

Creating a Type Declaration File in TypeScript 5

Creating Declaration Files Manually



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Creating declaration files
isn't something we do often.



**Creating declaration files
isn't something we do often.**

**But it's useful to know how,
for those rare occasions.**



The compiler can generate declaration files for us.

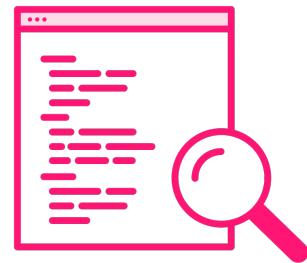


The compiler can generate declaration files for us.

But we won't always agree with what it generates!



Module Topics



Different kinds of libraries



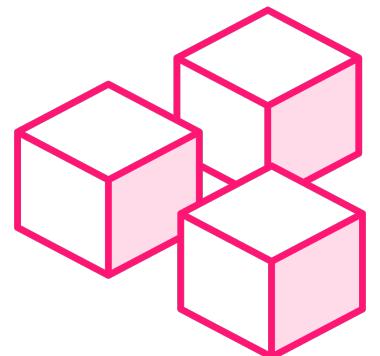
Module Topics



Different kinds of libraries (and modules)



Creating declaration files for global libraries



Creating declarations for modular libraries



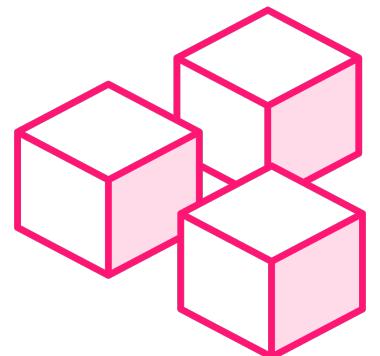
Module Topics



Different kinds of libraries (and modules)



Creating declaration files for global libraries



Creating declarations for modular libraries: ESM



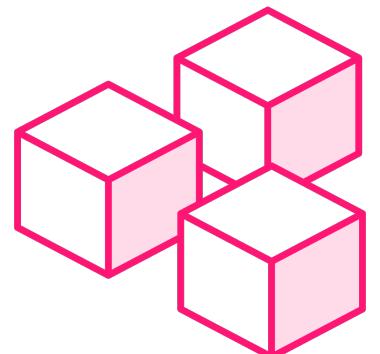
Module Topics



Different kinds of libraries (and modules)



Creating declaration files for global libraries



Creating declarations for modular libraries: ESM, AMD



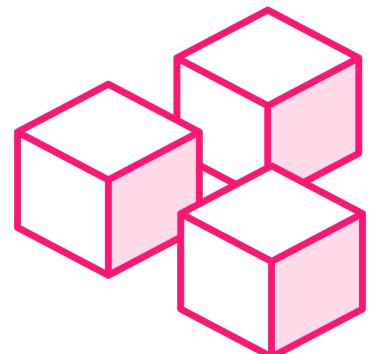
Module Topics



Different kinds of libraries (and modules)



Creating declaration files for global libraries



Creating declarations for modular libraries: ESM, AMD, UMD



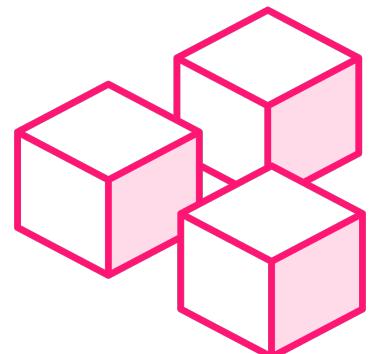
Module Topics



Different kinds of libraries (and modules)



Creating declaration files for global libraries



Creating declarations for modular libraries: ESM, AMD, UMD, CJS



A vibrant hot air balloon with horizontal stripes in purple, yellow, red, and blue is the central focus. It is positioned on the left side of the frame, flying over a lush green vineyard. The landscape extends to a dense forested hillside in the background under a vast, colorful sky transitioning from blue to orange and yellow.

Different JavaScript libraries/modules

Different Kinds of JavaScript Library



Originally there were two kinds of JavaScript library



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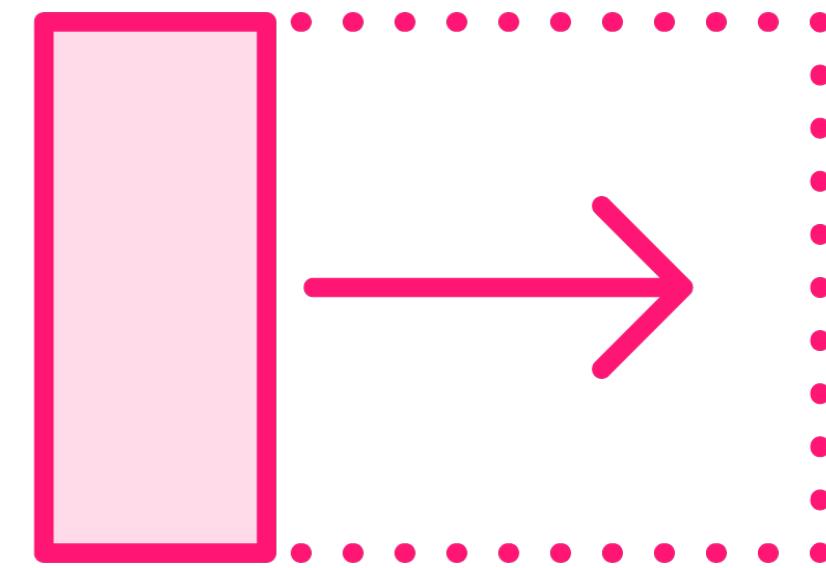
**Libraries that added a
global object, e.g. jQuery**



Originally there were two kinds of JavaScript library



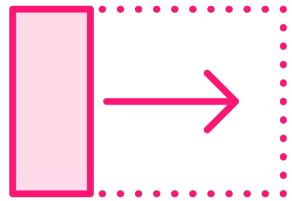
Libraries that added a
global object, e.g. jQuery



Libraries that extended built-
in objects, e.g. Prototype



Both approaches have significant downsides

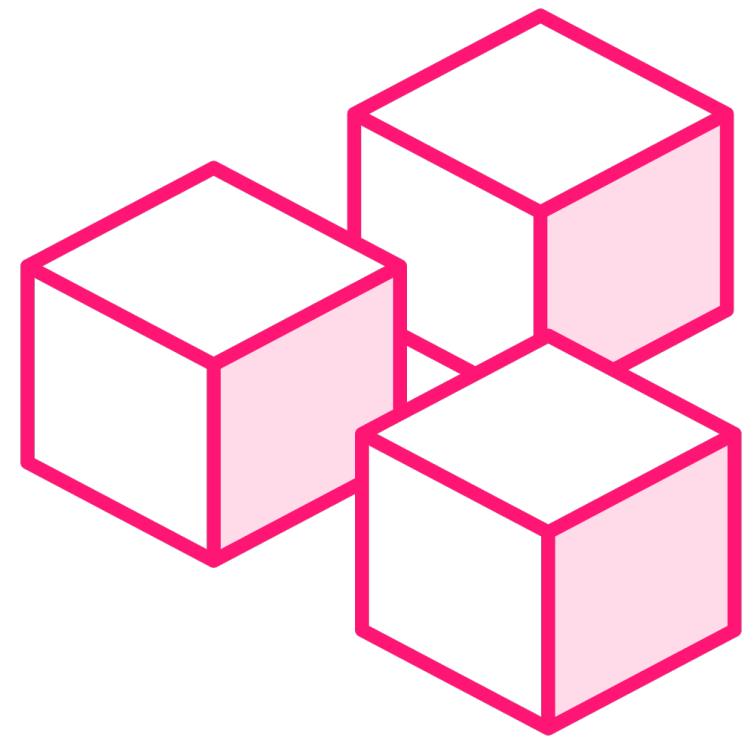


Extending built-in objects is unwise in case the object changes



Global objects are convenient, but can easily be overwritten





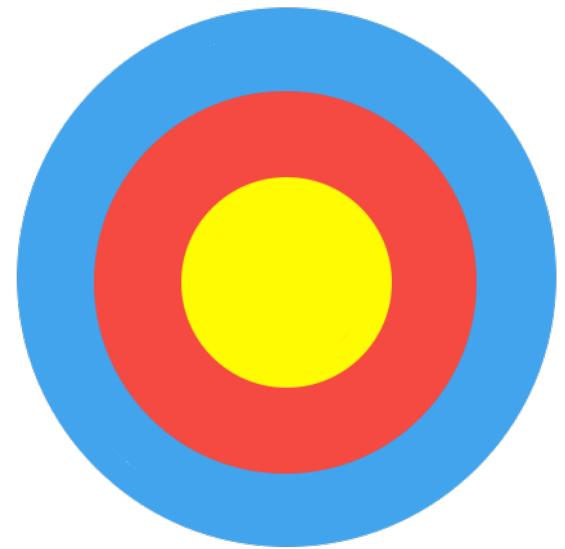
**Modules eliminate the worst aspects of code
based on globals**



Several different module specifications evolved



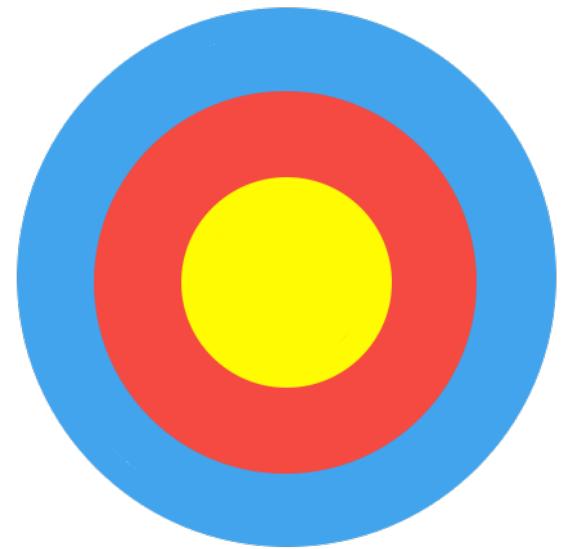
Several different module specifications evolved



AMD



Several different module specifications evolved



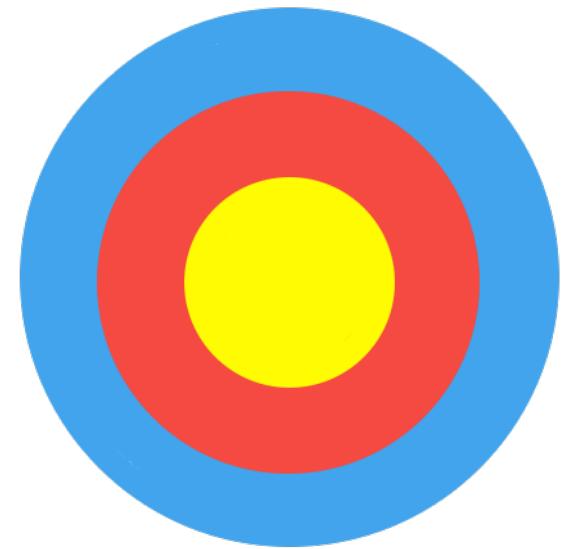
AMD



CommonJS



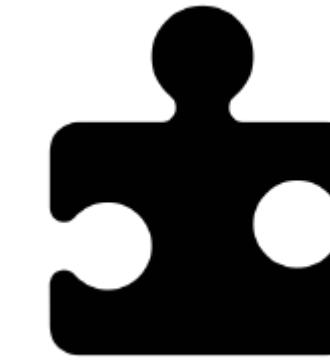
Several different module specifications evolved



AMD



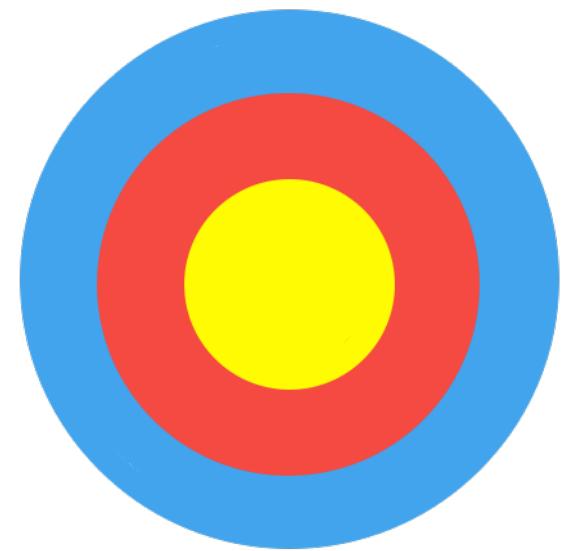
CommonJS



UMD



Several different module specifications evolved



AMD



CommonJS

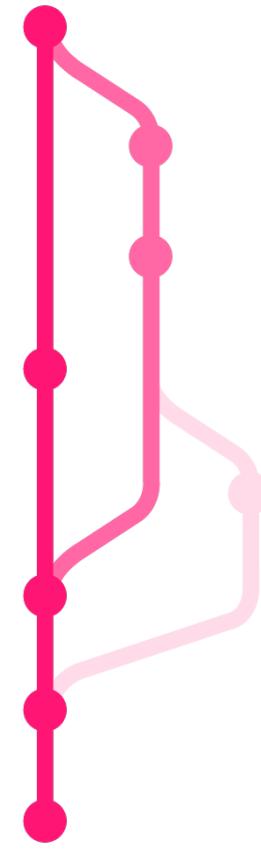


UMD



ESM





The history of modules in JavaScript is far from straight-forward.

It's useful to know the differences between them.



A vibrant hot air balloon with a patterned envelope of red, yellow, orange, and purple stripes is centered in the upper left portion of the image. It is flying over a lush green vineyard with rows of grapevines. In the background, there are rolling hills covered in dense green forests under a vast sky transitioning from blue to warm orange and yellow hues of a setting sun.

Creating declaration files for global libraries



Creating a Declaration File for a Global Library



**The example project has
separate branches for the
start and end states of each
demo clip**



The branches for this clip are:

- *clip3.3-start*
- *clip3.3-end*



A vibrant hot air balloon with horizontal stripes in purple, yellow, red, and blue is the central focus. It is positioned on the left side of the frame, floating above a lush green vineyard. The landscape extends to a range of hills covered in dense green forests under a vast sky. The sun is low on the horizon, casting a warm, golden glow across the scene.

Creating a Declaration File for an Object-extending Library



Creating a Declaration File for an Object-extending Library



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Creating a Declaration File for an ESM Library



Creating a Declaration File for an ESM Library



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Creating a Declaration File for a CommonJS Library



Creating a Declaration File for a CommonJS Library



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Creating a Declaration File for an AMD Library



Creating a Declaration File for an AMD Library



A vibrant hot air balloon with a multi-colored envelope (purple, yellow, red, blue) is the central focus, positioned on the left side of the frame. It is flying over a lush green vineyard with numerous rows of grapevines. In the background, there are rolling hills covered in dense green forests under a vast sky transitioning from blue to warm orange and yellow hues of a setting sun.

Creating a Declaration File for a UMD Library



Creating a Declaration File for a UMD Library



Summary



In this module we covered the variations in declaration syntax when targeting different kinds of libraries and module systems.



Summary



Kinds of library:



Summary



Kinds of library:

- Global



Summary



Kinds of library:

- Global
- Extends built-in objects



Summary



Kinds of library:

- Global
- Extends built-in objects
- Modular



Summary



Kinds of module:



Summary



Kinds of module:

- CommonJS



Summary



Kinds of module:

- CommonJS
- AMD



Summary



Kinds of module:

- CommonJS
- AMD
- ES Modules



Summary



We created declaration files for all of these different kinds of library and module.



Up Next:

Publishing Declaration Files

