

# Frontend Development

INTRODUCERE (SCRATCH, KAREL, PROJECT MANAGEMENT, GITHUB)

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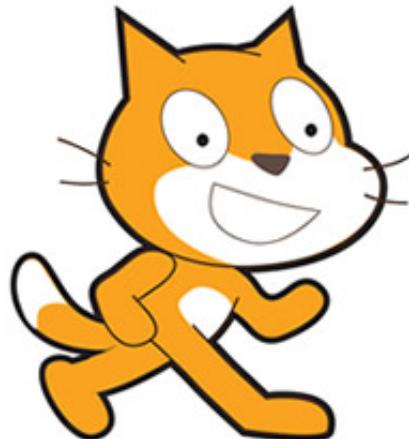


# Conținutul cursului

- Recapitulare
- Frontend-backend
- Scratch
- Karel
- Project Management
- Version Control (Git & Github)

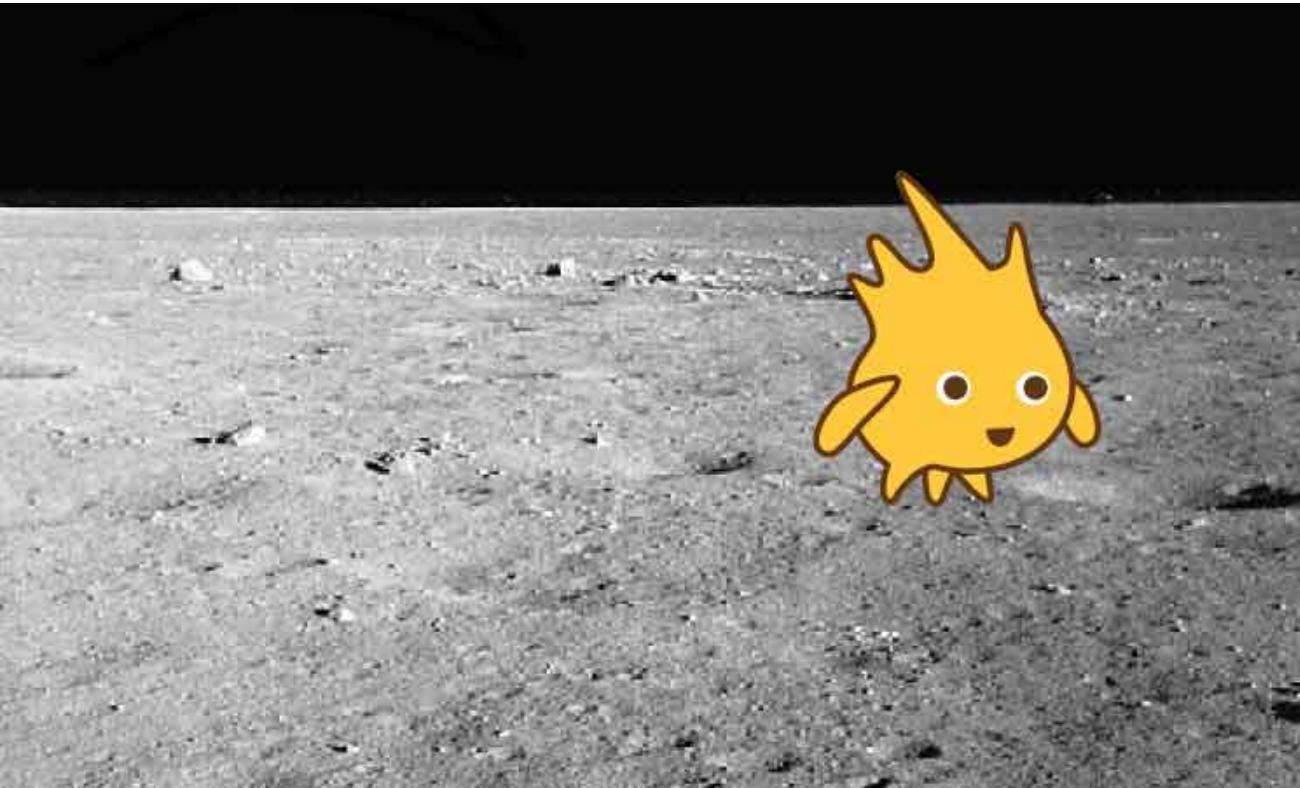
Să ne jucăm

SCRATCH



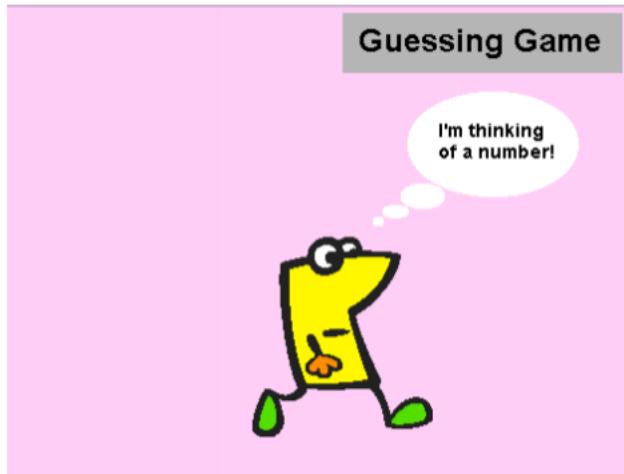
- <http://scratch.mit.edu>

# Să ne jucăm

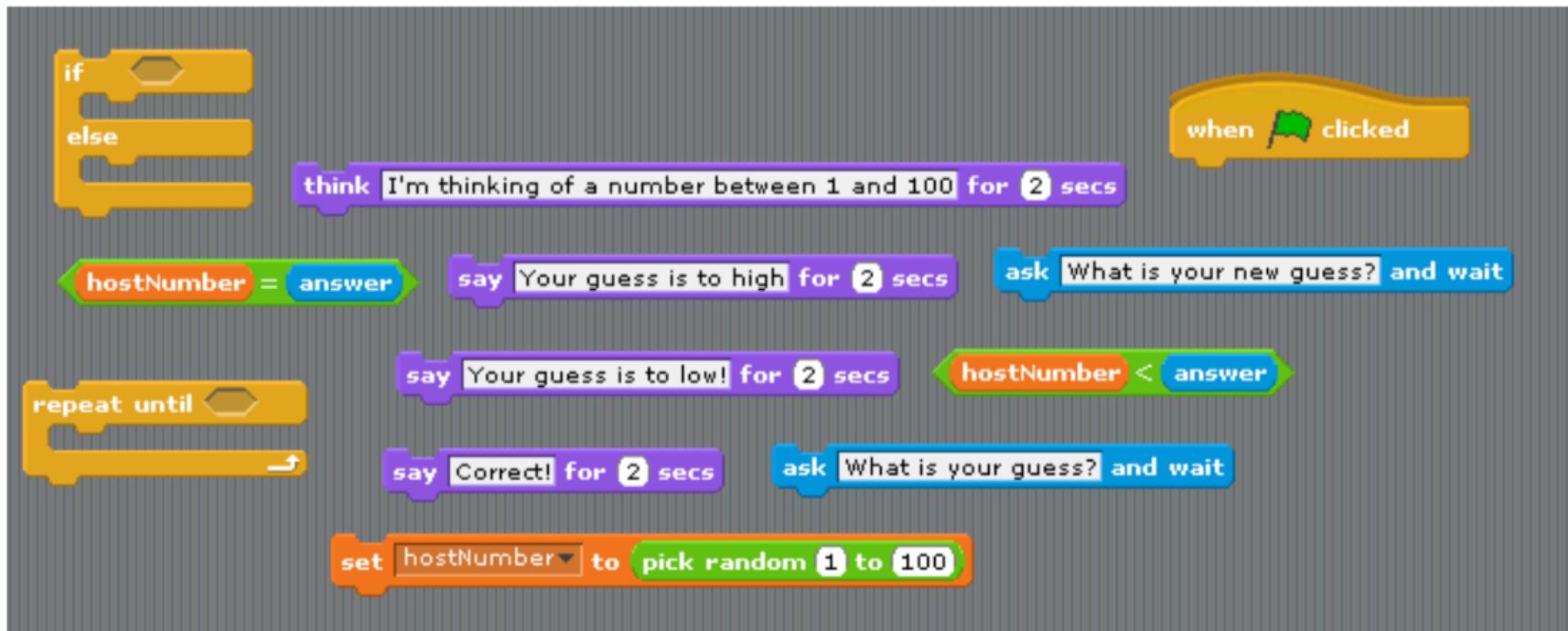


# Guessing Game

Mă gândesc la un număr între 1 și 100. Ghicește numărul din cât mai puține încercări. La fiecare încercare îți voi spune dacă numărul încercat e mai mare sau mai mic.



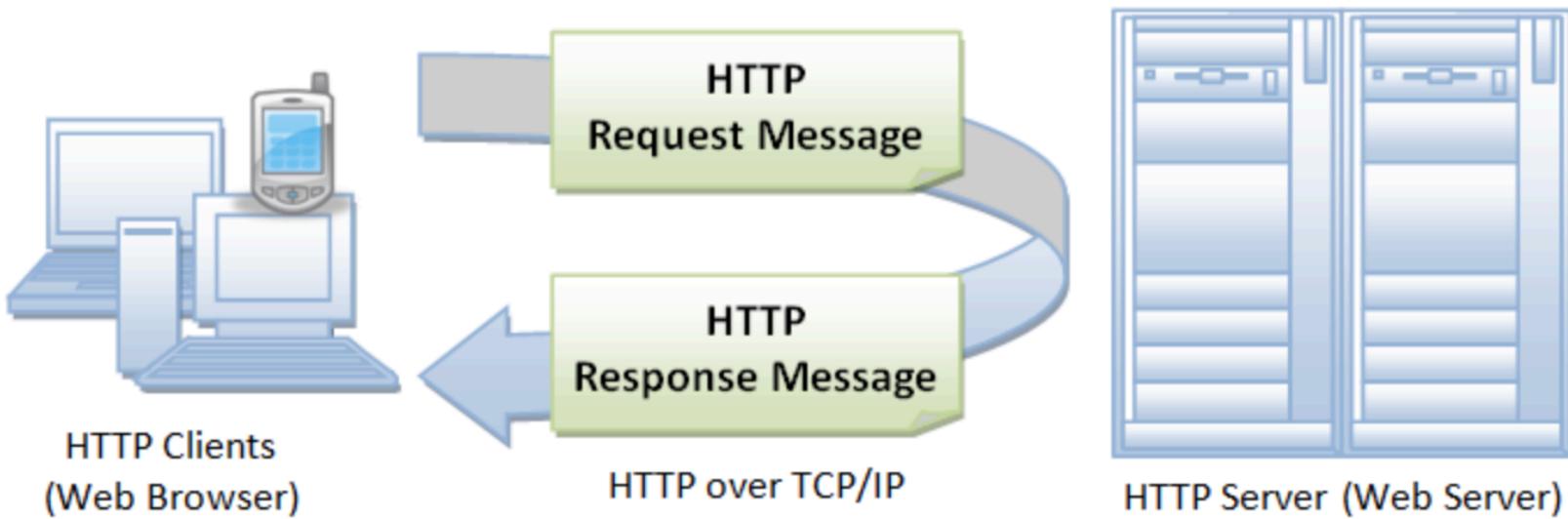
# Guessing Game



# Internetul și protocoalele

Pentru ca toate lucrurile conectate la internet să comunice între ele e nevoie ca ele să se pună de acord asupra unui protocol de comunicare (așa cum oamenii se înțeleg într-o anumită limbă). Există multe protocoale de comunicare: **HTTP, FTP, SMTP, POP, SIP**.

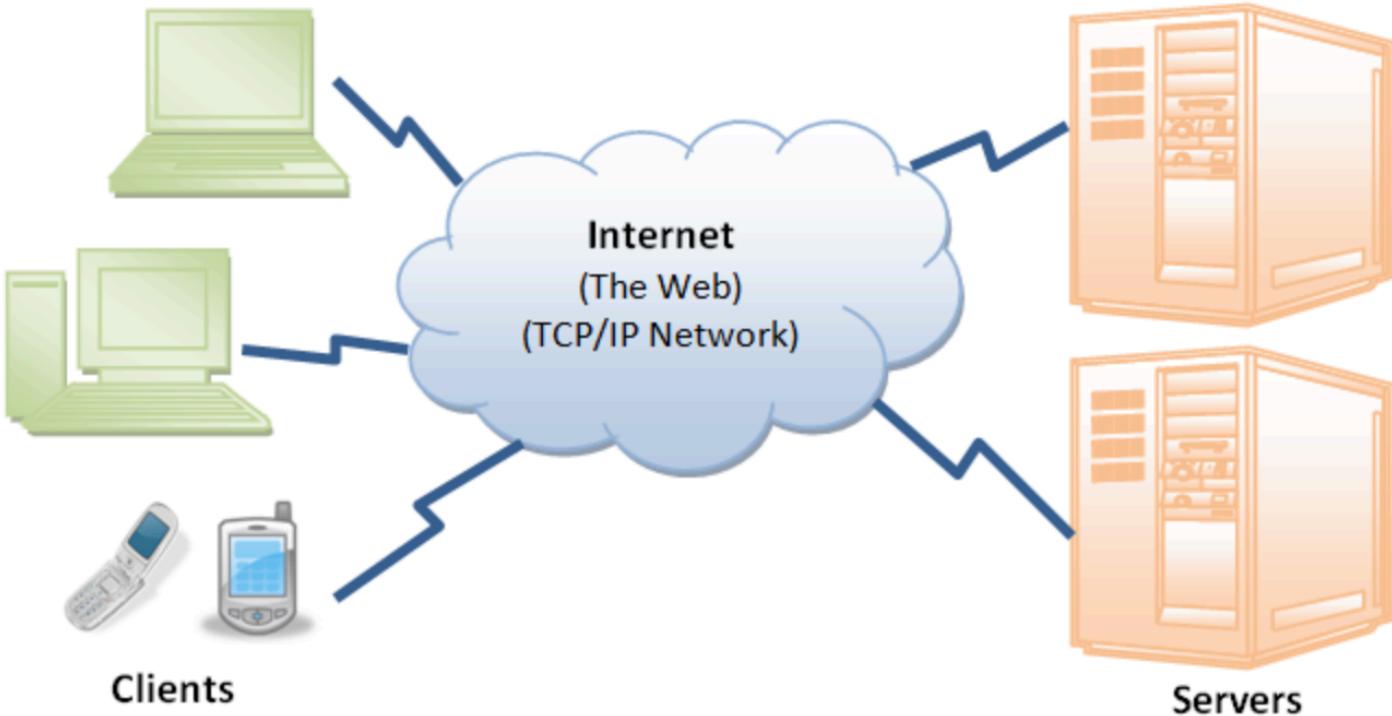
# Protocolul HTTP



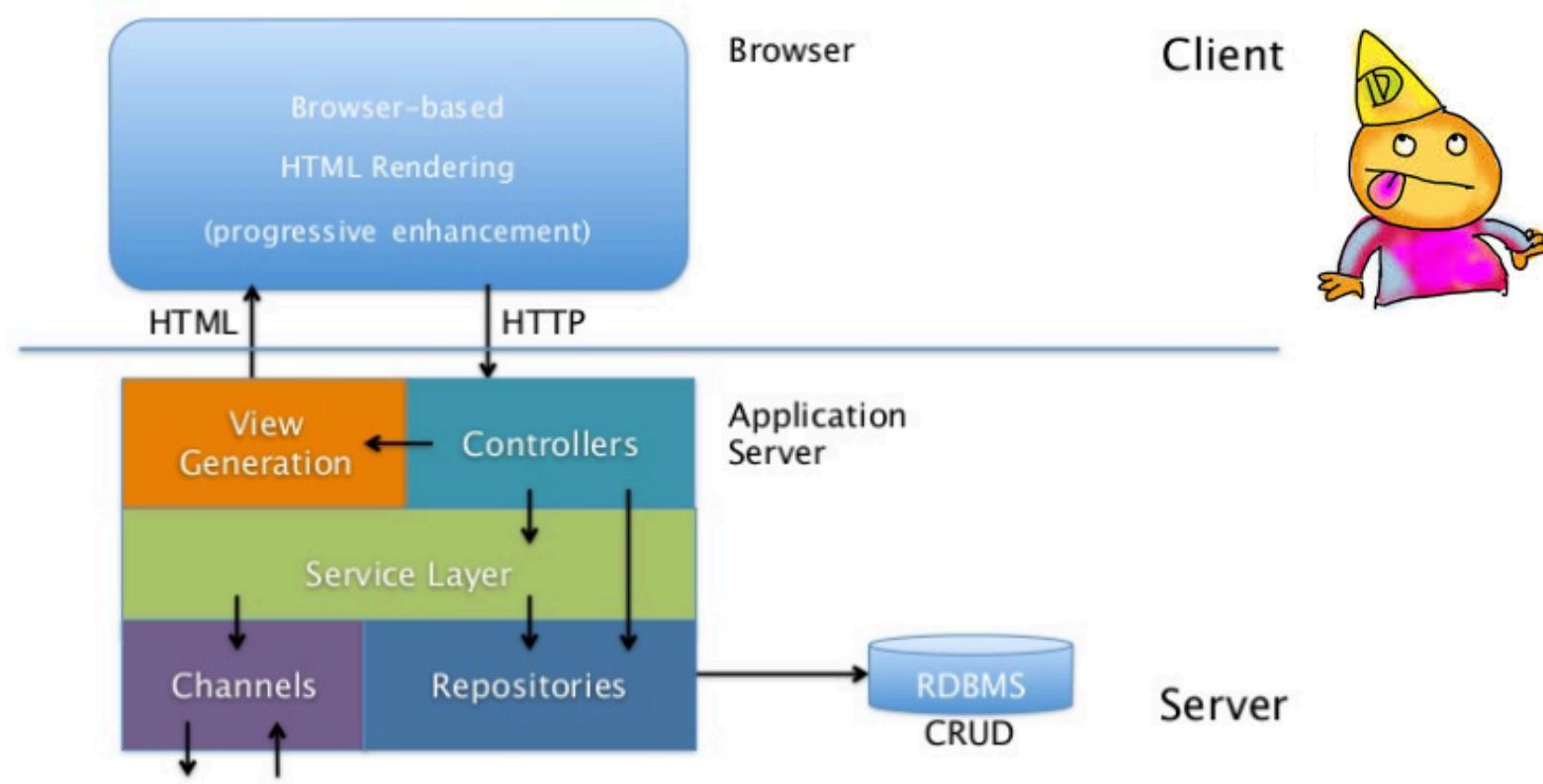
# Protocolul HTTP - Status codes

**1XX: Informational**  
**2XX: Success**  
**3XX: Redirection**  
**4XX: Client Error**  
**5XX: Server Error**

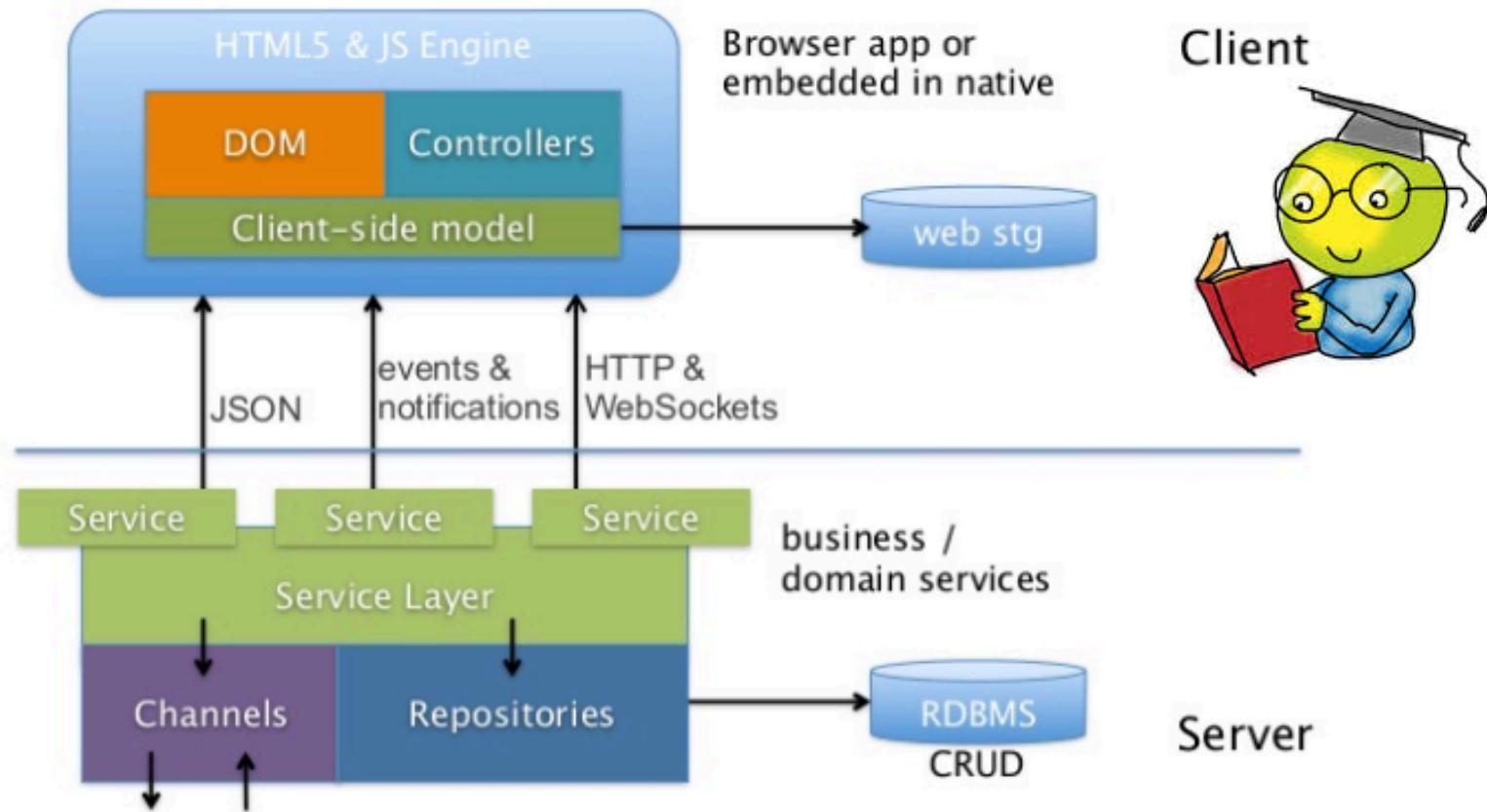
# Arhitectura client-server



# Aplicațiile Web - În antichitate



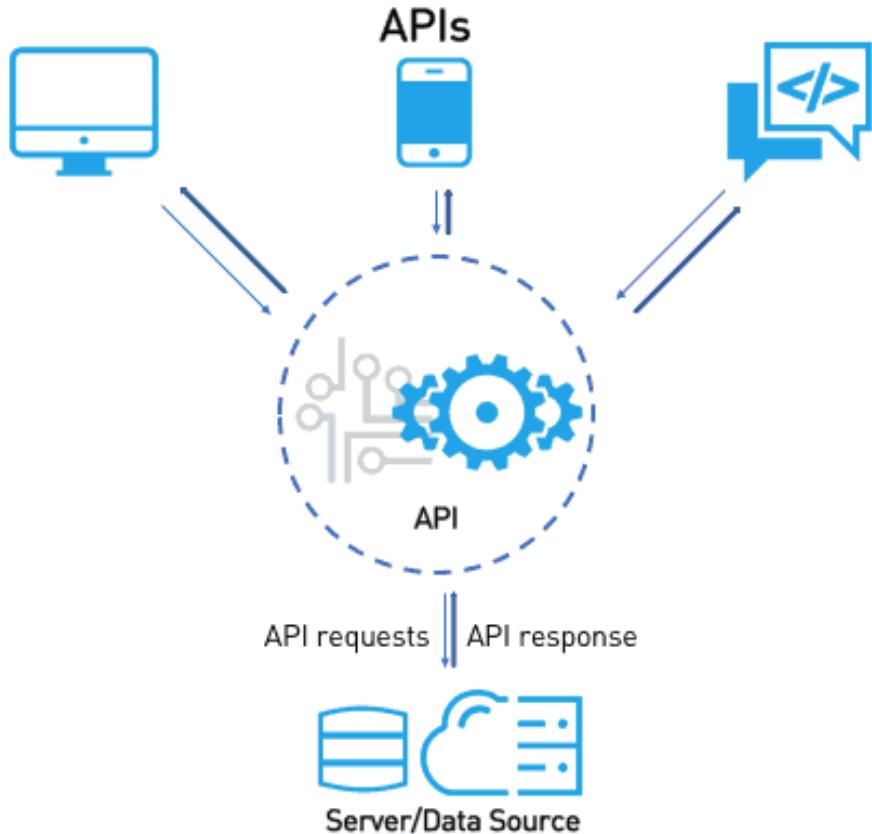
# Aplicațiile Web Moderne



# Serviciile Web

- Un **API** (Application Programming Interface) specifică cum două aplicații pot comunica între ele.
- Fiecare lucru de pe World Wide Web are în spate de o aplicație software care îl ajută să comunice cu alte lucruri.
- **Serviciile Web** definesc API-uri pentru aplicațiile din Web.
- **Serviciile Web** se bazează pe protocolul **HTTP**.

# Servicii Web



## Web service

XML/JSON/HTTP  
request



Client



XML/JSON/HTTP  
response



Internal system

# Serviciile Web

- Pentru a folosi Serviciile Web avem nevoie de două aplicații care să comunice între ele.
- Una dintre ele va fi un Server scris in Java.
- A doua aplicație va fi o aplicație de Web Browser, scrisă în HTML, CSS & **Java Script**.

# Java Script vs. Java

JAVA *is to*  
JAVASCRIPT *as*

HAM *is to*  
HAMSTER



# Java Script - Superputeri

**JavaScript** vă dă superputeri. Adevăratul limbaj de programare al browserelor web, JavaScript vă ajută să adăugați comportament dinamic paginilor web.

S-a terminat cu paginile statice, care doar stau acolo ca să le privești — cu JavaScript puteți interacționa cu utilizatorii, reacționa la evenimente cum ar fi apăsarea unui element din pagină, puteți lua date și folosi în pagina, puteți desena direct în pagina web și multe aletele.

# Java Script

JavaScript nu este doar **cel mai popular** limbaj de programare în acest moment, este de asemenea **suportat** pe toate browserele moderne (și cele mai antice); JavaScript devine un limbaj universal care este din ce în ce mai folosit pentru a crea **aplicații în afara browserului**.



# Java Script

JavaScript s-a transformat de curând într-un limbaj de programare general folosit de la aplicații grafice, jocuri până la aplicații muzicale și chiar server-side. Dacă învățați JavaScript veți putea face o grămadă de lucruri cu el în viitor, nu doar pagini web.

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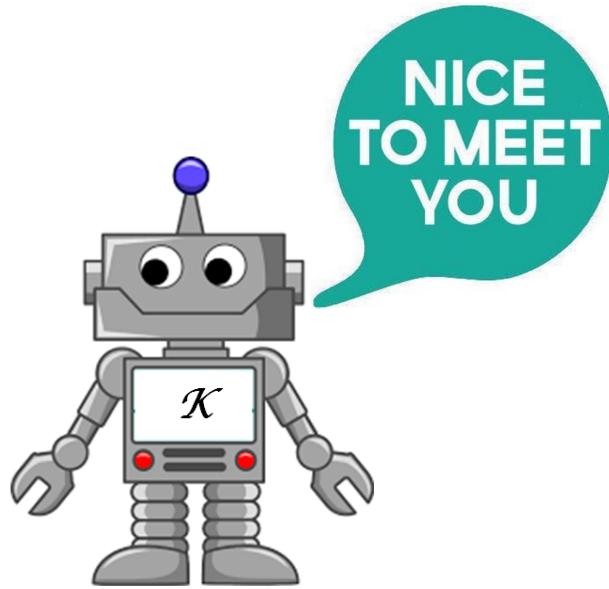
# Java Script



Any application that can be written in JavaScript,  
will eventually be written in JavaScript.

*Jeff Atwood, 2007*

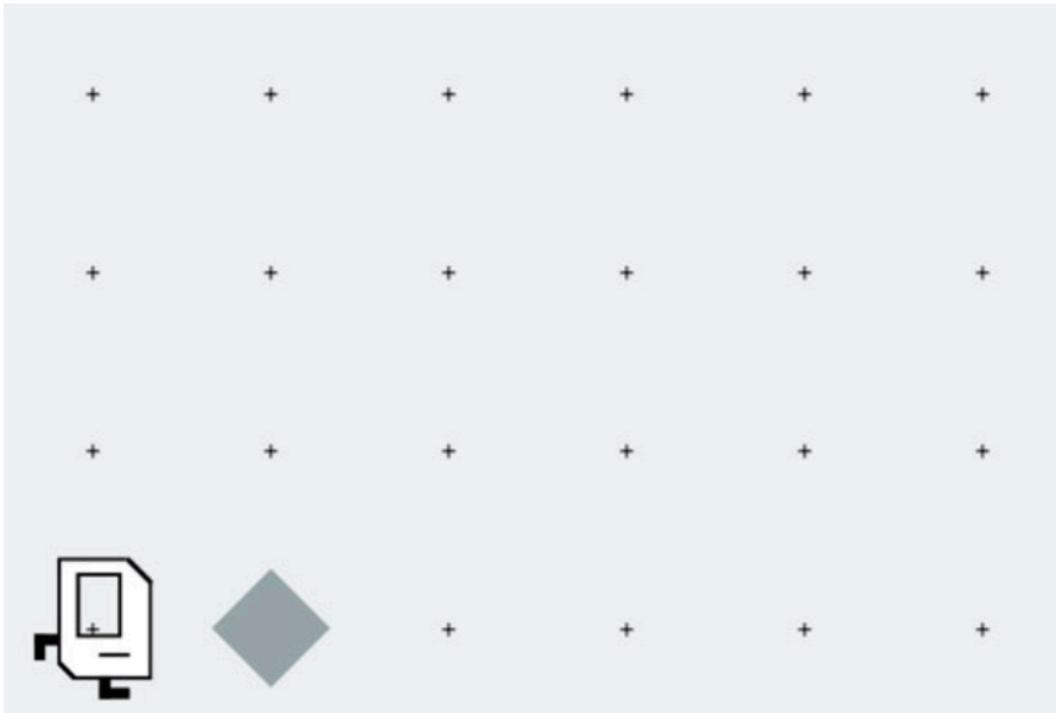
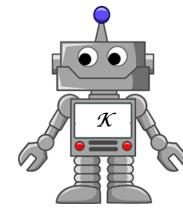
# Robotul Karel



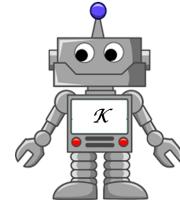
<https://karel.herokuapp.com/>

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# Robotul Karel



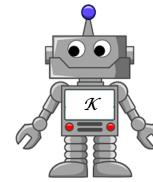
# Robotul Karel - Instrucțiuni



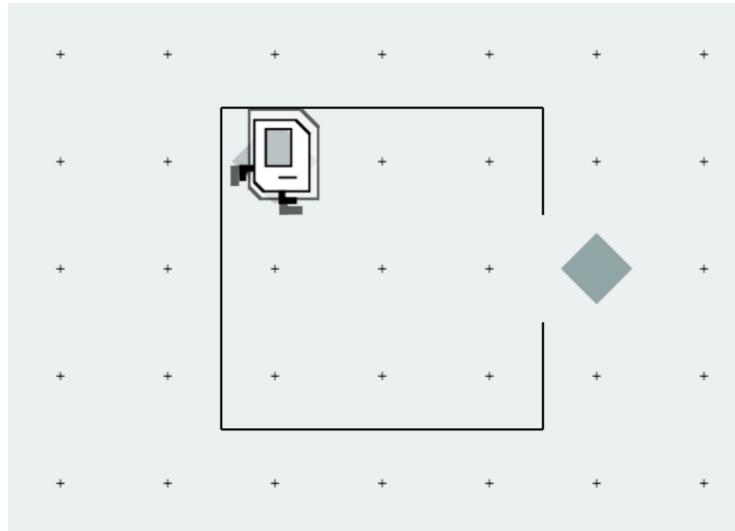
```
this.move();           // moves 1 unit forward
this.turnLeft();       // turns to the left 90 degrees
this.pickBeeper();    // picks up 1 beeper and puts in bag
this.putBeeper();     // puts 1 beeper down

frontIsClear();        // returns true if front is not blocked
frontIsBlocked();      // returns true if front is blocked
beepersPresent();     // returns true if standing on a beeper
facingNorth();         // returns true if facing north
facingSouth();         // returns true if facing south
facingEast();          // returns true if facing east
facingWest();          // returns true if facing west
beepersInBag();        // returns true if there are any beepers in bag
```

# Exercițiul 1 - Karel

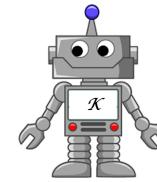


- Karel trebuie să ia ziarul din fața casei sale și apoi să se întoarcă înapoi.



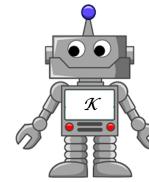
<https://karel.herokuapp.com/#problem-1-1>

# Exerciții - Karel



1. Întoarce-te la dreapta (turnRight)
2. Întoarce-te înapoi (turnBack)
3. Mergi până la prima margine a lumii
4. Fă înconjurul lumii

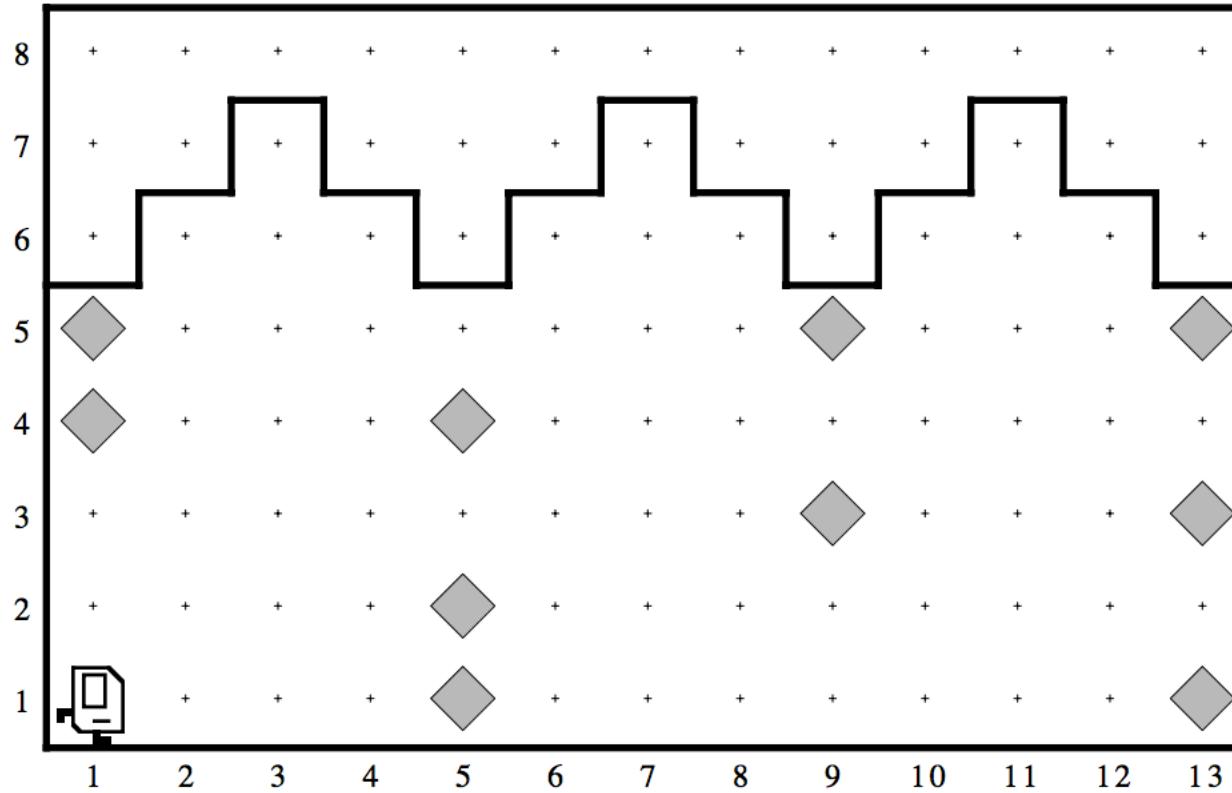
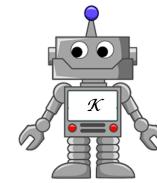
# Exercițiul 2 - Karel



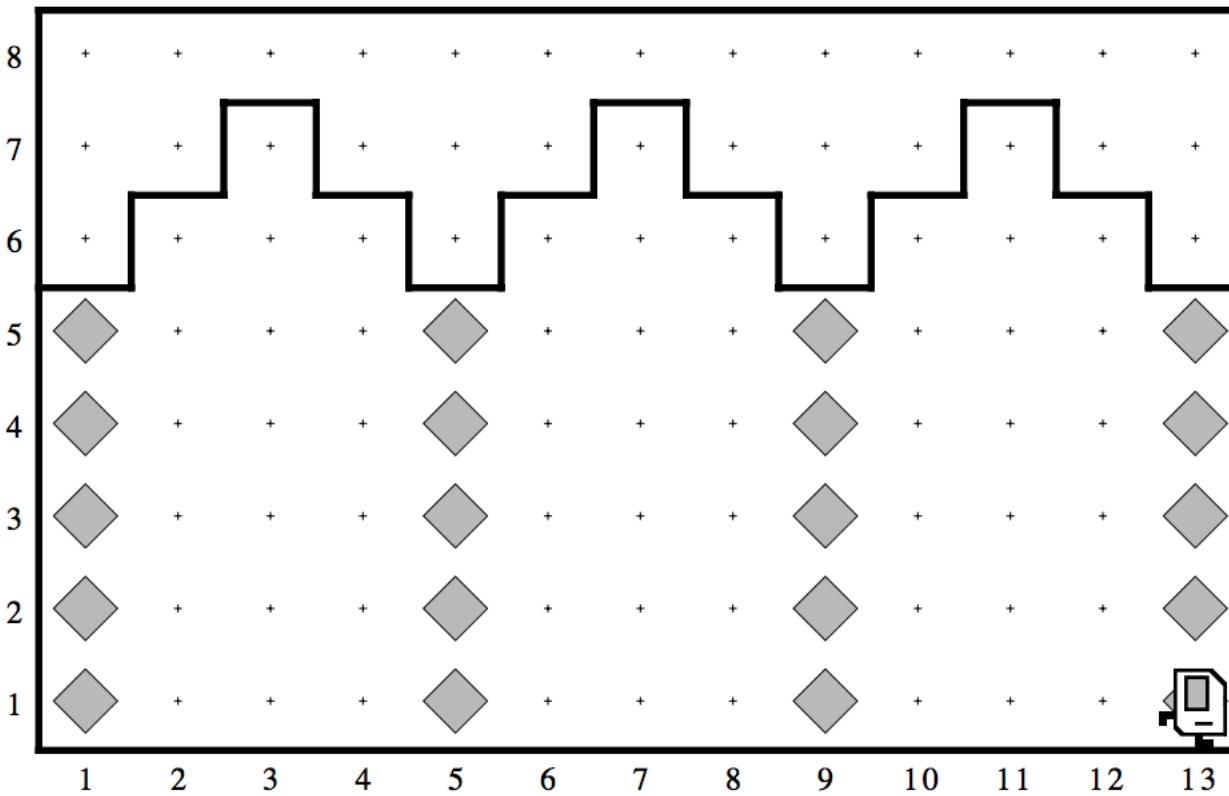
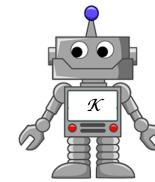
- Karel a fost angajat să repare o clădire avariată de un cutremur. În special, Karel va repară niște arcade din care câteva pietre (reprezentate de beepere, evident) lipsesc. Coloanele sunt exact la patru pași distanță unele de celelalte. Sfârșitul coloanelor e marcat de un zid imediat după ultima coloană.

<https://karel.herokuapp.com/#problem-1-2>

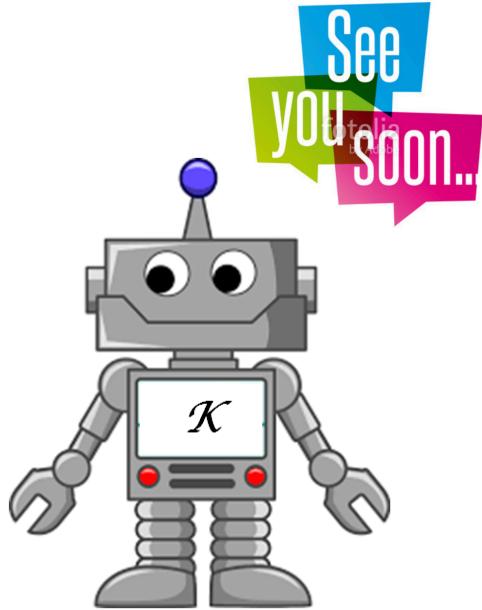
# Exerciții - Karel



# Exerciții - Karel



# Robotul Karel

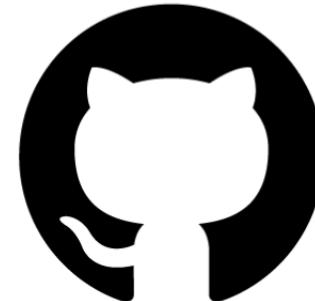


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# Versionarea codului



git

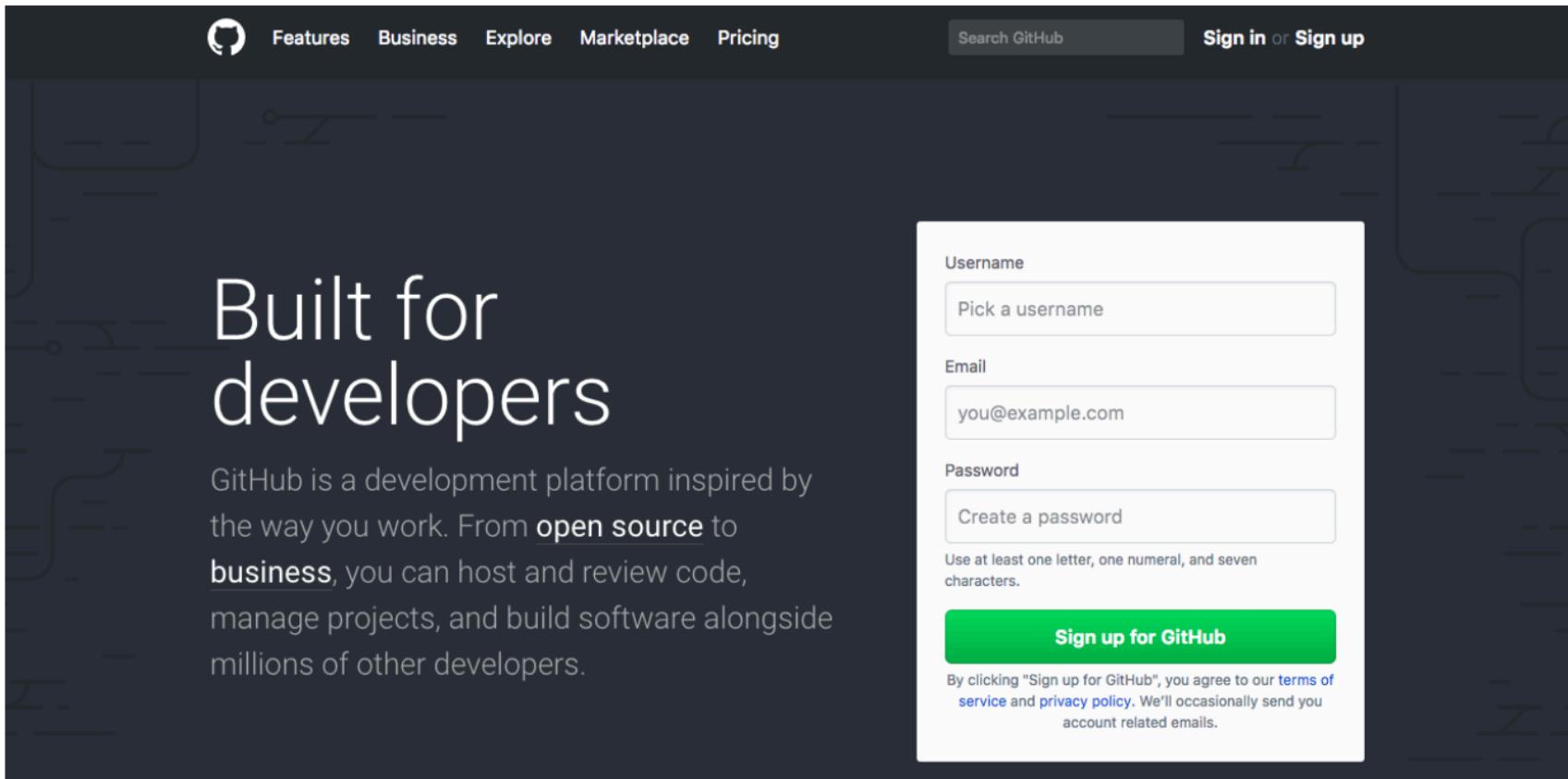


GitHub

# Versionarea codului

- Instalați GIT
- Creați un cont de GitHub
- Creați un proiect Git pe GitHub
- Creați o clonă locală a proiectului
- Modificați codul
- Faceți commit și push

<https://github.com/>

A screenshot of the GitHub homepage. The top navigation bar includes links for Features, Business, Explore, Marketplace, and Pricing, along with a search bar and sign-in options. The main content area features a large heading "Built for developers" and a descriptive paragraph about GitHub's purpose. A prominent sign-up form is overlaid on the right side, containing fields for Username, Email, and Password, with a "Sign up for GitHub" button at the bottom.

Built for developers

GitHub is a development platform inspired by the way you work. From **open source** to **business**, you can host and review code, manage projects, and build software alongside millions of other developers.

Username

Email

Password  
  
Use at least one letter, one numeral, and seven characters.

**Sign up for GitHub**

By clicking "Sign up for GitHub", you agree to our [terms of service](#) and [privacy policy](#). We'll occasionally send you account related emails.

The screenshot shows the GitHub homepage. At the top, there is a navigation bar with the GitHub logo, a search bar labeled "Search GitHub", and links for "Pull requests", "Issues", "Marketplace", and "Explore". On the far right of the header is a user profile icon with a dropdown arrow and a small "X" button. Below the header, a large central area features the text "Learn Git and GitHub without any code!" in bold. A subtext below it reads: "Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request." Two buttons are present: a green "Read the guide" button and a white "Start a project" button.

The screenshot shows the GitHub dashboard. At the top left, there are two buttons: "Browse activity" and "Discover repositories". To the right, a notification box displays a broadcast titled "Introducing Teletype for Atom: Code collaboratively in real time" with a blue "A" icon. Below this, a link says "View 17 new broadcasts". In the center, a dashed box contains the text: "Discover interesting projects and people to populate your personal news feed." Below this text is a paragraph: "Your news feed helps you keep up with recent activity on repositories you [watch](#) and people you [follow](#)." At the bottom of this section is a blue "Explore GitHub" button. To the right, there is a "Your repositories" section showing one repository. A red box highlights the "New repository" button. Below it is a search bar with "Find a repository..." placeholder text and a filter bar with tabs: "All" (which is selected), "Public", "Private", "Sources", and "Forks".

## Create a new repository

A repository contains all the files for your project, including the revision history.

Owner



daniel820710 ▾

Repository name

MyRepository



Great repository names are short and memorable. Need inspiration? How about [laughing-octo-waffle](#).

Description (optional)



Public

Anyone can see this repository. You choose who can commit.



Private

You choose who can see and commit to this repository.



Initialize this repository with a README

This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: **None** ▾

Add a license: **None** ▾



**Create repository**

This repository Search Pull requests Issues Marketplace Explore + ⌂ ⌂

daniel820710 / MyRepository Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

No description, website, or topics provided. Edit Add topics

1 commit 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

daniel820710 Initial commit Latest commit f743192 42 minutes ago

README.md Initial commit 42 minutes ago

README.md

# MyRepository

2 branches 0 releases 1 contributor

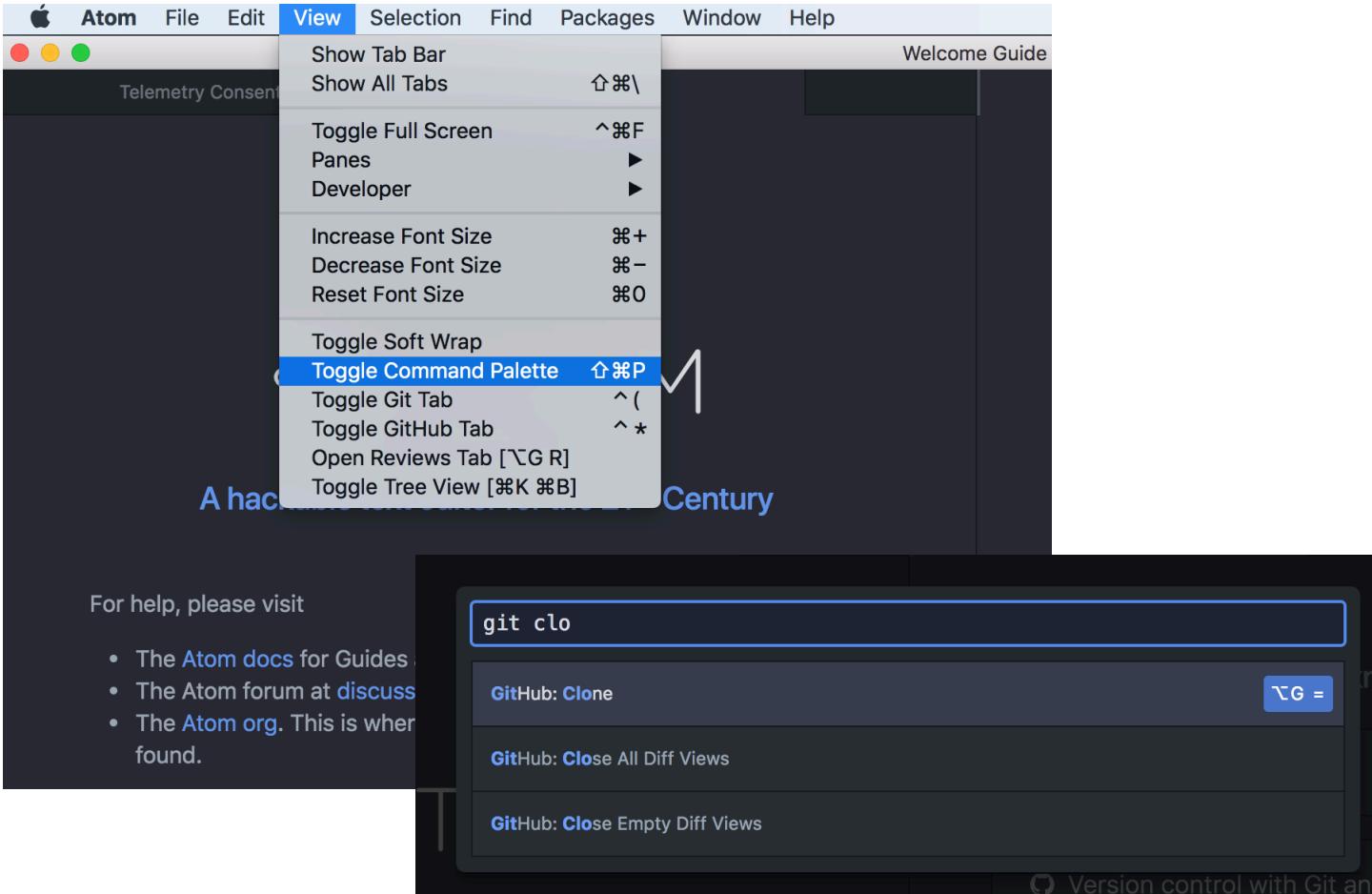
Create new file Upload files Find file Clone or download ▾

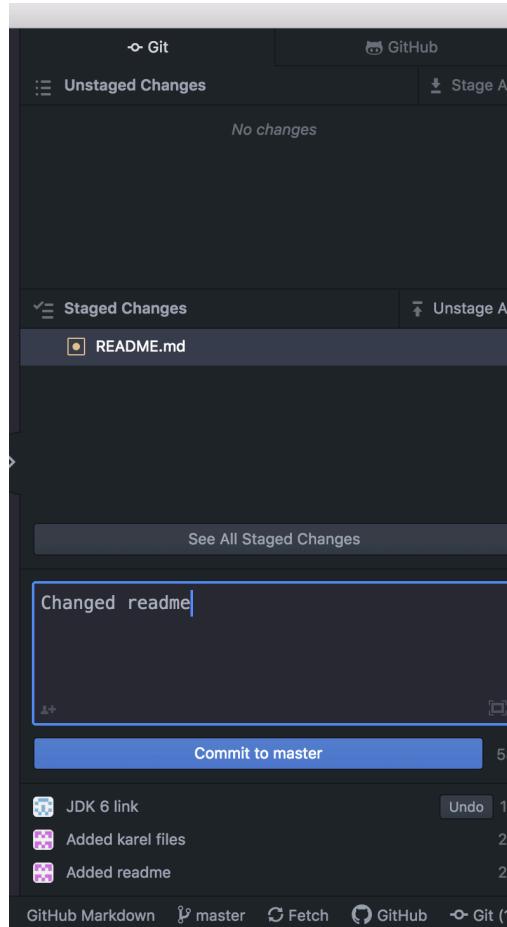
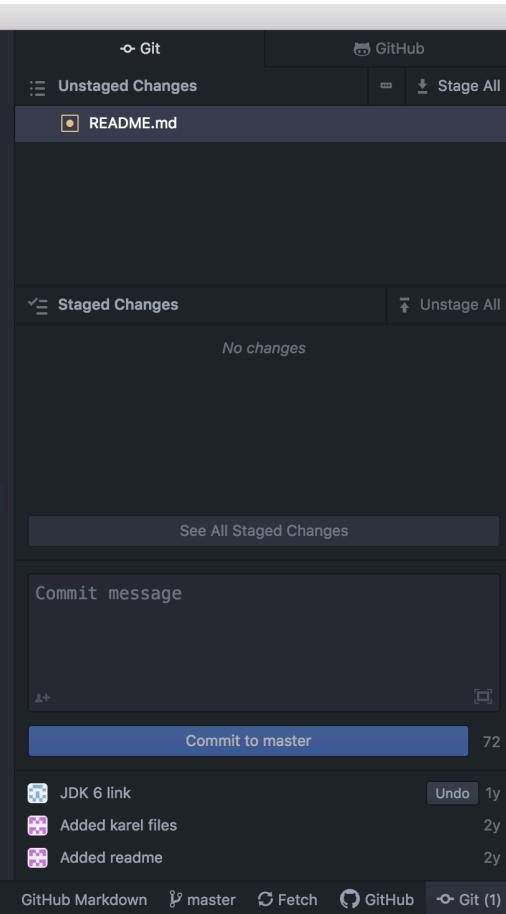
daniel820710/debugger ...

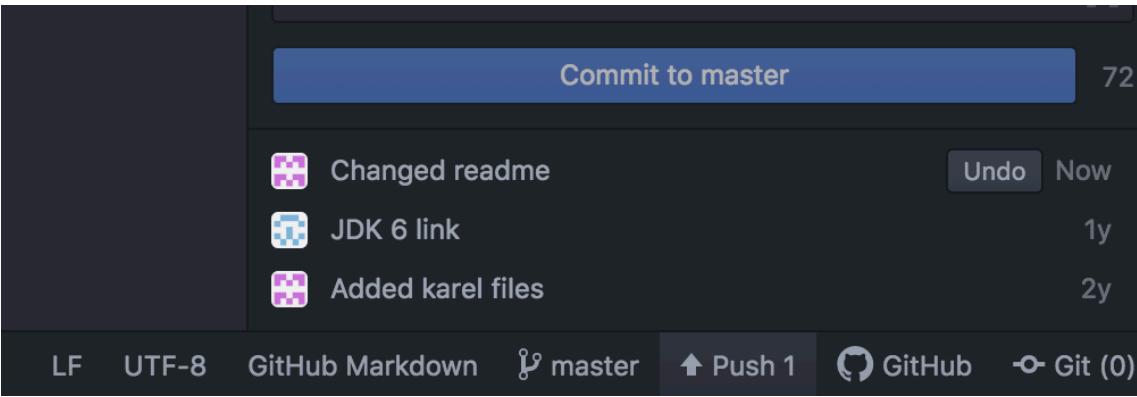
Update README.md

Clone with HTTPS ? Use SSH  
Use Git or checkout with SVN using the web URL.  
<https://github.com/daniel820710/MyRepo> 

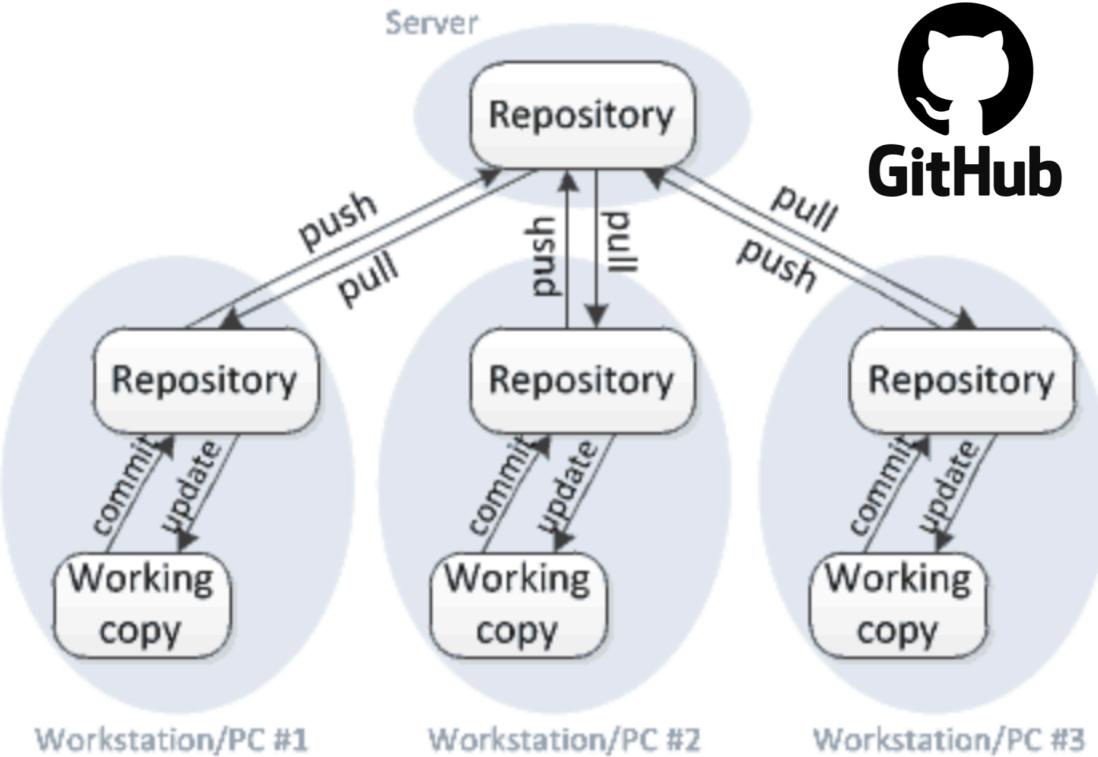
[Open in Desktop](#) [Download ZIP](#)

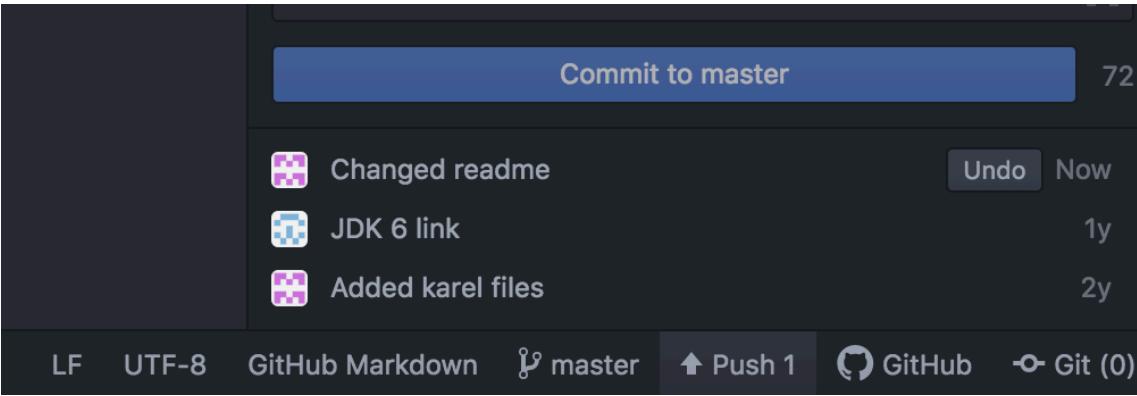




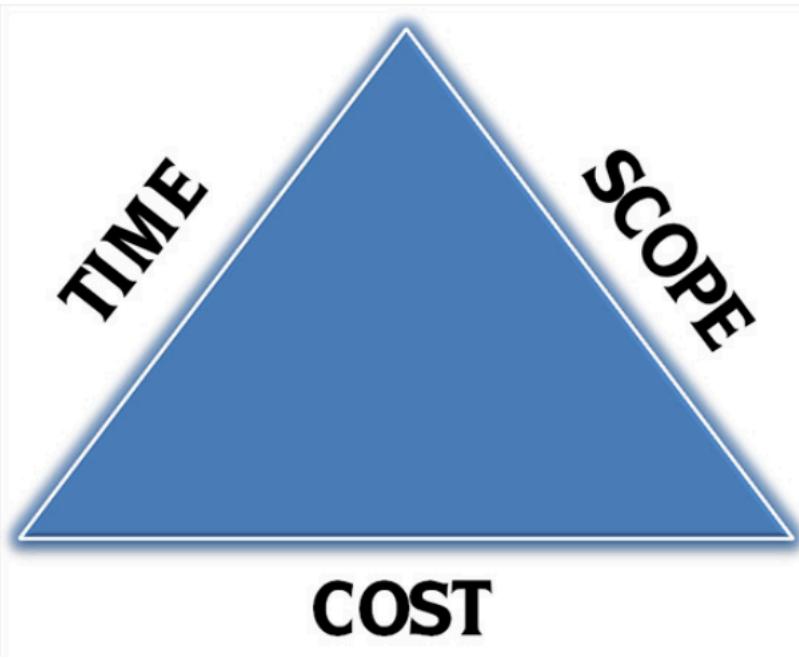


# Distributed version control

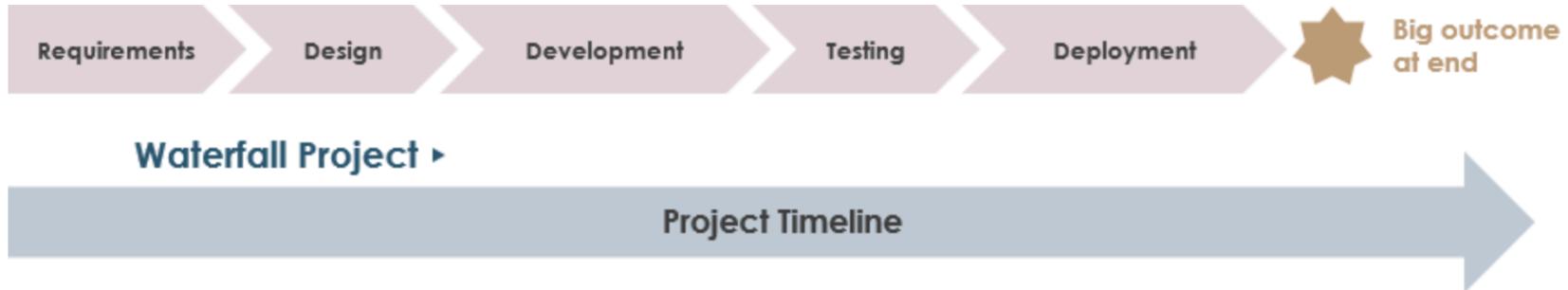




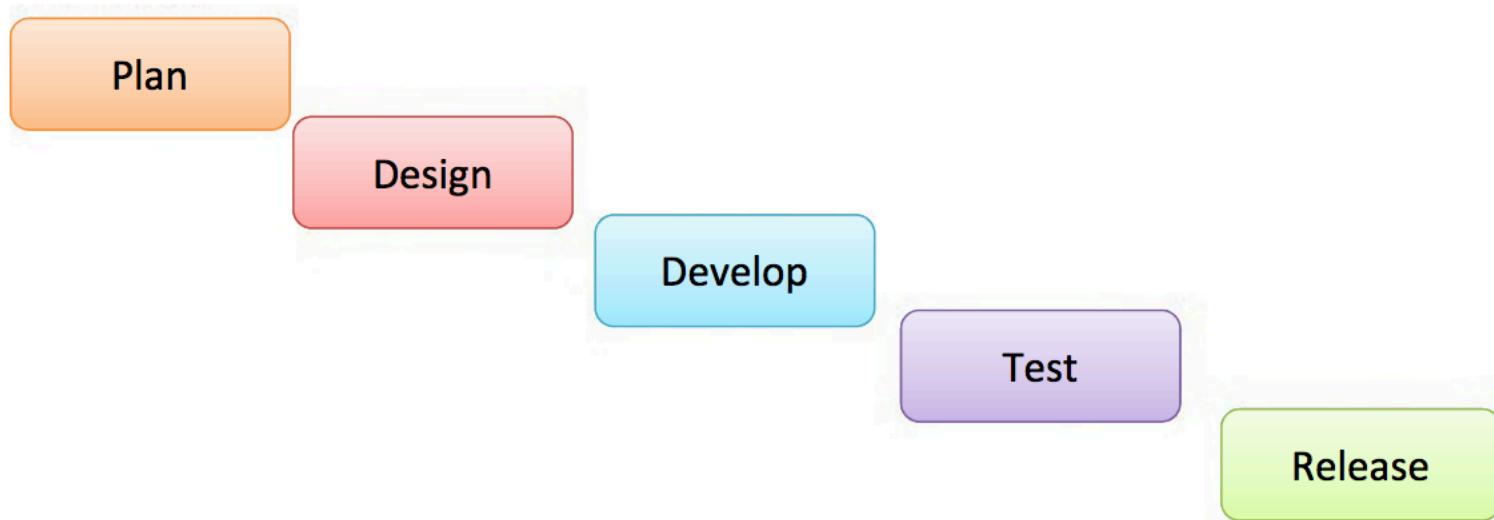
# Project Management



# Ciclul unui proiect

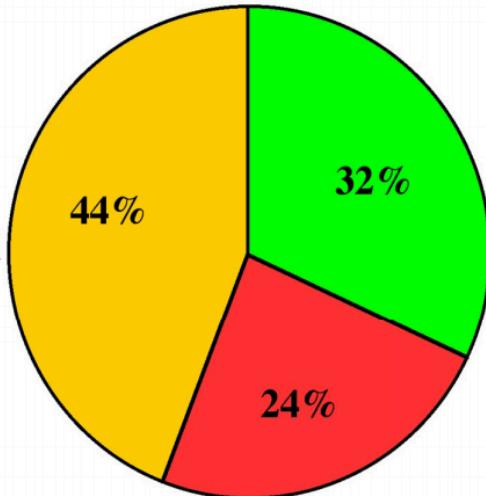


# Ciclul unui proiect



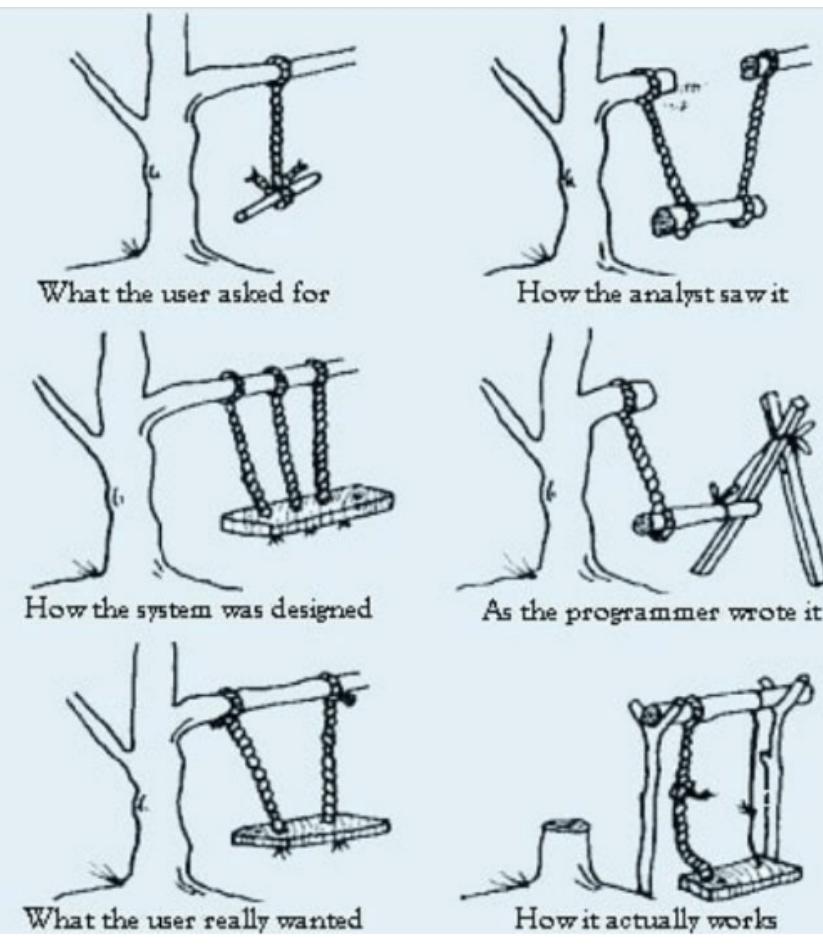
# Toate proiectele au succes?

**Challenged** = late,  
overbudget, and/or  
withless than the required  
features and functions

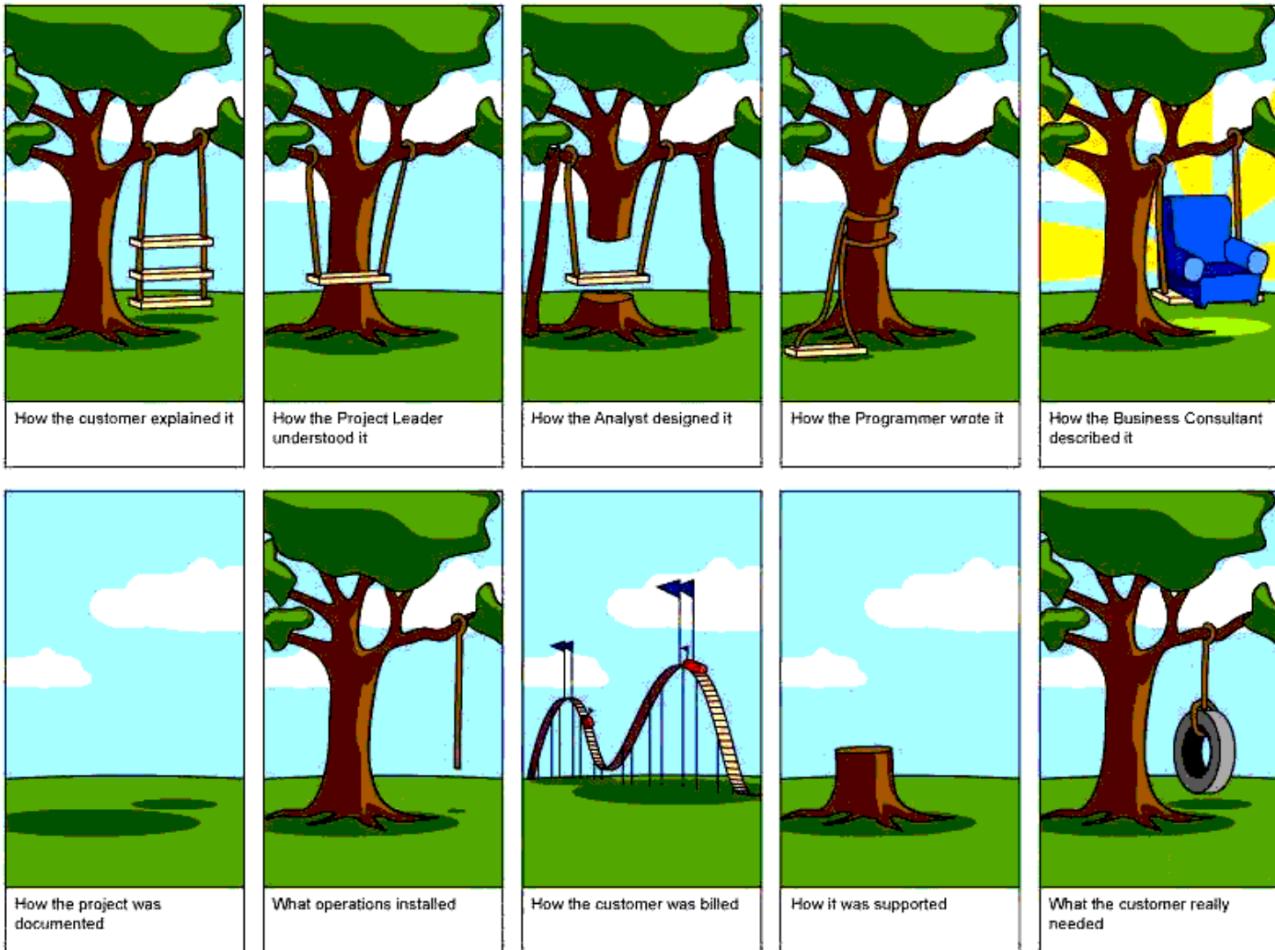


**Successful** = delivered on time,  
on budget, with required  
features and functions

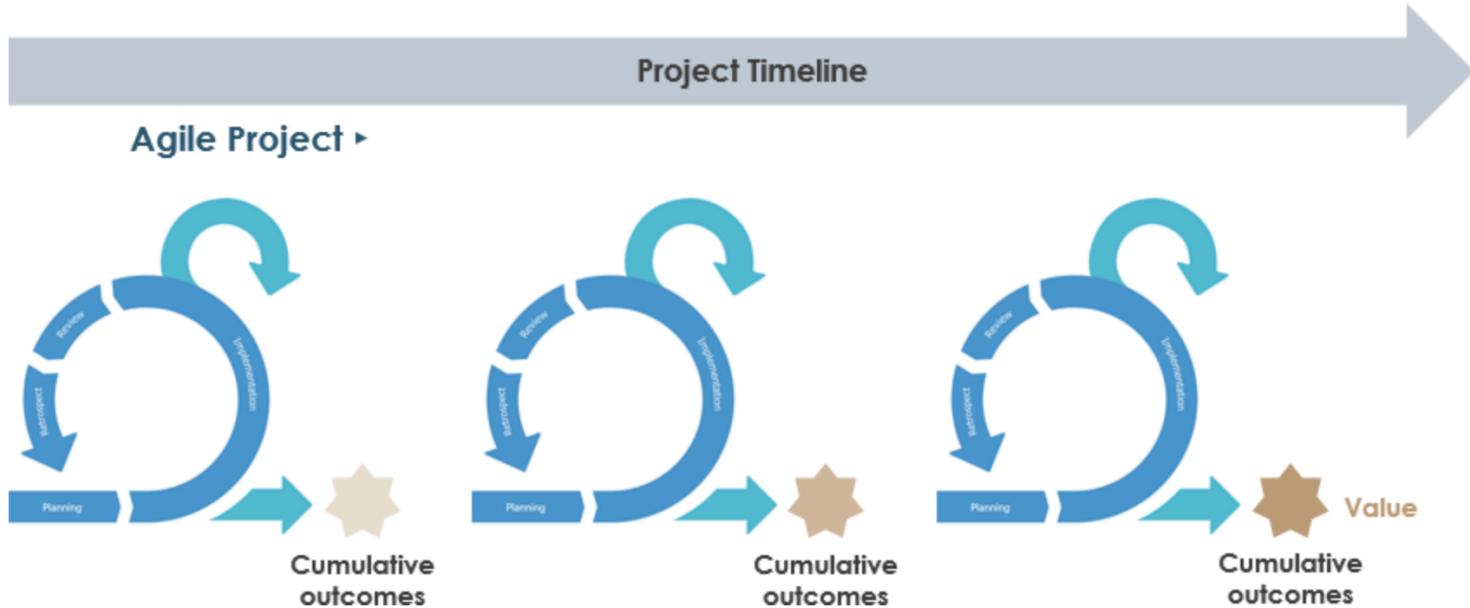
**Failed** = cancelled prior  
to completion or  
delivered and never used



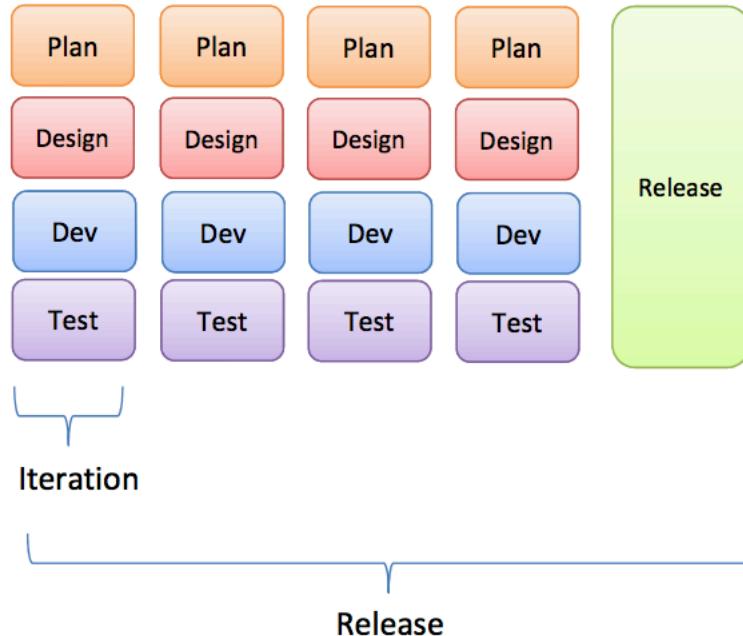
True story



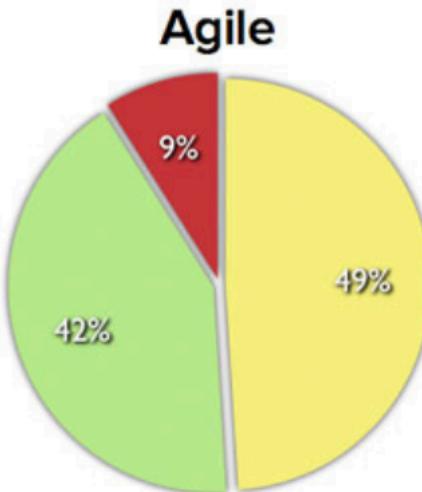
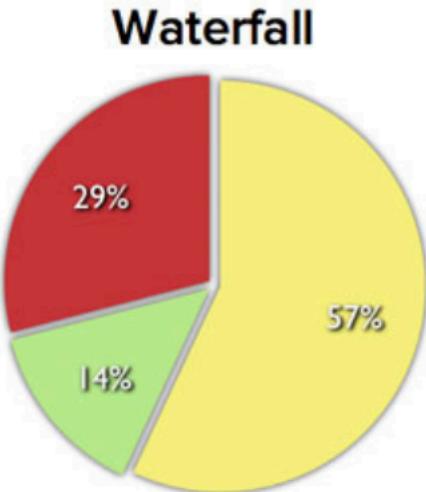
# Agile Project



# Ciclul unui proiect Agile



# Agile Project



- Successful
- Challenged
- Failed



Photo: Felicity Aston

# “Pass the penny” game

# Pass the Penny Game



Scrum Penny Batch Exercise

# Joc de Planificare

Vreți să faceti un nouă aplicație (ex:  
un site de rezervări online)

Împărțiți site-ul în mai multe părți  
(funcționalități)  
Ordonați-le apoi după prioritate

# Felicitări!



*LINKAcademy*