## Building and Deployment: Task Runners: Grunt and Gulp

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#### Task Runners

- Configure the tasks once, and rerun it automatically as many times as needed
- NPM scripts written in package.json to execute tasks
- Several task runners out there: Grunt, Gulp, Cake, Brunch, Broccoli
- Build systems for the web

### JavaScript Task Runners

Grunt

**Configuration over Code** 



Gulp

**Code over Configuration** 





## Web Tools: Task Runners: Grunt

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### File Globbing Patterns

- Grunt uses filename expansion (globbing)
  - \* matches any number of characters, but not /
  - ? Matches a single character, but not /
  - \*\* matches any number of characters, including /, as long as it's the only thing in a path part
  - {} allows for comma-separated list of "or" expressions
  - ! At the beginning of a pattern will negate the match



# Web Tools: Task Runners: Gulp

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### **Gulp Streams**

- gulp.src(): function that takes file globs and creates a stream of objects that represent the files
- pipe(): Allows the stream to be piped through a function
- gulp.dest(): specifies the destination of the changed files

