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> **What are the features of Typescript beyond static typing?**
>
> 1-TypeScript is a superset of JavaScript. It means that TypeScript contains all the features and functionalities of JavaScript with extra features and functionalities.
>
> 2-TypeScript can run on any environment that JavaScript runs on. Unlike its counterparts, TypeScript doesn't need a dedicated VM or a specific runtime environment to execute.
>
> 3-TypeScript is not interpreted language like javascript it has to compile first before runtime and this helps to highlight errors before runtime.

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What are the features of Typescript beyond static typing?

Aside from the performance benefits you get by letting the compiler know the types of values beforehand and preventing certain glitches, Other features also include:

1- TypeScript is just JavaScript.
Typescript adopts the basic building blocks of your program from JavaScript. Hence, you only need to know JavaScript to use TypeScript.

2- TypeScript supports other JS libraries.
We can easily use all of the JavaScript frameworks, tools, and other libraries.

3- TypeScript is portable.

TypeScript is portable across browsers, devices, and operating systems. TypeScript doesn't need a dedicated VM or a specific runtime environment to execute.

4- TypeScript supports Object Oriented Programming concepts like classes, interfaces, inheritance, etc.

5- DOM Manipulation: TypeScript can be used to manipulate the DOM similar to JS.

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What are the features of Typescript beyond static typing?

- Type Inference, which gives some of the benefits of types, without actually using them. Typescript inferrs variable type from the assigned value and the variable type cannot be changed throughout the application.
- Access to Latest ECMAScript features, before they become supported by major browsers.
- The ability to compile down to a version of JavaScript that runs on all browsers because typescript comes with built-in compiler tsc.
- Great tooling support with IntelliSense in IDEs and text editors.

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[Solo]

1- What are the features of Typescript beyond static typing?

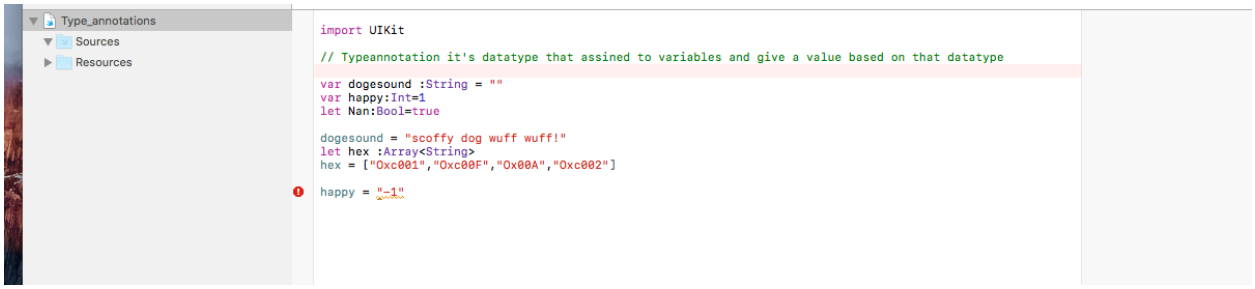
- Variables can be assigned a type at compile time (before the program run) and and the compiler can therefore deduce the types of expressions using those variables
- If a and b are declared as number, then the compiler concludes that a + b is also number
- You can find many errors While you're still typing
- Static-checking, which mean checking for debugging at compile time bugs are the bane of programming, static checking is the first idea that we've seen for these bugs caused by applying an operation to the wrong types of arguments. If we write a broken line of code like : `"5" * "6"` that tries to multiply two strings, then static typing will catch this error while we're still programming, rather than waiting until the line is reached during execution this also example:

```
// name of author
const  Author : string = "\\udacity\\", NameOfCourse:string="Advance_Web_Developer";
//number of courses
const NumberOfCourses:number=1;
//vaild permission
const applied:boolean=true;
// Student anonymous function
const StudentOfUdacity = ( courses_taken : Array<string> ,StudetName:string,id:number,add:string)=>{
        //user information
        const userDetail = { identify:id <= 0  && "error zero at least be one",BunchOfCourses:courses_taken,name :StudetName}
        //adding courses
        userDetail.BunchOfCourses.push(add);
        console.log( `| id |${userDetail.identify} |\n| Courses:${userDetail.BunchOfCourses} |\n| name:${userDetail.name}|\n`);
}
//  let C  out This  foo!
StudentOfUdacity(["nodejs","javascript"] ,"Ahmed Hamdy",-1,"PHP");

// ----------------------------------------error----------------------------------------------------------------------------;

// the bug is found automatically before the program even runs is this why Static type it's useful
// let's make error  Argument of type 'number' is not assignable to parameter of type 'string'
StudentOfUdacity(["nodejs","javascript"] ,"Ahmed Hamdy",-1,1);
```

- Typescript is a gradually-typed superset of JavaScript language, this mean that every JavaScript program is a typescript program and that types can be optionally a dynamic map type, function (closure) type. Class type, method access, array (collection) type, there is also typeanotation in swift and it's similar to typescript as well as Static-check



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