**Workshop TypeScript**

**Install environment**

First install *‘Node’*

And install TypeScript: **npm install -g typescript**

With the following command you van compile *“TypeScript.ts”* files to JavaScript: **tsc –w**

**Hello World**

We start with HelloWorld:

Create a file *greeter.ts*:

function greeter(person) {

return "Hello, " + person;

}

var user = "Jane User";

document.body.innerHTML = greeter(user);

And create a file *test.html*:

<!DOCTYPE html>

<html>

<head><title>TypeScript tester</title>

     <script src="node\_modules/es6-shim/es6-shim.min.js"></script>

    </head>

<body>

<script src="greeter.js"></script>

</body>

</html>

Compile the *greeter.ts* to *greeter.js* with:***tsc –w greeter.ts***

Open the test.html in your Browser

\

**Inheritance**

Make a class **Animal** and use it for a Dog and Cat.

Create a method *getType()* and a method *getName()*

Todo: create class **Dog** and **Cat** (they **extends** from Animal)

* class Animal{
* type: string;
* name: string;
* constructor(name:string){this.name=name;}
* getType(){
* return this.type;
* }
* getName() {
* return this.name;
* }
* }

**Arrays**

* Print an array where any number of animals can be given
* Hint:
* var animals:Animal[] = [new Dog("Brutus"), new Cat("Minoush")]
* document.body.innerHTML = printAnimals(animals);

**Exercise Race**

* Create a class ***Car*** with the properties:

type, maxSpeed en timeBehind

class Car{

type: string;

maxSpeed:number;

timeBehind:number;

constructor(type: string,maxSpeed:number ) {

this.type= type;

this.maxSpeed=maxSpeed; }

setTimeBehind(time:number){

this.timeBehind = time;}

}

* Define and create an array of cars and sort them at maximum speed and display the cars:
* this.cars.sort(this.compareCarSpeed);
* compareCarSpeed(car1: Car, car2: Car) {
* if (car1.maxSpeed <car2.maxSpeed)
* return 1;
* if (car1.maxSpeed > car2.maxSpeed)
* return -1;
* return 0;
* }
* Make a class ***Race:***
* class Race{
* cars:Car[];
* distance:number;
* constructor(distance:number){
* this.cars = new Array();
* this.distance = distance;
* }
* }

Give this class a method that returns a list with a ranking. So in order and the time a car runs behind compared to the fastest car.

**Hint** winningTime of the fastest car:

let winningTime:number = this.getTime(this.cars[0].maxSpeed, this.distance)

getTime(speed:number, distance:number){

//time in seconds

return (distance\*3600/speed);

}