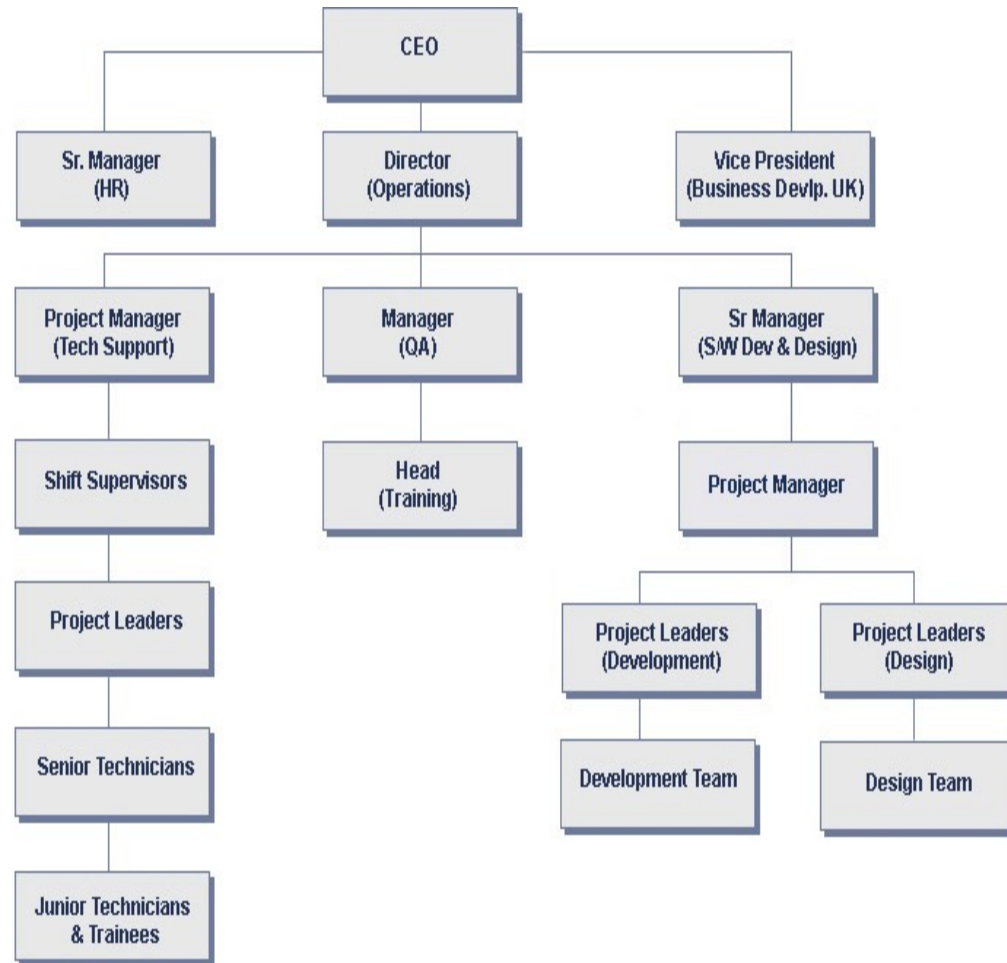# IT specialists

Written paper

- 10.01.2021

- Quiz – forms – use anything you want

Final grade = *20% course quizzes*

+ 30% CV

+ 50% written paper
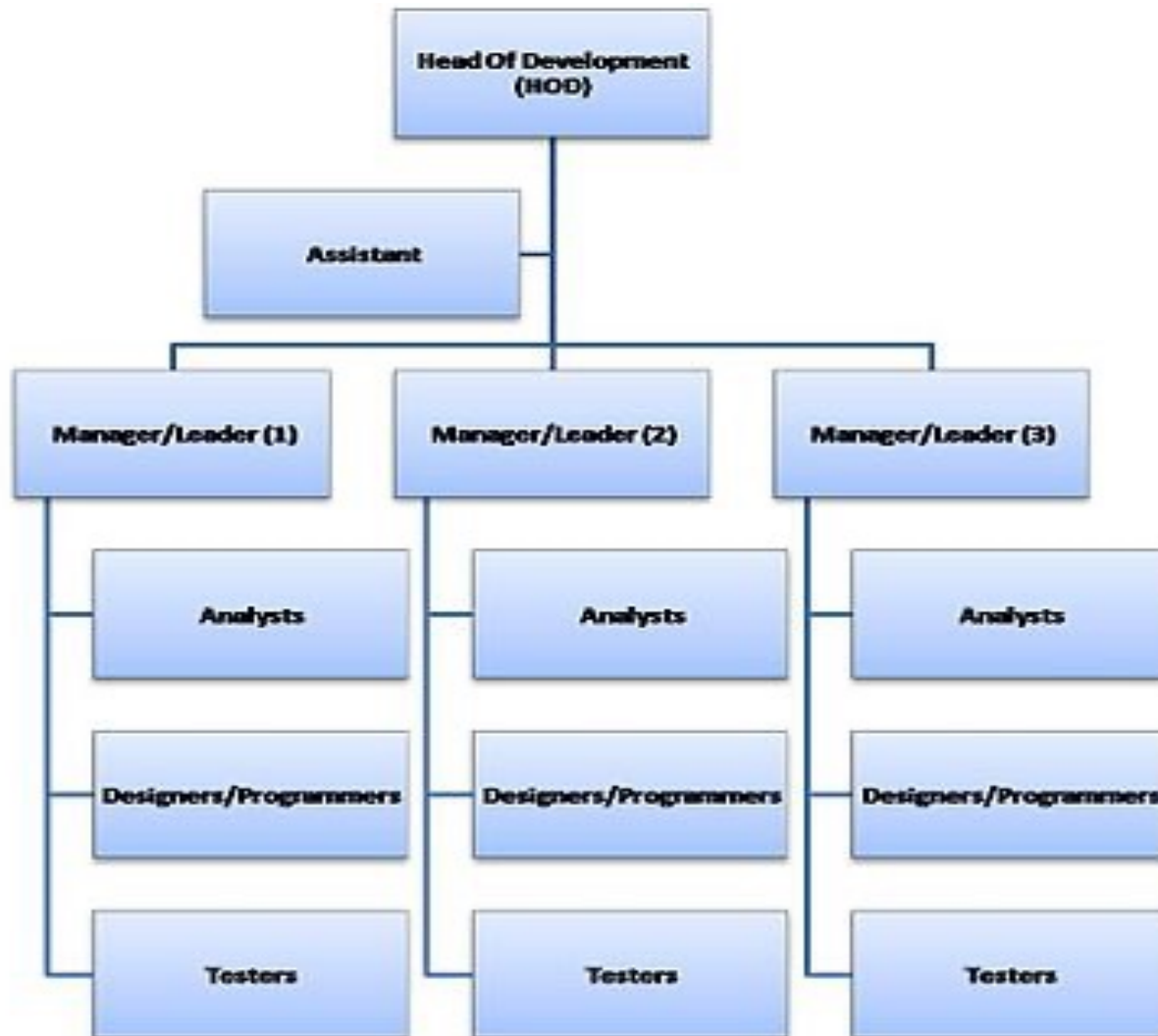
Organization of software companies

Hierarchical structure
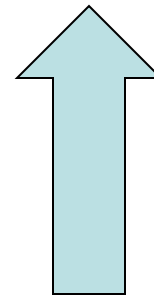## (for large and mid size companies)

Managing positions:

- CEO (Chief Executive Officer)
- PM - Project manager
- Project leader / Team Lead

Functional Structure

Occupations

- Usually, classified in one of the category:
  - Analysis & design
  - Development (programming)
  - Testing (maintenance/QA)

Programmer vs. Developer

- "Programmers write awesome code. Making it clean, well-factored and error free are very important concerns, but not at the expense of getting the job done. "
- Math skills
- *"A good breadth of algorithmic knowledge is imperative."*

- "They write code. Making it well-factored and clean is important, but other factors often take priority."
- Communication and people skills
- Find ways to solve problems fast, plugging components for solutions
- *"They are consummate generalists without any truly deep specializations"*

Developer/programmer

- Depends on domain:
  - Language: C#, java, C++, Python
  - Web
  - Mobile
  - Game

- Frontend
- Backend
- Full stack

- Level:
  - Junior
  - Medium
  - Senior

Developer/programmer

Frontend

Interact with user

UI

JS, HTML, CSS

Frameworks (Bootstrap, AngularJS, React)

Backend

Functionalities; server side, databases

libraries, APIs, services

Java, Python, SQL server

Full stack

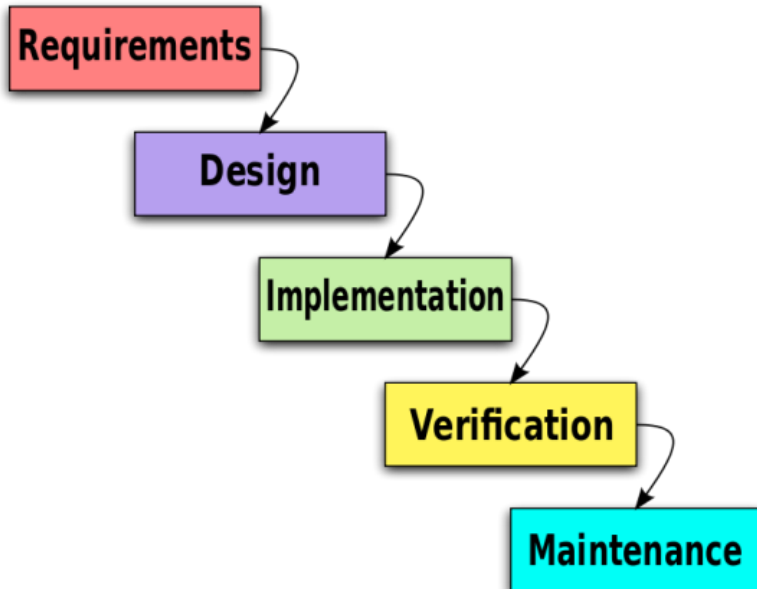Front end + backend

Client & server side

DevOps

- **DEV**elope & **Op**eration
- Def = „facilitate better coordination among operations, development, and testing functions by automating and streamlining the integration and deployment processes."

- Experience in:
  - Agile Project Management
  - Cloud Technology
  - Container Concepts
  - Continuous Integration
  - Deployment
  - Infrastructure
  - Configurations
- link between development and client
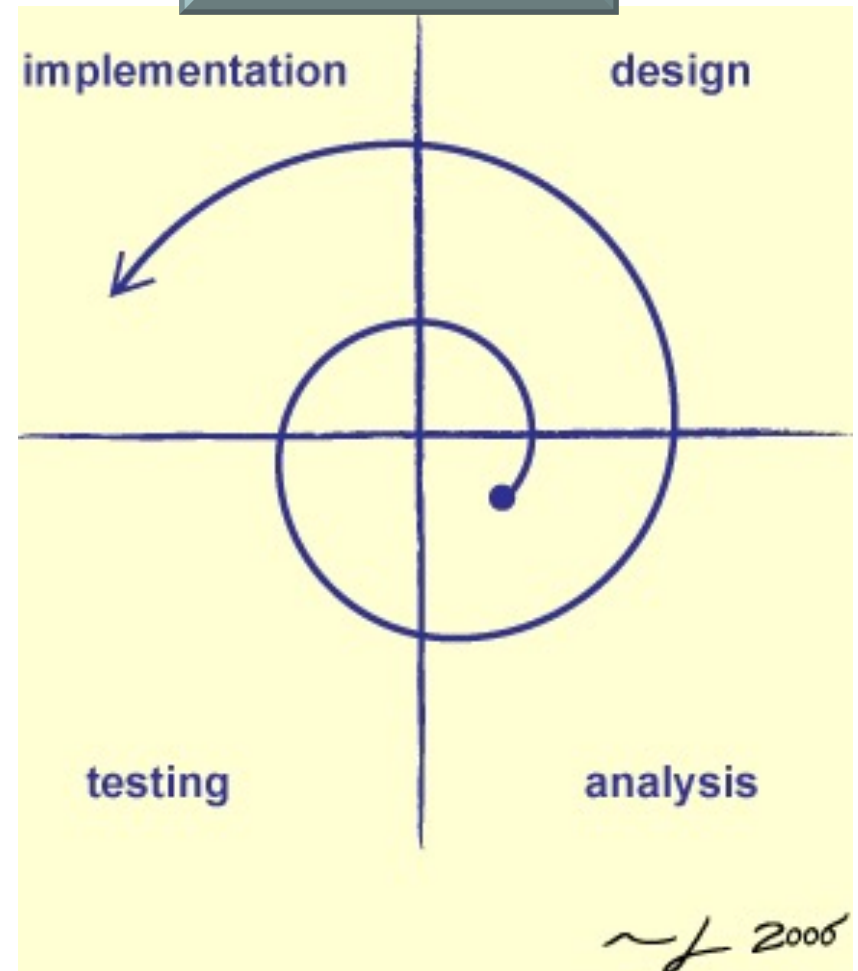- In Romania: focus on install, deploy

Agile

- Software development methodology
- Manifesto for Software Development (2001)
- „incremental SD"

Waterfall

Requirements

Design

Implementation

Verification

Maintenance

Spiral

implementation   design

testing   analysis
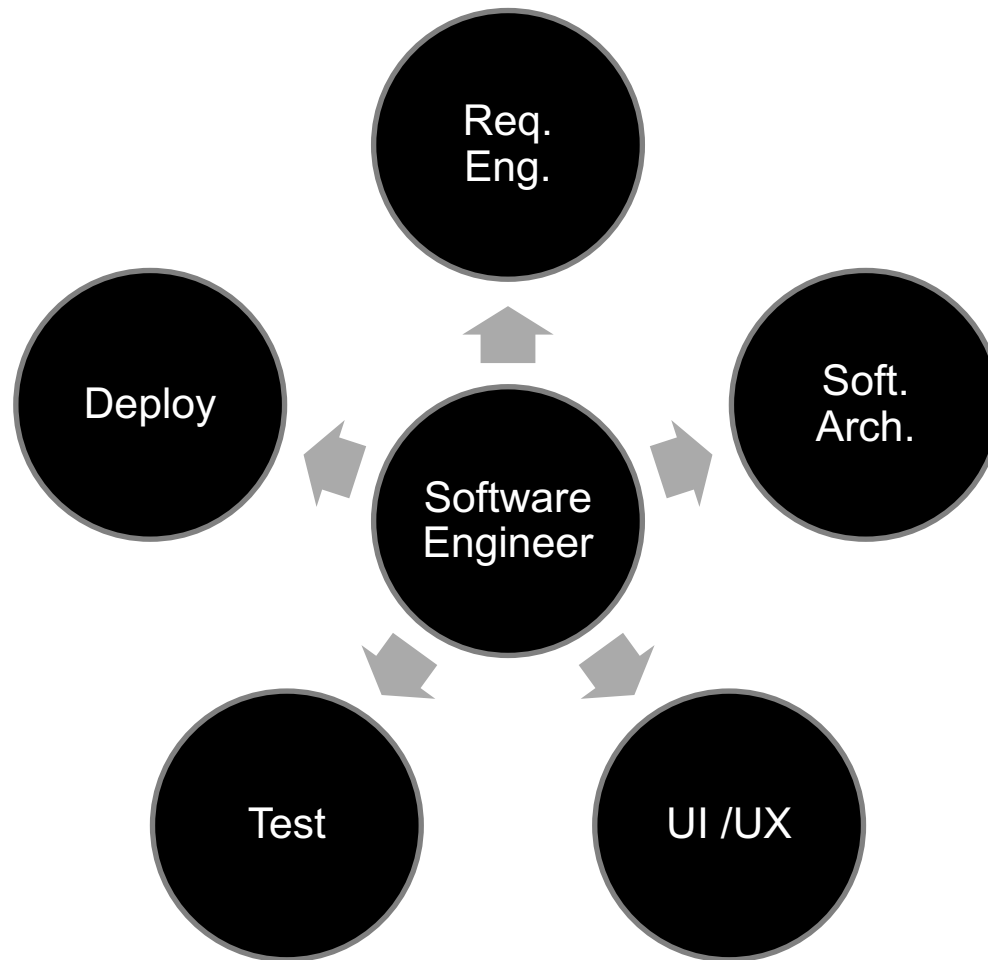
~ 2000

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Agile

Scrum master

- Planning, tracking tasks
- Knowledge of agile methodology and frameworks
- Good skills to coach team
- Basic knowledge of software development processes
- Soft skills:
  - Communication
  - Estimation, organization
  - Leadership

Product owner

- Development align with client needs
- Vision
- Managing project back-log
- Knowledgs: development; project management
- Soft skills:
  - **Communication**
  - Negociator

Software Engineer

Other position

1. Web designer
2. Game designer
3. Data base admin
4. System admin
5. Trainer
6. . . .

What position suits you and why?

- Business Analyst
- Programmer / Developer
  - Web, mobile, etc.
- Tester
- Web designer
- BD specialist
- SysAdmin

Teamwork

- No more than 10 in a team
- Split the work

<title>

Short Description

Technical skills

1. Software architect
2. Business Analyst
3. Frontend Developer
4. Backend Developer
5. Full stack developer
6. Tester
7. UX/UI designer
8. System admin
9. Web designer
10. DevOps

Soft skills

Experience level:
(years) –
junior/medium/senior

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