

HP JAVA Cheat Sheet

INPUT with JOptionPane

```
import javax.swing.*;

public class TriangleArea
{
    public static void main(String[] args)
    {
        String baseString,heightString;
        double base;    // base of triangle.
        double height;   // height of the triangle
        double area;     // area of triangle

        baseString = JOptionPane.showInputDialog("Enter base:");
        heightString = JOptionPane.showInputDialog("Enter height:");

        base = Double.parseDouble( baseString );
        height = Double.parseDouble( heightString );
        area = (.5)*base*height; // Compute the area.

        JOptionPane.showMessageDialog(null, "The base was "+ base
            + "The height was "+ height
            + "The area of the triangle is " + area);
    } // end of main()

} // end of class TriangleArea
```

Java Primitives/Variables

Integers

int= -2,147,483,648 to 2,147,483,647

Real Numbers:

Double = $\pm 10^{38}$ (15 significant figures)

Single Characters:

Char letter='A';

Boolean values (true or false)

Boolean isPrime= true;

String Values:

String name = "Erin";

Arrays (see Java Array Class):

int theArray[] = new int[10]; 1 dimensional

int theArray[][]=new int[6][6]; 2 dimensional

Standout Output Methods

System.out.print("Enter the score"); (same line)

System.out.println("Try again"); (new line)

System.out.println("The answer is "+ 42);

Branching Structures

"and" is represented in Java as &&

"or" is represented in Java as ||

"not" is represented in Java as !

if

```
if ( xCoord > 800 )
    addition = -5;
```

if with multiple actions (braces)

```
if ( xCoord > 800 )
{
    xAddition = -5;
    forwards = true; //Boolean variable
}
```

if with else

```
if ( hungry) //hunger is Boolean variable – must be true
    System.out.println("Buy the cookie!" );
else
    System.out.println("Buy the apple!" );
```

if

```
if ( (hunger + look + smell ) > 15 )
    System.out.println("Buy the cookie!" );
else if (hunger + look + smell)>20
    System.out.println("Buy the cake!" );
else
    System.out.println("Buy the apple!" );
```

for

```
for (countDown=3;countDown>=0;countDown--)
{
    System.out.println(countDown);
    System.out.println("and counting.");
}
```

while

```
while ( dollars < 1000000.00 )
{
    dollars = dollars*1.05;
    year++;
}
```

do looping

```
do
{
    System.out.println(x);
}
while (x>10);
```

HTML for APPLET

```
<html>
<body>
<applet code="HappyFace" width="800" height="600">
</applet>
</body>
</html>
```

APPLET

```
import javax.swing.*;
import java.awt.*;
```

```
public class HappyFace extends JApplet
{
    public void paint(Graphics canvas)
    {
        canvas.drawOval(100, 50, 200, 200);
        canvas.fillOval(155, 100, 10, 20);
        canvas.fillOval(230, 100, 10, 20);
        canvas.drawArc(150, 160, 100, 50, 180, 180);
    }
}
```

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Useful Math Class Methods Result

| | |
|-------------------|------------------------------|
| Math.abs(-7) | 7 |
| Math.ceil(6.2) | 7 |
| Math.floor(6.8) | 6 |
| Math.max(5,6) | 6 |
| Math.min(5,6) | 5 |
| Math.pow(2.0,3.0) | 8.0 |
| Math.random() | number between 0 less than 1 |
| Math.round(6.5) | 7 |
| Math.sqrt(4.0) | 2.0 |

Assignment Statements

```
double pi;
int x = 1;
String empty = "";
double pi = 3.14159;
```

```
x == y    // x equals y
x != y    // x is not equal to y
x > y     // x is greater than y
x < y     // x is less than y
x >= y    // x is greater than or equal to y
x <= y    // x is less than or equal to
```

String Methods

(assume stringVariable is name)

```
length      stringVariable.length();
equals      stringVariable.equals(otherStringVariable);
            stringVariable.equalsIgnoreCase(otherStringVariable);
lowercase   stringVariable.toLowerCase();
uppercase   stringVariable.toUpperCase();
trim        stringVariable.trim();
charAt(Position) stringvariable.charAt(Position);
```

Increment and Decrement Operators

```
count++; //increase the value of count by 1
count--; // decrease the value of count by 1
count+2; // increase the value of count by 2
count-2  // decrease the value of count by 2
```

Switch and Case Statements

```
int month = 8;
switch (month) {
    case 1: System.out.println("January"); break;
    case 2: System.out.println("February"); break;
    case 3: System.out.println("March"); break;
    case 4: System.out.println("April"); break;
    case 5: System.out.println("May"); break;
    case 6: System.out.println("June"); break;
    case 7: System.out.println("July"); break;
    case 8: System.out.println("August"); break;
    case 9: System.out.println("September"); break;
    case 10: System.out.println("October"); break;
    case 11: System.out.println("November"); break;
    case 12: System.out.println("December"); break;
    default: System.out.println("Not a month!");break;
}
```

Java Escape Characters

```
\n    new line – position cursor to the beginning of next line
\t    horizontal tab
\r    position cursor to beginning of current line
\\    backslash – prints a backslash
\"    prints a double quote
```

```
System.out.println("Hello\nnext\nLine");
```

Simple OOP example

```
class BoxTester
{
    public static void main ( String[] args )
    {
        Box cube = new Box( 2.0, 2.0, 2.0 );
        System.out.println( "Area: " + cube.area() );
        System.out.println("Volume:" +cube.volume());
    }
}

class Box
{
    private double width, height, length;
    //constructors
    Box( double W, double H, double L)
    {   height = H ;
        width = W ;
        length = L ;
    }
    // methods
    double volume()
    {
        return length*width*height ;
    }
}
```

Input with EasyReader

```
// console is an EasyReader Object you create below
EasyReader console = new EasyReader();
```

```
//EasyReader Method Calls are below
change = console.readInt();
discountRate = console.readDouble();
```