Typescript Setup Instructions

This document explains how to create a Typescript project in the Node.js environment.

You will need to run the commands in the first section only once to setup your computer's configuration. The commands in the second section will need to be run for each Node.js Typescript project that you create.

Run these commands only once

1. Install Node.js. For more information, see the Node.js website. You can find downloads of the current Node.js version for a variety of operating systems at https://nodejs.org/en/download/current/.

2. Install Typescript globally. This will install tsc, the Typescript compiler.
   > npm install -g typescript

3. Run the Typescript compiler to ensure things are installed properly. The following command should display the installed Typescript version.
   > tsc -v

4. Install ts-node globally. Ts-node lets you run Typescript programs in Node.js without having to first manually compile your program (i.e., ts-node compiles your program for you, then runs it).
   > npm install -g ts-node

5. Run ts-node to ensure that things are installed properly. The following command should print out 12345:
   > ts-node -e "console.log(12345)"

Run these commands for each new Node.js Typescript project you create

1. Create a new directory for your Node.js Typescript project.
   > mkdir tsproject
   > cd tsproject

2. Initialize the new Node.js project. The following command will create the Node.js package.json configuration file for the project.
   > npm init -y

3. Configure the Node.js project to use Typescript. The following command will create a tsconfig.json configuration file, which contains settings for the Typescript compiler (tsc).
   > tsc --init

4. Install the Typescript typings for the Node.js API. The Node.js API is written in Javascript, which has no type information. Typescript typings provide type information

for the typeless Node.js API so the compiler can do type checking when your program calls the Node.js API.

> npm install --save-dev @types/node

5. To test your project's configuration, create a file named hello.ts containing the following code:

console.log("Hello!");

6. Run your Typescript program with ts-node. The following command should display Hello!

> ts-node hello.ts

7. When running a Typescript program, it is necessary to first run the Typescript compiler (tsc) to compile the Typescript code into Javascript. Ts-node automatically runs tsc for you when it runs your Typescript program. However, if for some reason you would prefer to run tsc manually, do the following:

Run the TS compiler to convert your program into JS (hello.js).
> tsc
Run your compiled Javascript program using node (instead of ts-node)
> node hello.js