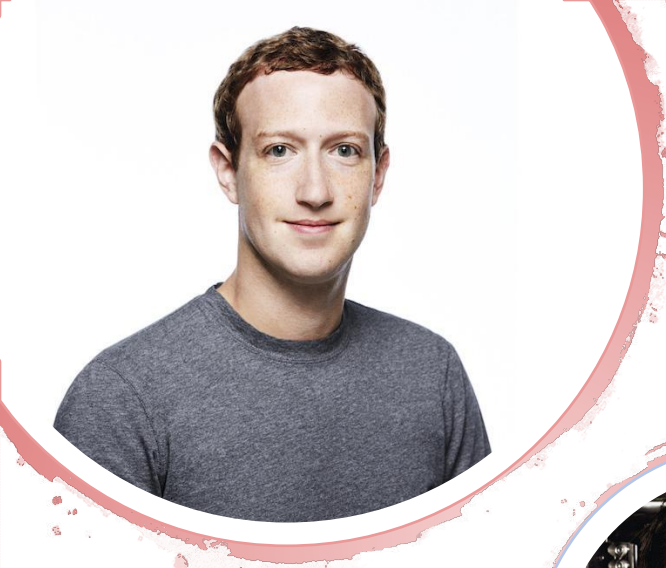
Bem vindas

Curso Introdução à Programação

Quem Somos?

Girls Support Girls
UFMG



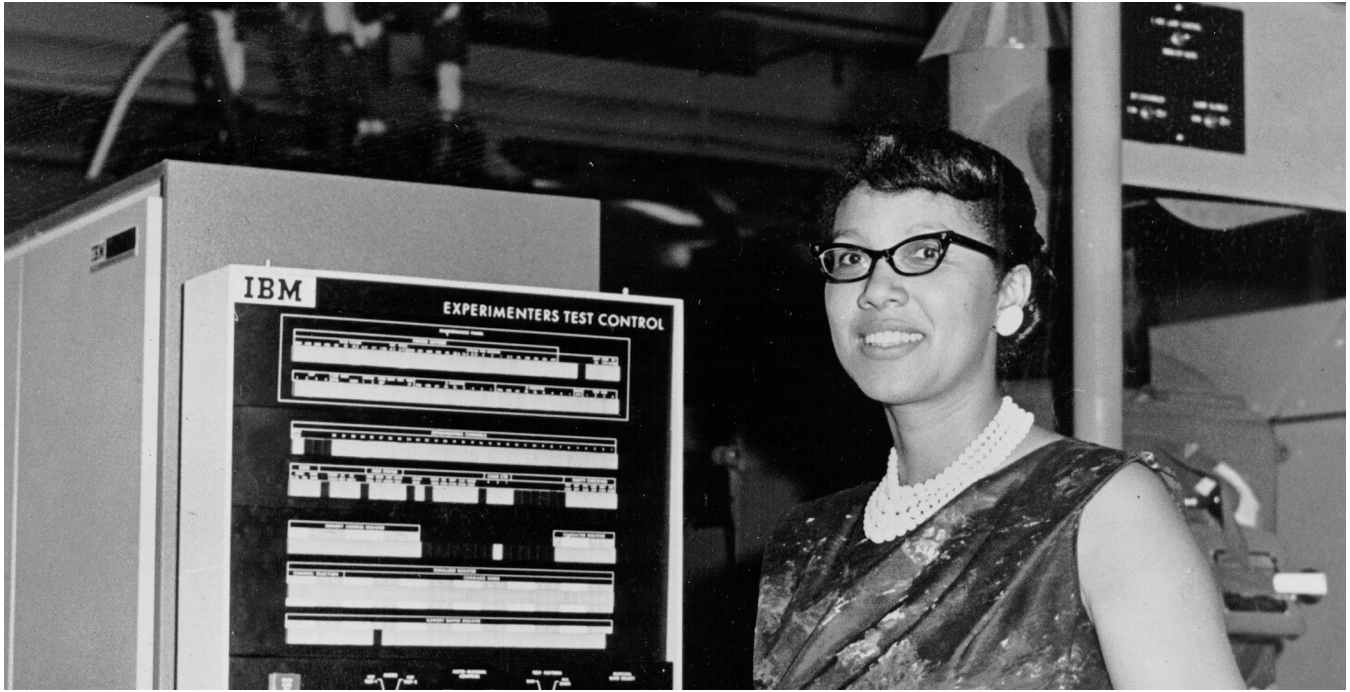
Você conhece essas pessoas?



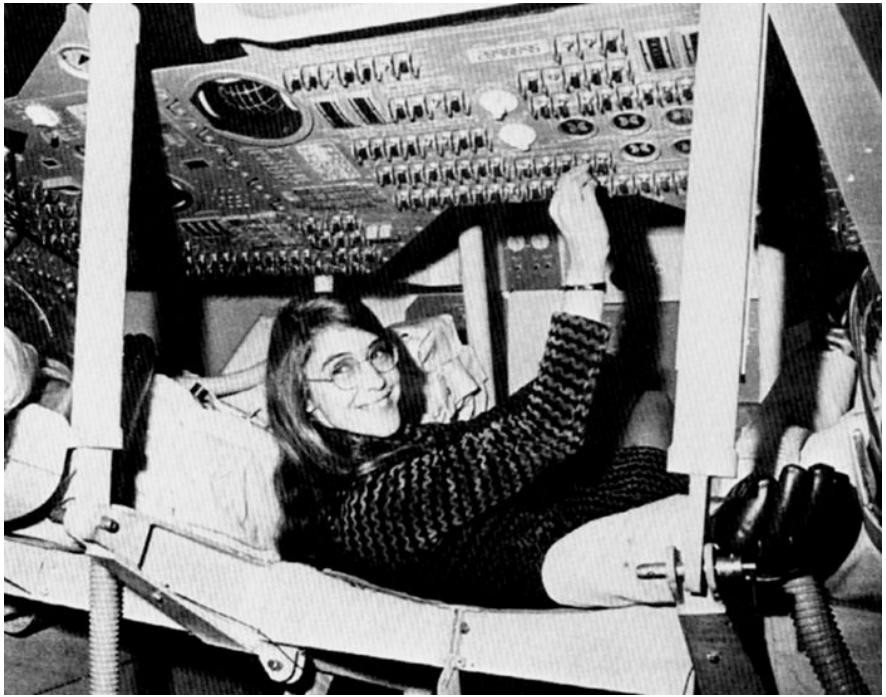
E essas?

A primeira programadora...

Ada Augusta Byron King: A primeira mulher que veio para mudar a inclusão destas na informática foi uma inglesa no século XIX.

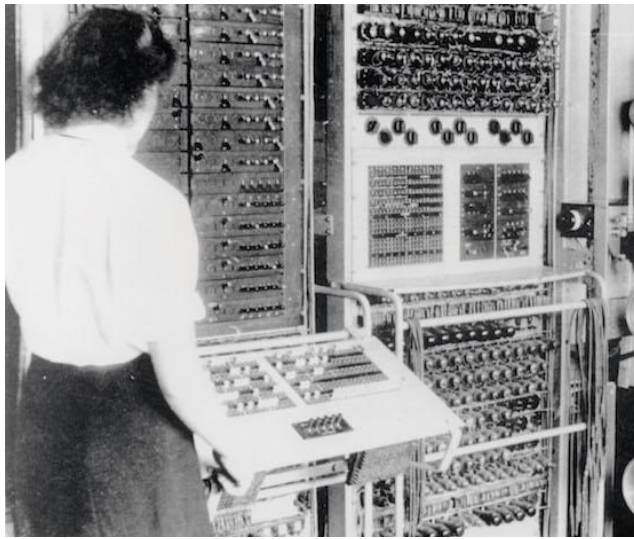


Dorothy Vaughan
líder da seção de programação da Divisão de Análise e Computação da NASA



Margareth Hamilton
Líder de programação dos projetos Apollo e Skylab (NASA)

Grace Hopper
Analista de sistemas da Marinha dos EUA



The Computer Girls

BY LOIS MANDEL

A trainee gets $8,000 a year ...a girl "senior systems analyst" gets $20,000—and up!

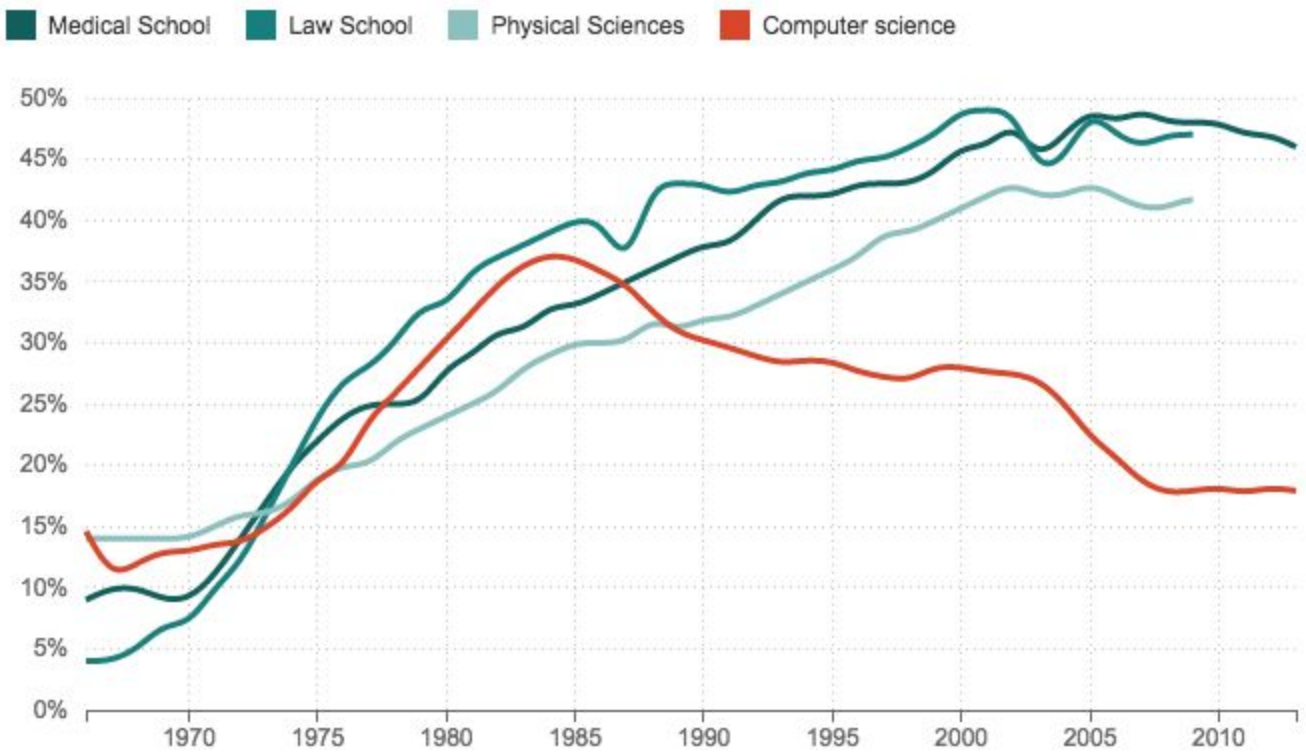
Twenty years ago, a girl could be a secretary, a school teacher . . . maybe a librarian, a social worker or a nurse. If she was really ambitious, she could go into the professions and compete with men . . . usually working harder and longer to earn less pay for the same job.

Now have come the big, dazzling computers—and a whole new kind of work for women: programming. Telling the miracle machines what to do and how to do it. Anything from predicting the

computer ca
instruct the
"It's just
plains Dr.
scientist in
Univac. (Sh
electronic di
1946.) "You
schedule ever
need it. Pro
and the abil
are 'naturals

What Happened To Women In Computer Science?

% Of Women Majors, By Field



Source: National Science Foundation, American Bar Association, American Association of Medical Colleges

Credit: Quoctrung Bui/NPR

Hua Wu
Responsável pelos principais avanços em tradução automática e linguística computacional

Frances Allen
Recebeu o Turing Award, o mais importante prêmio da computação, aos 74 anos, pelo seu trabalho em otimização e computação paralela.

Timnit Gebru
Reconhecida pelo seu estudo sobre algoritmos de inteligência artificial que reproduzem preconceitos

Dúvidas mais comuns sobre programação ...

O QUE PRECISO SABER PARA COMEÇAR A PROGRAMAR?

O QUE VOU APRENDER NO CURSO?

QUE TIPOS DE PROGRAMAS VOU FAZER?

QUAL LINGUAGEM E PROGRAMAS VAMOS UTILIZAR PARA PROGRAMAR?

VOU SAIR DO CURSO SABENDO FAZER UM APLICATIVO?

VOU APRENDER A FAZER MEU SITE HOJE?

VOU SAIR DAQUI UMA DESENVOLVEDORA WEB?

O que é um programa? O que é um algoritmo?

UM PROGRAMA É CONJUNTO DE INSTRUÇÕES, EXPRESSÕES OU DADOS REGISTRADOS NUM SUPORTE E NECESSÁRIOS PARA A EXECUÇÃO DE UMA SÉRIE DE DETERMINADAS OPERAÇÕES, PEDIDAS A UM COMPUTADOR.

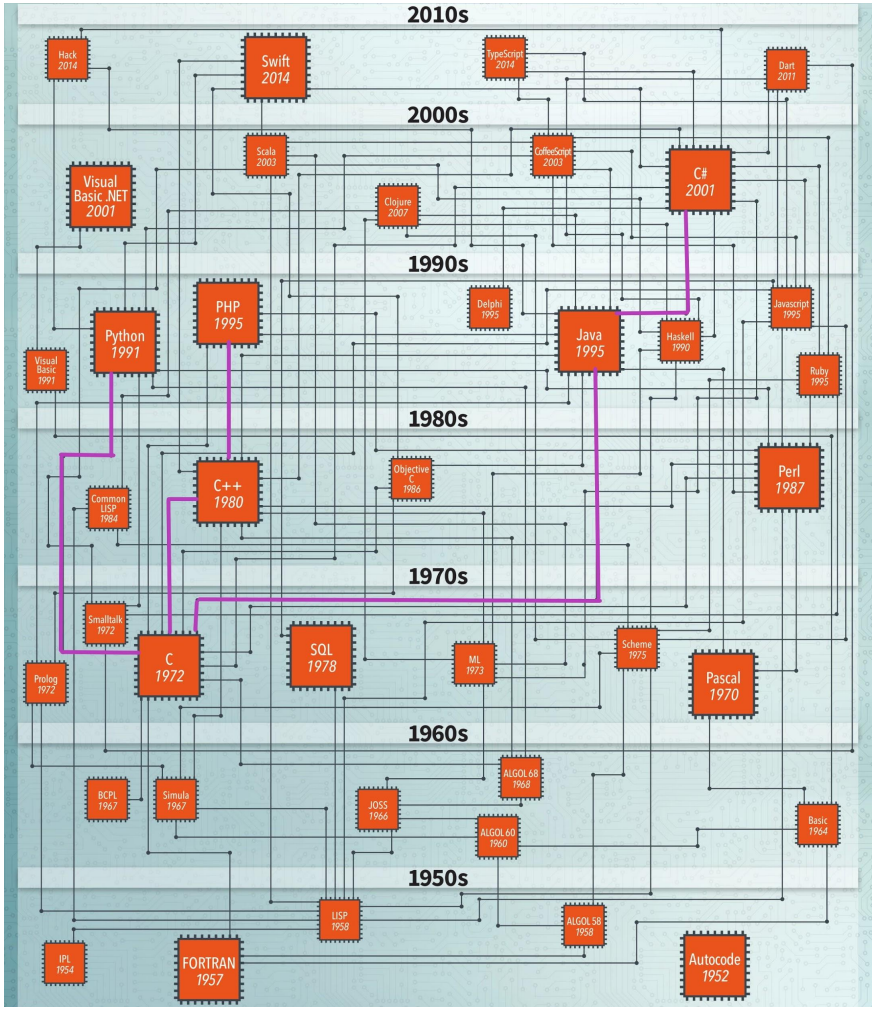
UM ALGORITMO É UM CONJUNTO FINITO DE REGRAS QUE DEFINE UMA SEQUÊNCIA ESTRITA DE OPERAÇÕES. UM PASSO A PASSO A SER SEGUIDO PARA QUE DETERMINADA OPERAÇÃO SEJA SATISFEITA.

LINGUAGENS DE PROGRAMAÇÃO ATUAIS TÊM ESTRUTURAS MUITO PARECIDAS.

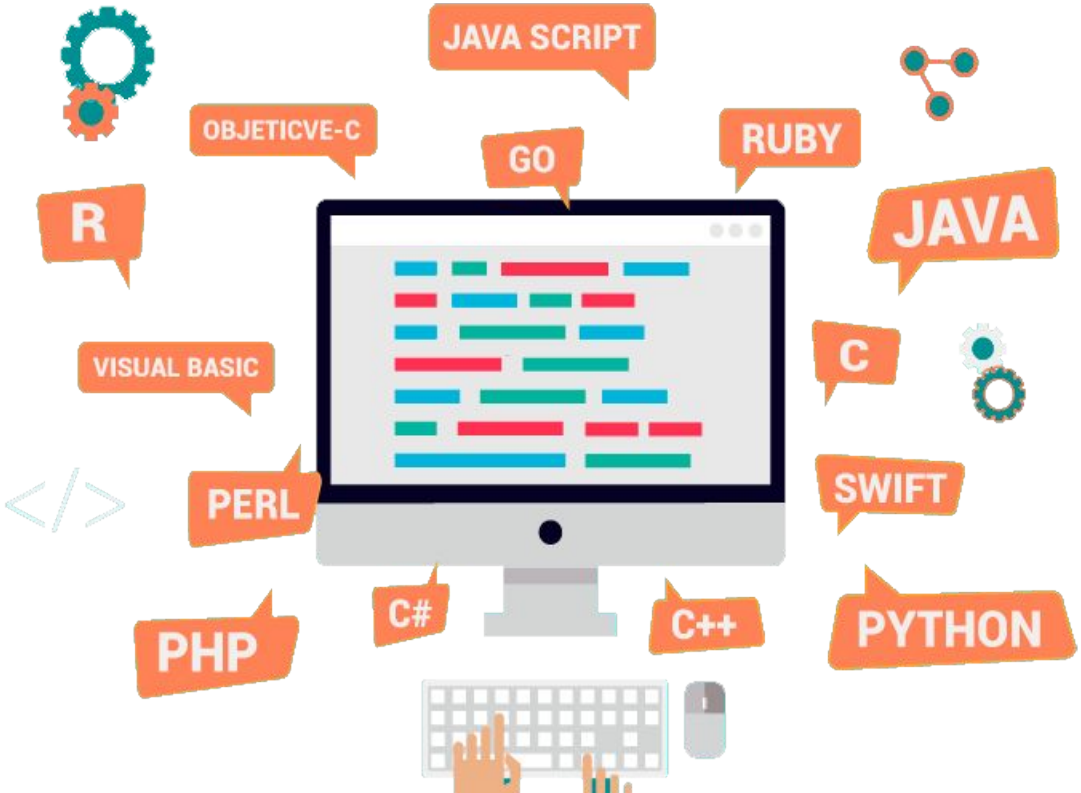
UMA BOA BASE DE LÓGICA DE PROGRAMAÇÃO E A CRIAÇÃO DE UMA ABSTRAÇÃO ACERCA DOS CONCEITOS E ESTRUTURAS BÁSICAS, DE INÍCIO, SÃO MAIS IMPORTANTES QUE O CONHECIMENTO TÉCNICO.

COM ESSAS BASES ESTABELECIDAS, O APRENDIZADO DE QUALQUER LINGUAGEM NOVA FICARÁ MUITO MAIS FÁCIL.

Um pouco de história da programação...



E onde entram as linguagem de programação??



1957-1959

FORTRAN (FORMULA TRANSLATION), LISP (LIST PROCESSOR), AND COBOL (COMMON BUSINESS-ORIENTED LANGUAGE)

Considered the oldest languages that are still used today. High-level languages created for scientific, mathematical, and business computing.

PRIMARY USES

Supercomputing applications, AI development, business software

USED BY

NASA, credit cards, ATMs

NASA

FUN FACT

Action movie The Terminator used samples of Cobol source code for the text shown in the Terminator's vision display.

1970

PASCAL (AFTER FRENCH MATHEMATICIAN/PHYSICIST BLAISE PASCAL)

High-level. For teaching structured programming and data structuring. Commercial versions widely used throughout the '80s.

CREATOR

NIKLAUS WIRTH

PRIMARY USES

Teaching programming

Object Pascal, a derivative, is commonly used for Windows application development

USED BY

Apple Lisa (1983), Skype

skype

1972

C (BASED ON AN EARLIER LANGUAGE CALLED "B")

General-purpose, low-level. Created for Unix systems. Second most popular language (behind Java). Many leading languages are derivatives, including C#, Java, JavaScript, Perl, PHP, and Python.

CREATOR

DENNIS RITCHIE
Bell Labs

PRIMARY USES

Cross-platform programming, system programming, Unix programming, computer game development

USED BY

Unix (rewritten in C in 1973), early WWW servers and clients

UNIX®

1983

C++ (FORMERLY "C WITH CLASSES"; ++ IS THE INCREMENT OPERATOR IN "C")

Intermediate-level, object-oriented. An extension of C, with enhancements such as classes, virtual functions, and templates.

CREATOR

BJARNE STROUSTRUP
Bell Labs

PRIMARY USES

Commercial application development, embedded software, server/client applications, video games

USED BY

Adobe, Google Chrome, Mozilla Firefox, Microsoft Internet Explorer

Adobe

1983

OBJECTIVE-C (OBJECT-ORIENTED EXTENSION OF "C")

General-purpose, high-level. Expanded on C, adding message-passing functionality based on Smalltalk language.

CREATOR

BRAD COX AND TOM LOVE
Stepstone

PRIMARY USES

Apple programming

USED BY

Apple's OS X and iOS operating systems

1987

PERL ("PEARL" WAS ALREADY TAKEN)

General-purpose, high-level. Created for report processing on Unix systems. Today it's known for high power and versatility.

CREATOR

LARRY WALL
Unisys

PRIMARY USES

CGI, database applications, system administration, network programming, graphics programming

USED BY

IMDb, Amazon, Priceline, Ticketmaster

IMDb

amazon

1991

PYTHON (FOR BRITISH COMEDY TROUPE MONTY PYTHON)

General-purpose, high-level. Created to support a variety of programming styles and be fun to use. Tutorials, sample code, and instructions often contain Monty Python references.

CREATOR

GUIDO VAN ROSSUM
CWI

PRIMARY USES

Web applications, software development, information security

USED BY

Google, Yahoo, Spotify

Google

YAHOO!

1993

RUBY (THE BIRTHSTONE OF ONE OF THE CREATOR'S COLLABORATORS)

General-purpose, high-level. A teaching language influenced by Perl, Ada, Lisp, Smalltalk, etc. Designed for productive and enjoyable programming.

CREATOR

YUKIHIRO MATSUMOTO

PRIMARY USES

Web application development, Ruby on Rails

USED BY

Twitter, Hulu, Groupon

hulu

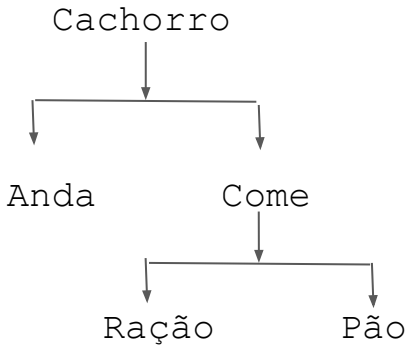
GROUPON

1995	**JAVA** (FOR THE AMOUNT OF COFFEE CONSUMED WHILE DEVELOPING THE LANGUAGE) General-purpose, high-level. Made for an interactive TV project. Cross-platform functionality. Currently the world's most popular programming language.	CREATOR JAMES GOSLING Sun Microsystems 	PRIMARY USES Network programming, web application development, software development, Graphical User Interface development	USED BY Android OS/apps
1995	**PHP** (FORMERLY "PERSONAL HOME PAGE," NOW IT STANDS FOR "HYPERTEXT PREPROCESSOR") Open-source, general-purpose. For building dynamic web pages. Most widely used open-source software by enterprises.	CREATOR RASMUS LERDORF 	PRIMARY USES Building/ maintaining dynamic web pages, server-side development	USED BY Facebook, Wikipedia, Digg, WordPress, Joomla
1995	**JAVASCRIPT** (FINAL CHOICE AFTER "MOCHA" AND "LIVESCRIPT") High-level. Created to extend web page functionality. Used by dynamic web pages for form submission/validation, interactivity, animations, user activity tracking, etc.	CREATOR BRENDAN EICH Netscape 	PRIMARY USES Dynamic web development, PDF documents, web browsers, desktop widgets	USED BY Gmail, Adobe Photoshop, Mozilla Firefox

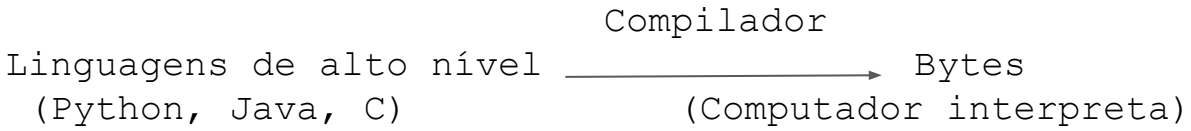
E as mulheres?

Linguagem procedural x orientada à objetos

```
o cachorro anda
o cachorro come ração
o cachorro come pão
```



Compiladores e IDE:



IDE: INTEGRATED DEVELOPMENT ENVIRONMENT - PROGRAMA QUE REÚNE CARACTERÍSTICAS E FERRAMENTAS DE APOIO AO DESENVOLVIMENTO DE SOFTWARES

Algumas linguagens mais comuns:

Top 10 Programming Languages	Python	C	Java	C++	C#	R	JavaScript	PHP	Go	Swift
Paradigm	Multi-paradigm: object-oriented, imperative, functional, procedural, reflective	Imperative (procedural), structured	Multi-paradigm: object-oriented (class-based), structured, imperative, generic, reflective, concurrent	Multi-paradigm: procedural, functional, object-oriented, generic	Multi-paradigm: structured, imperative, object-oriented, event-driven, task-driven, functional, generic, reflective, concurrent	Multi-paradigm: array, object-oriented, imperative, functional, procedural, reflective	Multi-paradigm: object-oriented (prototype-based), imperative, functional, event-driven	Imperative, object-oriented, procedural, reflective	Compiled, concurrent, imperative, structured	Multi-paradigm: protocol-oriented, object-oriented, functional, imperative, block-structured
Designed by	Guido van Rossum	Dennis Ritchie	James Gosling	Bjarne Stroustrup	Microsoft	Ross Ihaka and Robert Gentleman	Brendan Eich	Rasmus Lerdorf	Robert Griesemer, Rob Pike, Ken Thompson	Chris Lattner and Apple Inc
Developer	Python Software Foundation	Dennis Ritchie & Bell Labs (creators), ANSI X3J11 (ANSI C), ISO/IEC	Sun Microsystems (now owned by Oracle corporation)	Bell Labs	Microsoft	R Core Team	Netscape Communications Corporation, Mozilla Foundation, Ecma International	The PHP Development Team, Zend Technologies	Google Inc.	Apple Inc
First appeared	20 February 1991 (26 years ago)	1972 (45 years ago)	May 23 1995 (22 years ago)	1983 (34 years ago)	2000 (17 years ago)	August 1993 (24 years ago)	December 4, 1995 (21 years ago)	June 8, 1995 (22 years ago)	November 10, 2009 (7 years ago)	June 2, 2014 (3 years ago)
Typing discipline	Duck, dynamic, strong	Static, weak, manifest, nominal	Static, strong, safe, nominative, manifest	Static, nominative, partially inferred	Static, dynamic, strong, safe, nominative, partially inferred	Dynamic	Dynamic, duck	Dynamic, weak, gradual (as for PHP 7.0.0)	Strong, static, inferred, structural	Static, strong, inferred
Platform	Cross-platform	Cross-platform	Windows, Solaris, Linux, OS X	Linux, MacOS, Solaris	Common Language Infrastructure	UNIX platforms, Windows, MacOS	Cross-platform	Unix-like, Windows	Linux, macOS, FreeBSD, NetBSD, OpenBSD, Windows, Plan 9, DragonFly BSD, Solaris	Darwin, Linux, FreeBSD
Filename extensions	.py, .pyc, .pyo (prior to 3.5), .pyw, .pyz (since 3.5)	.c, .h	.java, .class, .jar	.cc, .cpp, .C, c++, .h, .hh, .hpp, .hxx, .h++	.cs	.r, .R, .RData, .rds, .rda	.js	.php, .phtml, .php3, .php4, .php5, .php7, .phps	.go	.swift

E trabalhando com isso?

MESMO QUE NÃO VENHA A SER UMA DESENVOLVEDORA DE SOFTWARES, MUITOS PROGRAMAS UTILIZADOS NAS MAIS DIVERSAS PROFISSÕES SÃO EDITÁVEIS POR ALGUMA LINGUAGEM DE PROGRAMAÇÃO (PYTHON É UMA DAS MAIS COMUNS).

ENTENDER A LÓGICA DE PROGRAMAÇÃO E ALGUMA LINGUAGEM É UMA VANTAGEM COMPETITIVA NO MERCADO DE TRABALHO.

PROGRAMAR DÁ A LIBERDADE E INDEPENDÊNCIA DE DESENVOLVER FUNCIONALIDADES AO INVÉS DE ADQUIRIR ALGO PRONTO, QUE PODE NÃO SER O MAIS ADEQUADO À SUA NECESSIDADE.

BORA PRATICAR !