayout.setVisibility(View.GONE);

        int a=0;
        while (a<9000){
            a++;
        }

        startAndroid10Intent();
    }
}
```

0 COMMENTS PŘIDAT KOMENTÁŘ

# Verzia Javy/JDK



Java SE JDK 11

# Čo sa oplatí prečítať?

## Slovensko a česko

- Albatrosmedia
- Kopp
- Grada
- Wolters Kluwer
- BEN
- Veda

## Zahraničie

- O'Reilly
- Manning
- Packt
- Apress
- Wiley
- No Starch Press

## YouTube tutoriály

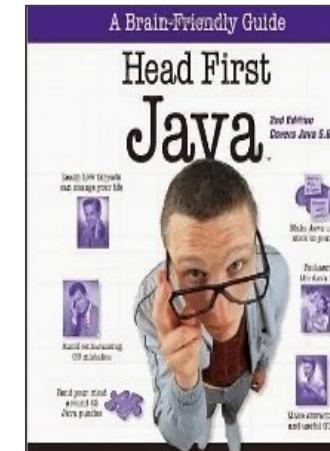
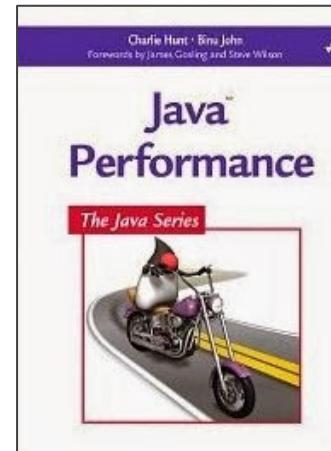
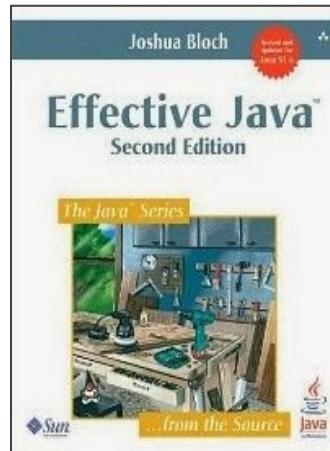
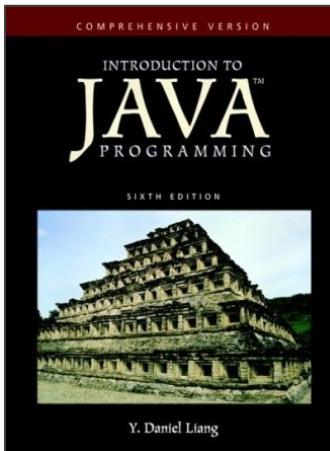
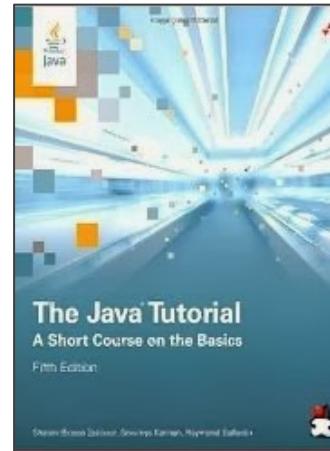
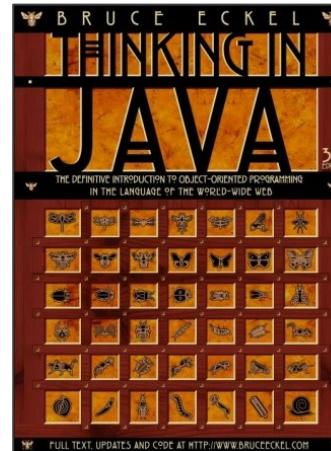
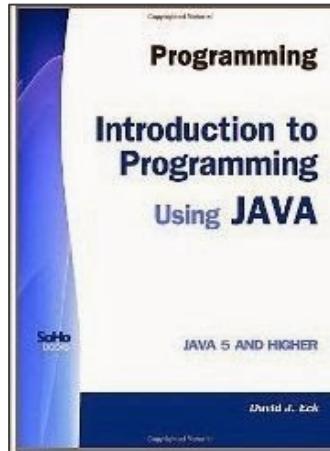
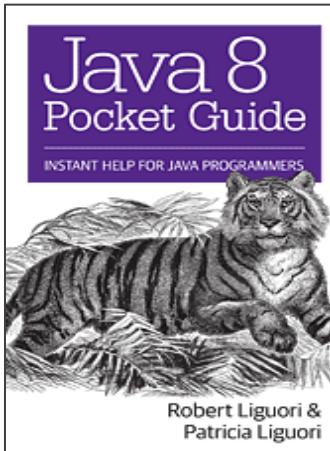
Oracle a O'Reilly

# Čo sa oplatí/neoplatí prečítať SK/CZ



Mistrovství a Kuchárka

# Čo sa oplatí/neoplatí prečítať EN



Head First

## Vývojári

Verejná skupina

Informácie

## Diskusia

Oznámenia

Členovia

Podujatia

Videá

Fotky

Súbory

Hľadať v tejto skupine



Ste člen

Upozornenia

Zdieľať

... Viac



Napísat' príspěvok...

Pridať fotku/vi...

Živé video

Viac



Napište niečo...



Fotka/video



Divácka páry



Označiť priat...

...

NOVÁ AKTIVITA



Roland Mondek

10 h

## POZVAŤ ČLENOV

+ Zadajte meno alebo e-mailovú adresu...



## ČLENOVIA

5 505 členov



## POPIS

Skupina softvérových vývojárov. Táto skupina by mala byť miestom... [Zobraziť viac](#)

## TYP SKUPINY

Všeobecné

## VAŠE STRÁNKY



IT Academy



VITA - Virtual It Academy

## KONTAKTY



Evka Rybárska



Jarmila Palenčárová



Stefan Orosi



Ivana Ivka Jasaňová



Hrá Word Blitz



Ivana Pavlíková



Martin Vanko



Lucia Kovačičová

4 h



Lošák Filip



Andrej Nejedlik



Gabika Zubrikova

## SKUPINOVÉ KONVERZÁCIE



Vytvoriť novú skupinu

Hľadať



```
52 </div>
53 </body>
54 <script type="text/javascript">
55 <!--
56 var currentImage = "bigImage1";
57 var pages = Math.ceil(photos.length / 9);
58 updatePages();
59 updateAllImages();
60 // document.getElementById('bigImage0').src = 'images/wieksza/' + photos[page * 9];
61 // document.getElementById('bigImage0').style.display = '';
62 changePhotoDescription('1');
63
64
65
66
67
68
69
70
71
72
73
```

# Programátori

• Verejná skupina · 7,2 tis. členov

Člen ▾

+ Pozvať

Informácie

Diskusia

Vybrané

Témy

Ludia

Podujatia

Médiá

Súbory



...



Napíšte niečo...

Živé video

Fotka/video

Anketa

Vybrané



## Informácie

Táto skupina slúži na dohadzovanie si kŕeftíkov a pre hľadačov programátorov / vývojárov.

• Verejná

Členov skupiny a ich príspevky bude vidieť ktokoľvek.





Miroslav



## JavaGroup

Verejná skupina · 450 členov

Člen ▾

+ Pozvť



Informácie

Diskusia

Vybrané

Témy

Ludia

Podujatia

Médiá

Súbory



Napíšte niečo...

Živé video

Fotka/video

Anketa

Vybrané



### Informácie

Ziju este nejaki Javisti? Dajte o sebe vediet

Skupina nie je určená pre zadávanie inzerátov a HR / recruiting. Dakujeme za pochopenie.

Verejná

Členov skupiny a ich príspevky bude vidieť



Home

PUBLIC

Questions

**Tags**

Users

COLLECTIVES

Explore Collectives

FIND A JOB

Jobs

Companies

TEAMS

Create free Team

# Tags

A tag is a keyword or label that categorizes your question with other, similar questions. Using the right tags makes it easier for others to find and answer your question.

[Show all tag synonyms](#)

java

java

Java is a high-level object oriented programming language. Use this tag when you're having problems using or understanding the language itself. Thi...

1827413  
questions

419 asked today, 2408 this week

javascript

For questions regarding programming in ECMAScript (JavaScript/JS) and its various dialects/implementations (excluding ActionScript). Note...

2335556  
questions

779 asked today, 4877 this week

javafx

The JavaFX platform enables developers to create and deploy Graphical User Interface (GUI) applications that behave consistently...

36355  
questions

6 asked today, 50 this week

java-8

for questions specific to Java 8 which is version 8 (internal number 1.8) of the Java platform, released on 18 March 2014. In most cases, you should also...

22076  
questions

9 asked today, 40 this week

java-stream

for questions related to the use of the Stream API. It was introduced in Java 8 and supports functional-style operations on streams of values, such...

10293  
questions

5 asked today, 26 this week

java-native-interface

The Java Native Interface (JNI) gives both the ability for JVM implementations to run system native code and the ability for native code t...

9404  
questions

12 asked this week, 38 this month

rx-java

RxJava – Reactive Extensions for the JVM – a library for composing asynchronous and event-based programs using observable sequence...

6796  
questions

6 asked this week, 27 this month

javascript-objects

for questions related to JavaScript objects.

6151  
questions

20 asked this week, 118 this month

java.util.scanner

A simple text scanner in the JDK which can parse primitive types and strings using regular expressions.

javafx-8

JavaFX 8 (previously named JavaFX 3) introduces a new API for JavaFX technology. JavaFX 8 supports 3D and brings up a Retina-Display Support. It ...

java-me

Java Platform, Micro Edition, or Java ME, is a Java platform designed for embedded systems.

facebook-javascript-sdk

Facebook's JavaScript SDK provides a rich set of client-side functionality for accessing Facebook's server-side API calls. It can collaborate with any SDK...

**Priestor pre vaše otázky.**

Mrkni na náš YouTube kanál a daj odber

 [WWW.YOUTUBE.COM/C/IT-ACADEMYSK](https://www.youtube.com/c/IT-ACADEMYSK) 