# Assignment-6


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# 1 Background Research

## 1.1 SASS (Syntactically Awesome Style Sheets)

SASS is a CSS preprocessor that extends CSS with features like variables, mixins, nested rules, and more. It enhances CSS authoring by providing a cleaner and more organized syntax, which leads to easier maintenance and scalability of stylesheets.

## 1.2 Gulp Task Runner

Gulp is a task runner built on Node.js that automates repetitive tasks in web development workflows. It simplifies tasks like file concatenation, minification, compilation, and more, allowing developers to focus on writing code rather than managing build processes.

# 2 Installation and Setup

- Installed Node.js and NPM on my local machine.
- Initialized a new Node.js project and installed Gulp globally and locally using NPM.

# 3 Setting up the SASS Pipeline

- Created a directory structure for the project and organized SASS files under `src/scss`.
- Set up a `Gulpfile.js` to define tasks for compilation, autoprefixing, compression, and watching SASS files.
- Configured Gulp plugins such as `gulp-sass`, `gulp-autoprefixer`, and `gulp-clean-css` for each step of the pipeline.

# 4 Task Definitions

## 4.1 Compilation

```
gulp.task('compile-sass', function() {
  return gulp.src('src/scss/**/*.scss')
    .pipe(sass().on('error', sass.logError))
    .pipe(gulp.dest('dist/css'));
});
```

## 4.2 Autoprefixing

```
gulp.task('autoprefix-css', function() {
  return gulp.src('dist/css/*.css')
    .pipe(autoprefixer({
```

```
      overrideBrowserslist: ['last 2 versions'],
      cascade: false
    }))
    .pipe(gulp.dest('dist/css'));
});
```

### 4.3 Compression

```
gulp.task('minify-css', function() {
  return gulp.src('dist/css/*.css')
    .pipe(cleanCSS())
    .pipe(gulp.dest('dist/css'));
});
```

### 4.4 Watching

```
gulp.task('watch-sass', function() {
  gulp.watch('src/scss/**/*.scss', gulp.series('compile-sass', 'auto
});
```

## 5 Running the Pipeline

- Executed the defined Gulp tasks using the command line interface (`gulp compile-sass`, `gulp autoprefix-css`, `gulp minify-css`, `gulp watch-sass`).
- Observed successful compilation, autoprefixing, compression, and watching for changes in SASS files.

## 6 Testing and Debugging

- Tested the SASS pipeline with various types of SASS files, including variables, mixins, and nested styles.
- Debugged any issues or errors encountered during the setup or execution of the pipeline and troubleshooted them effectively.

## 7 Conclusion

This assignment provided hands-on experience in setting up and configuring a SASS pipeline with Gulp. By understanding SASS concepts and leveraging Gulp's automation capabilities, the development workflow was streamlined and optimized. The assignment helped enhance proficiency in CSS preprocessing and automation, contributing to more efficient web development practices.

# 8 Additional Resources

- SASS Official Website
- Gulp Official Website
- Online tutorials, forums.