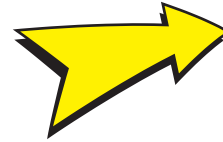
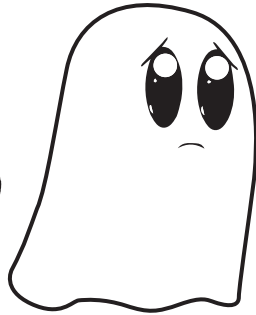


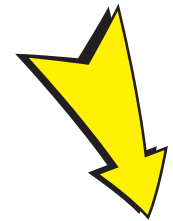
OBJETOS

NÃO PRECISAM
SER SEMPRE
FÍSICOS



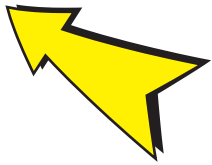
IDENTIDADE

UM OBJETO É
DO OUTRO



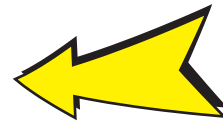
ATRIBUTOS

CHEIO, VAZIO
GRANDE, COR,
PESO, ALTURA



COMPORTAMENTO

LATIR(), IMPRIMIR(),
DEPOSITAR(), CAMINHAR()



OBJETOS

SUBSTANTIVO

COISAS FÍSICAS,
LUGARES, PESSOAS,
IDÉIAS, CONCEITOS

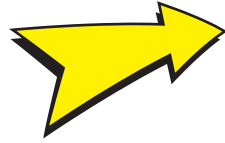
POO



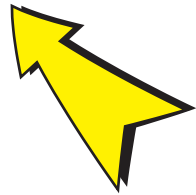
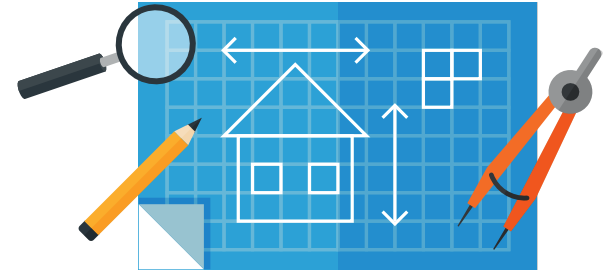
A ROUPA
O CARRO
A CONTA
O EVENTO

POSSO COLOCAR
"O" OU "A" NA
FRENTE?

CRIAM
OBJETOS



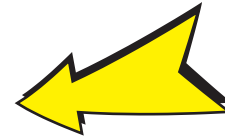
COMO PLANTA
DE UMA CASA



POO
CLASSES



DIZ COMO
VAI SER O
OBJETO



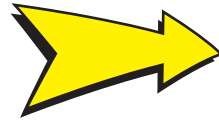
1 CLASSE
SERVE PARA
MUITOS OBJETOS



NOME / TIPO

O QUE É?

EMPREGADO,
CONTA, EVENTO,
DOCUMENTO,
ÁLBUM



PROPRIEDADES ATRIBUTOS DADOS

O QUE DESCREVE

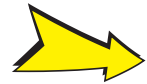
COR, ALTURA, LARGURA,
TIPO ARQUIVO,

POO CLASSES

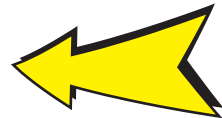


O QUE PODE FAZER

(SÃO COMO FUNÇÕES QUE PERTENCEM
A UMA CLASSE. PODEM SER CHAMADAS
E DEVOLVER VALORES)

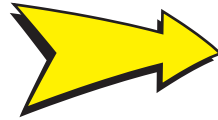


REPRODUZIR(), ABRIR()
GUARDAR(), IMPRIMIR()



COMPORTAMENTO OPERACOES METODOS

NOME
CONTABANCO



ATRIBUTOS

NUMEROCONTA

BALANÇO

DATAABERTURA

TIPOCONTA



PÓO
EXEMPLO

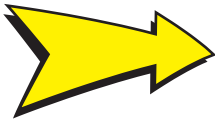


COMPORTAMENTO

ABRIR() **FECHAR()**

DEPÓSITO() **RETIRADA()**



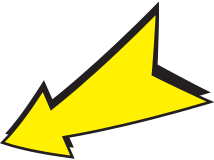


OBJETOS
(INSTÂNCIA)

CONTABANCO
NUMEROCONTA BALANÇO DATA ABERTURA TIPO CONTA
ABRIR() FECHAR() DEPOSITAR() RETIRAR()

CLASSE

P^{OO}
DIAGRAMAS



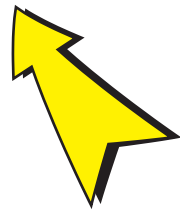
CONTA JOSÉ

A7652 \$ 5500 5/3/2008 ESPECIAL	ABRIR() FECHAR() DEPOSITAR() RETIRAR()
--	---

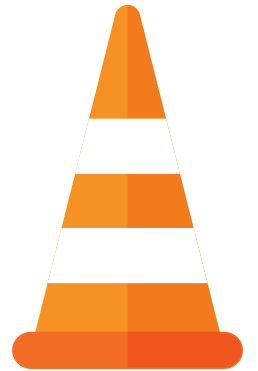
CONTA ALICE

A7653 \$ 24000 8/4/2012 CORRENTE	ABRIR() FECHAR() DEPOSITAR() RETIRAR()
---	---

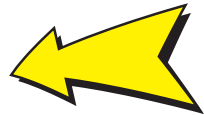
**criar
objetos** = **instanciacao**



POO
instancias

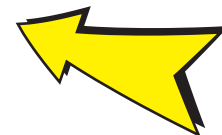


**chamadas
bibliotecas e
frameworks**

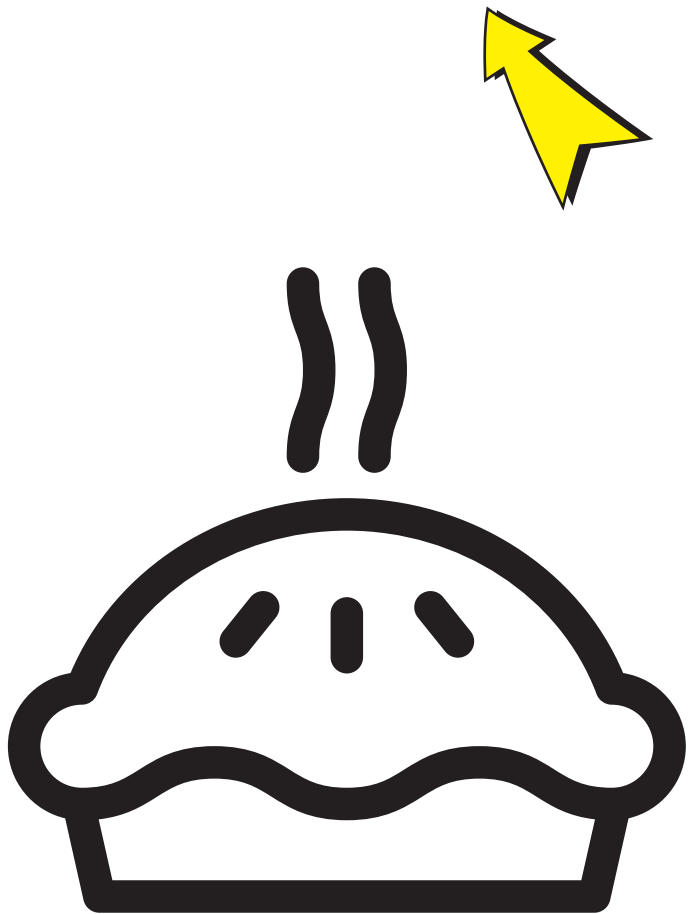


**datas,
matrizes,
comunicação
com a rede, etc**

**MUITOS
programas
já possuem
classes**



A PIE = A TORTA



POO

ABSTRAÇÃO
POLIMORFISMO
INHERITANCE / HERANÇA
ENCAPSULAÇÃO



EX: MESA

VOCÊ JÁ CONHECE...

POO
ABSTRAÇÃO

MAS

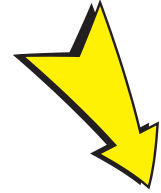
NAO

SABE

QUE TIPO? MADEIRA? PEDRA?
VIDRO? GRANDE? PEQUENA?
4 PÉS? 1 PILAR CENTRAL?

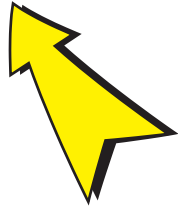


VOCE TEM UMA IDEIA



CENTRAMOS
PROPIEDADES
GERAIS

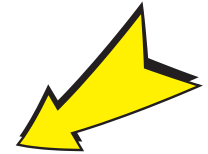
POO
ABSTRACAO



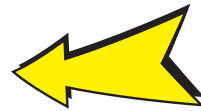
MESA



~~TEM MOTOR?
TEM RADIOATIVIDADE?~~

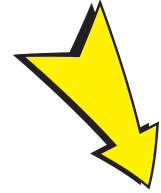


DESCARTAMOS
O IRRELEVANTE



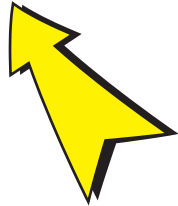


CENTRAR NO ESSENCIAL



IGNORAR
O QUE NAO E
IMPORTANTE

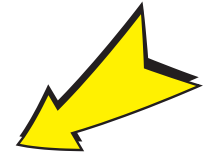
POO
ABSTRACAO



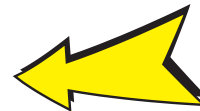
ESSENCIAL



O QUE TODOS OBJETOS VÃO TER

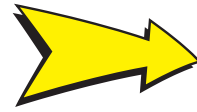


IGNORAR O
IRRELEVANTE



RESTRINGIR

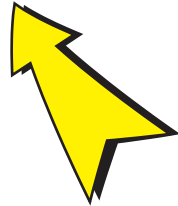
**ACESSO AOS
MECANISMOS
INTERNOS**



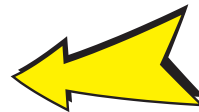
OCULTAR

**INFORMAÇÕES
E DADOS**

POO
EMCAPSULACAO

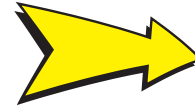


**COMO UMA
CAIXA PRETA**

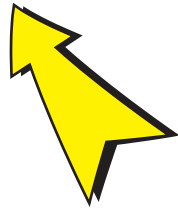


**REVELAR O
NECESSARIO**

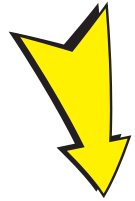
TELEFONE
FAZ LIGAÇÃO?



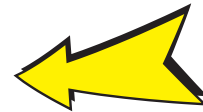
COMO?
NÃO IMPORTA!



POO
EMCAPSULACAO

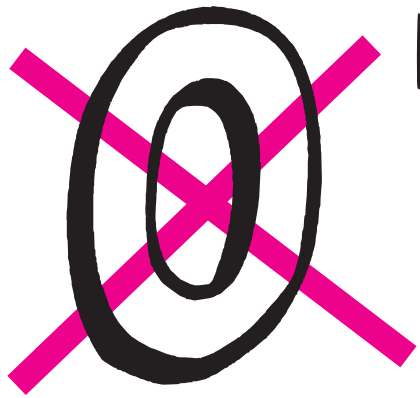


EU QUE
FIZ E VOU
ESCONDER DE
MIM MESMO?

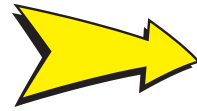


NAO E ESCONDER
É EVITAR MUDANÇAS
EM CASCATA EM OUTRAS
PARTES DO SEU CÓDIGO

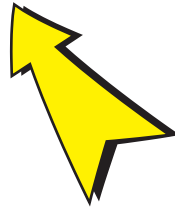




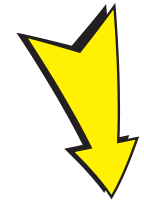
NÃO CRIAR
DO ZERO



REUTILIZAR
CLASSES



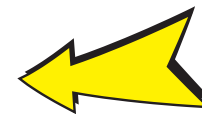
POO
HERANÇA



EX: TODO
CLIENTE

E UMA

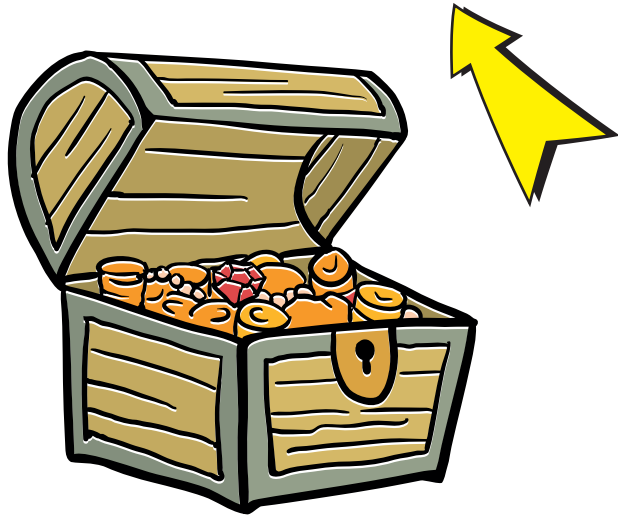
PESSOA



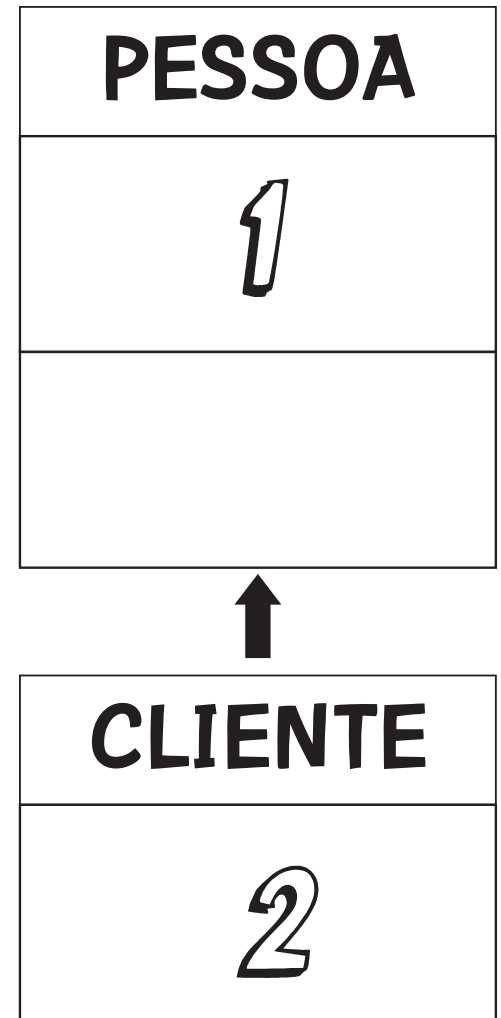
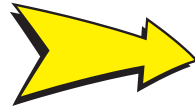
MAS NEM TODA
PESSOA VIRA CLIENTE



**CLIENTE
HERDA
DE PESSOA**



**POO
HERANCA**

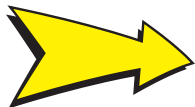


1 SUPER CLASSE / PARENT CLASS / MÃE

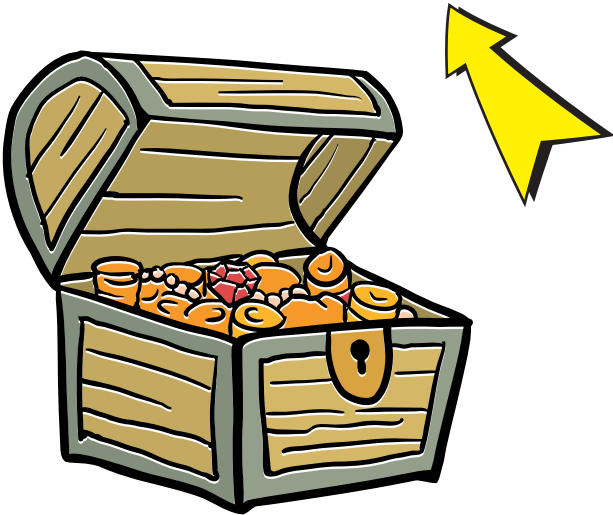
2 SUB CLASSE / CHILD CLASS / FILHA



C++
TEM MÚTIPLAS
HERANÇAS



POO
HERANCA



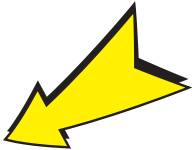
FUNCIONARIO
2



PESSOA
1

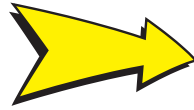


CLIENTE
2

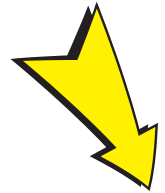


MAS O COMUM
HERDAR DE 1 APENAS

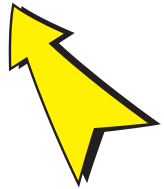
**VARIAS
FORMAS**



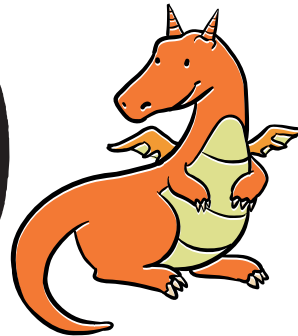
A + B



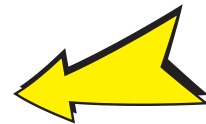
**1 + 2
SOMA**



POLIMORFISMO

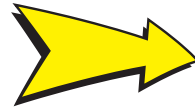


**"OLA MUNDO"
CONCATENA**



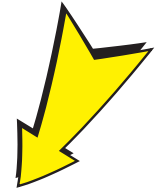
**A = "OLA"
B = "MUNDO"**

O + MUDA
FLEXIBILIDADE



DEPENDE
DA AÇÃO

P**OO** 
POLIMORFISMO



CORRENTE



CONTA



POUPANÇA