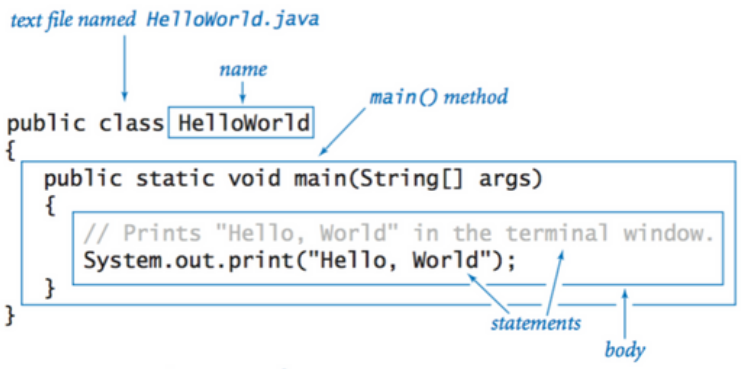
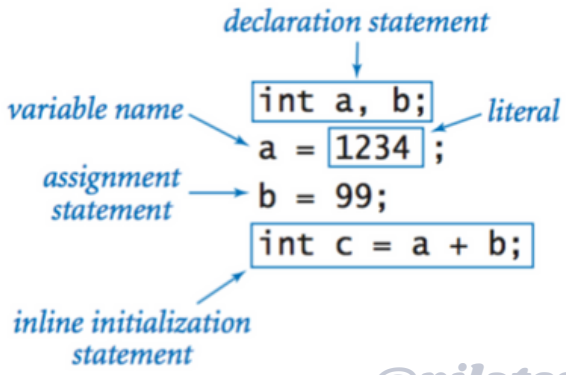
Beginners Java Cheatsheet

Writing your 1st Hello, World program



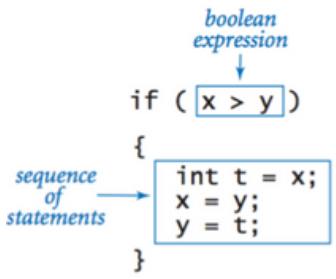
Declaring & Assigning Variables



Printing to Console

`void System.out.print(String s)`	*print s*
`void System.out.println(String s)`	*print s, followed by a newline*
`void System.out.println()`	*print a newline*

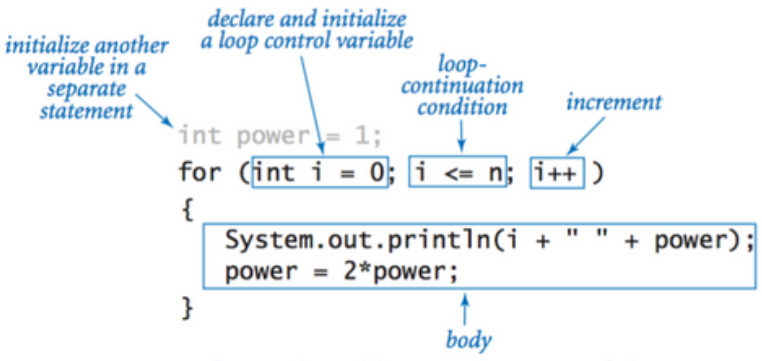
Writing your 1st If Statement



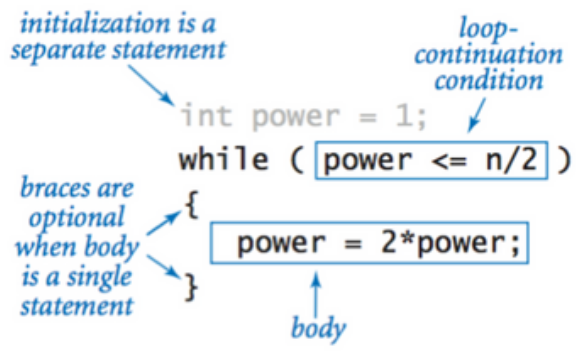
If/ Else Statement

```
if      (income <      0) rate = 0.00;
else if (income <   8925) rate = 0.10;
else if (income <  36250) rate = 0.15;
else if (income <  87850) rate = 0.23;
else if (income < 183250) rate = 0.28;
else if (income < 398350) rate = 0.33;
else if (income < 400000) rate = 0.35;
else                      rate = 0.396;
```

For Loop



While Loop



Break Statement

```
int factor;
for (factor = 2; factor <= n/factor; factor++)
   if (n % factor == 0) break;

if (factor > n/factor)
   System.out.println(n + " is prime");
```

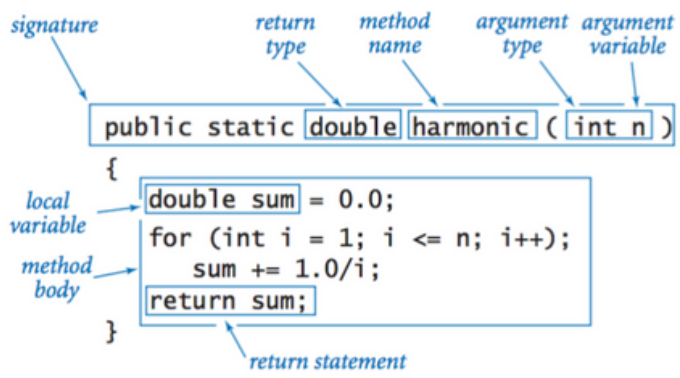
Do-While Loop

```
int i = 0;
do {
  System.out.println(i);
  i++;
}
while (i < 5);
```

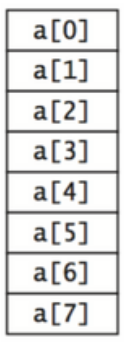

Writing your 1st Switch/Case Statement

```
switch (day) {
   case 0: System.out.println("Sun"); break;
   case 1: System.out.println("Mon"); break;
   case 2: System.out.println("Tue"); break;
   case 3: System.out.println("Wed"); break;
   case 4: System.out.println("Thu"); break;
   case 5: System.out.println("Fri"); break;
   case 6: System.out.println("Sat"); break;
}
```

Writing your 1st Function



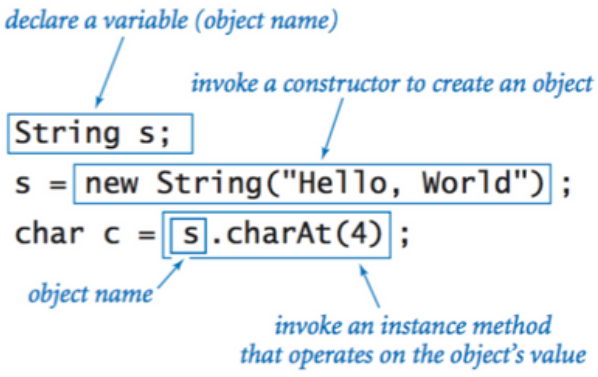
Making your 1st Array



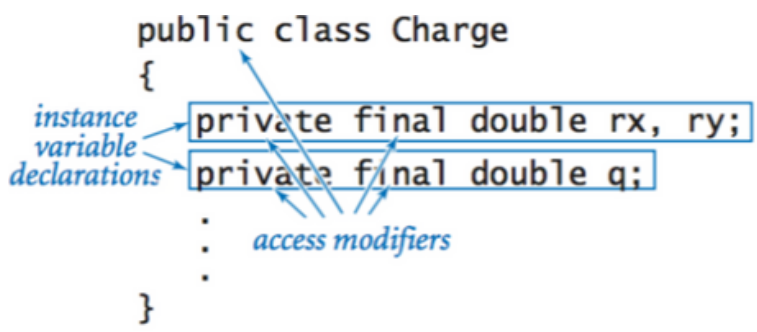

```
String[] SUITS = { "Clubs", "Diamonds", "Hearts", "Spades" };

String[] RANKS = {
   "2", "3", "4", "5", "6", "7", "8", "9", "10",
   "Jack", "Queen", "King", "Ace"
};
```

Beginners Java Cheatsheet

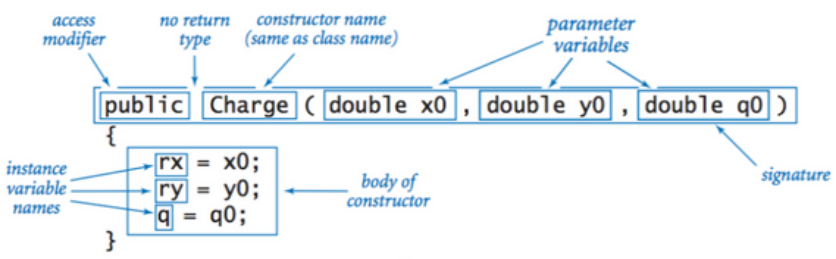
Creating & Using an Object



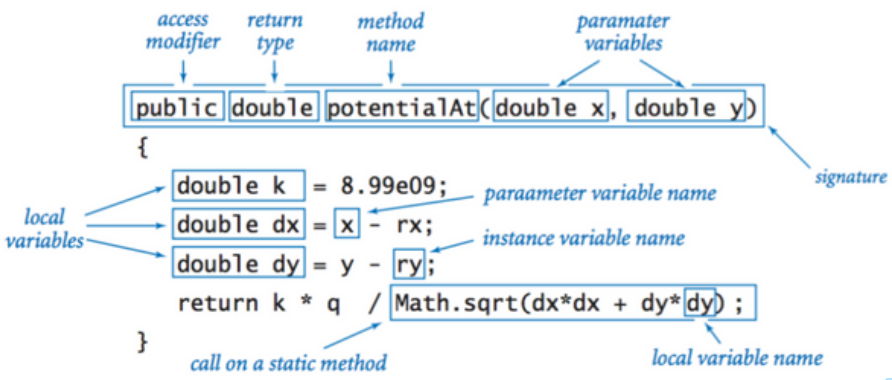
Creating Instance Variables



Constructors



Creating Instance Methods



Creating your 1st Class

```
public class Charge
{
   private final double rx, ry;
   private final double q;

   public Charge(double x0, double y0, double q0)
   {  rx = x0; ry = y0; q = q0;  }

   public double potentialAt(double x, double y)
   {
      double k = 8.99e09;
      double dx = x - rx;
      double dy = y - ry;
      return k * q / Math.sqrt(dx*dx + dy*dy);
   }

   public String toString()
   {  return q +" at " + "("+ rx + ", " + ry +")";  }

   public static void main(String[] args)
   {
      double x = Double.parseDouble(args[0]);
      double y = Double.parseDouble(args[1]);
      Charge c1 = new Charge(0.51, 0.63, 21.3);
      Charge c2 = new Charge(0.13, 0.94, 81.9);
      double v1 = c1.potentialAt(x, y);
      double v2 = c2.potentialAt(x, y);
      StdOut.printf("%.2e\n", (v1 + v2));
   }
}
```

class name · instance variables · constructor · instance variable names · instance methods · test client · create and initialize object · invoke constructor · object · invoke

OOP Breakdown

Creating an object

```
Charge c1 = new Charge(0.51, 0.63, 21.3);

c1.potentialAt(x, y)
```

creates objects and invokes methods

Creating an Instance Variable

```
public class Charge
        Charge(double x0, double y0, double q0)
double potentialAt(double x, double y)   potential at (x, y) due to charge
String toString()                        string representation
```

defines signatures and describes methods

Implementation

```
public class Charge
{
   private final double rx, ry;
   private final double q;
   public Charge(double x0, double y0, double q0)
   {  ...  }
   public double potentialAt(double x, double y)
   {  ...  }
   public String toString()
   {  ...  }
}
```

defines instance variables and implements methods

Made by @pilatesdev

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