Cheatography

oop java Cheat Sheet

by COOKIE1234 via cheatography.com/148236/cs/32318/

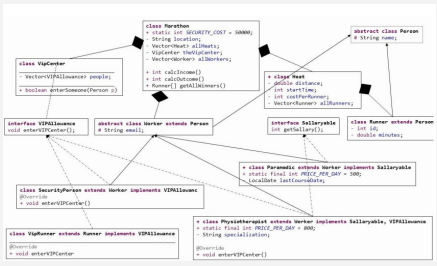
Most used

Print with new line -> System.out.println-("Hello World");
Scanner object -> Scanner s = new Scanne-r(System.in);
Find the length (int) -> msg.length()
To lower/uppercase -> msg.toLower/Upper-Case()
Replace a string -> msg.replaceAll(String a, String b)
charAt(int index) -> char value at the specified index
equals(String/Object) -> if strings values are the same
toCharArray() -> Convert string to character array

Switch

```
switch (num) {
case 1: doSomething();
break;
default: doThis();
break;
}
```

Q1



bubble sort

```
public static void swap(int[] arr, int i, int j)  {
    int temp = arr[i];
    arr[i] = arr[j];
    arr[j] = temp;
}

public static void sortAscending(int arr[])  {
    for (int i=arr.length-1 ; i > 0 ; i-- ) {
        for (int j=0 ; j < i ; j++ )  {
            if (arr[j] > arr[j+1])
                swap(arr, j, j+1);
        }
    }
}
```

binary search

```
public static int binarySearch(int a[], int val) {
  int low=0,high=a.length-1, middle;
  while (low <= high)      {
      middle = (low + high)/2;
      if (val == a[middle])
        return middle;
      else if (val < a[middle])
        high = middle -1;
      else
        low = middle +1;
  }
  return  -1;
}
```

Exception Handling in Java

ArithmeticEx-ception	Errors because of an arithmetic expression.
ZeroDivisionExc-eption	Dividing a value with 0.
ArrayIndexOu-tOfBoundExce-ption	No such index number.
FileNotFound-Exception	Accessing a file that does not exist.
IOException	Input or output error.
NullPointerExce-ption	Referencing a null object.
NumberFormat-Exception	When typecasting does not work.
StringIndexO-utOfBoundExc-eption	When there is no index for a particular string.

try…..catch Statement in Java

```
class Exception_Handaling
{
public static void main(S tring
args[])
{
try
{
int x = 10/0;
}
catch( Ari thm eti cEx ception
e)
{
System.ou t.p rin tln ("Di -
vision by zero");
}
}
```

File Reading and Writing Process

```
// Create a file
File Obj = new File("f ile.tx -
t");
// Write in the file
import java.i o.F ile Writer;
FileWriter write_file = new
FileWr ite r("f ile.tx t");
write_ fil e.w rite(" ") //
write in the file
write_ fil e.c lose() //close
file
//Read from a File:
File read_file = new File("F -
ile.tx t");
System.ou t.p rin tln (re ad_ -
fil e.n ext Lin e());
```

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File Reading and Writing Process (cont)

> read_file.close();

import java.io.File --> Create or Open File --> Read or Write in to file --> Close the file

Inheritance

object of a parent class cannot be cast down to object of the child class

> One one = new Two(); -> Two two = (Two) one;

Polymorphism for static methods does not work in the same way as instance methods.

> In Java, a child class can make the method abstract which is inherited from the parent class.

If a reference of a parent class is pointing to the object of a child class, it can only call methods defined by the parent class.

> “The method print() is undefined for the type One”.

Unlike methods, constructors are not inherited by the child class and hence they cannot be overridden.

> method needs a return type

Java constructors do not have return type.

> error “The constructor One(String) is undefined”.

Interface

```
interface Sun{
void rays();
}
class Mercury implements Sun{
public void rays() {Sy ste m.o -
ut.p ri ntl n("M erc ury ");}
}
class Earth implements Sun{
public void rays() {Sy ste m.o -
ut.p ri ntl n("E art h");}
}
class Sunlight{
public static void main(S tring
args[]){
Sun e =new Earth();
e.rays();
}}
```

An interface in Java helps to implement the concept of abstraction. In an interface class, we only have abstract methods and no method body. With interfaces, we can also achieve multiple inheritance in Java.

Method Overloading

When a class has two or more methods with the same name but different parameters, it is method overloading.

Example of Overload:
public printer(String x){}
public printer(String x, String y){}

If the input is 2 string, it will go to the second method instead of first one.

But you cannot overload by using the same input type sequence. For example:
public printer(String x){}
public printer(String x, String y){} // conflict
public printer(String y, String x){} // conflict

Java will not allow this to be run, because it cannot determine the value.

Override

When you have inherit some of the class from parents, but you want to do something different. In override feature, all the subclass/class object will use the newer method. To make sure JDK knows what you are doing, type @Override in front of the public name. If the override is unsuccessful, JDK will returns error.

Example of overriden helloWorld() method :
Class Student
public void helloWorld(){
System.out.println("Hello");
}
Class GradStudent extends Student
@Override
public void helloWorld(){
System.out.println("Hello World");
}

Rules of Overridden methods:
1. Access modifier priority can only be narrower or same as superclass
2. There is the same name method in superclass / libraries

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