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Interfaces of the generated prototypes

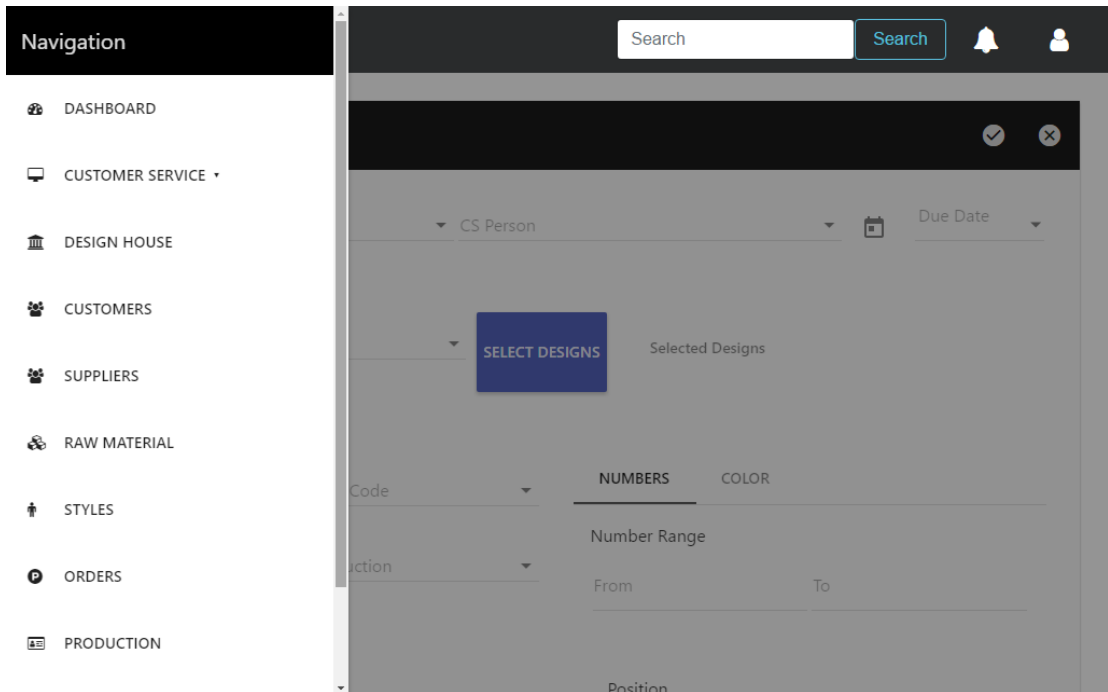


Figure Dashboard UI view

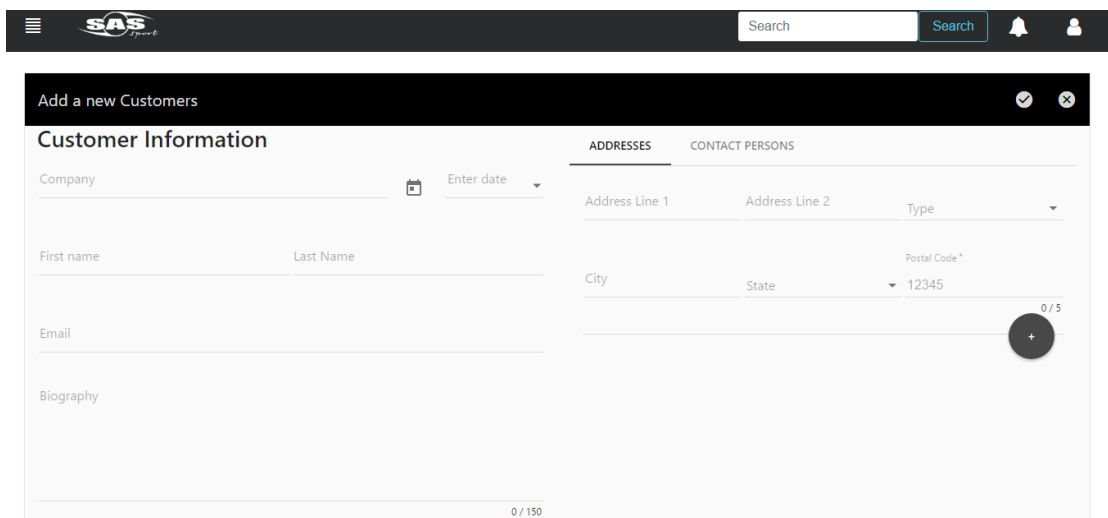












Figure UI view of a CRUD operation

Customers

search X

First Name	Last Name	Company	Email	Gender	
Harold	Ross	43.35.142.229	hross0@ucla.edu	Male	 
Larry	Greene	88.94.128.69	lgreene1@deviantart.com	Male	 
Christina	Mccoy	85.233.126.107	cmccoy2@blogs.com	Female	 
Angela	Jenkins	119.11.165.191	ajenkins3@nsw.gov.au	Female	 
Ralph	Wilson	218.219.170.91	rwilson4@google.es	Male	 

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Figure UI components generated for customer listing

Appendix B

Source code Segments

```
import { FileManager } from './file.manager';
import { angularjs } from '../language-drivers/angularjs';

export class FES {

    constructor() {
        this.f = new FileManager();
    }

    init() {
        this.initAppGenerationFlow();
    }

    initAppGenerationFlow() {
        this.getFileList();

        if (this.schemaFiles.indexOf('flow.schema.json') == -1) {
            throw new Error("flow.schema.json not found in schema directory");
        }

        if (this.schemaFiles.indexOf('models.schema.json') >= 0) {
            this.parseModels();
        }
        if (this.schemaFiles.indexOf('models.schema.json') >= 0) {
            this.parseModels();
        }

        this.parseFlow();

        var frontEnd = new angularjs(this.flowJSON, this.modelsJSON);
    }

    getFileList() {
        this.schemaFiles = this.f.getList('schema');
    }

    parseModels() {
        this.modelsJSON = this.f.getJsonFileContent('schema/models.schema.json');
        this.modelsJSON.relationships = [];

        for (var model of this.modelsJSON.models) {
```

Figure Application initiation code

```

var path = require('path');
var fs = require('fs-extra');
var ejs = require('ejs');

export class FileManager {

  constructor() {
    this.checkForPreviousBuilds();
  }

  checkForPreviousBuilds() {
    try {
      console.log(this.fileMnager.getFileContent('dist/front-
end/package.json'));
      this.doFrontendReplace = true;
    } catch (e) {
      this.doFrontendReplace = false;
      console.log("No Previous Fronend Builds");
    }
    try {
      this.fileMnager.getFileContent('dist/back-end/package.json');
      this.doBackendReplace = true;
    } catch (e) {
      this.doBackendReplace = false;
      console.log("No Previous Backend Builds");
    }
  }

  getList(location) {
    return fs.readdirSync(path.resolve(__dirname, '../..' + location));
  }

  getFileContent(location) {
    return fs.readFileSync(path.resolve(__dirname, '../..' + location),
'utf8');
  }

  getJsonFileContent(location) {
    return JSON.parse(this.getFileContent(location));
  }

  rename(oldname, newname){
    fs.renameSync(path.resolve(__dirname, '../..' + oldname),
path.resolve(__dirname, '../..' + newname));
  }
}

```

Figure File Manager Code

```

import { FileManager } from '../lib/file.manager';
import { ViewGenerator } from './view.generator';

export class angularjs {

  constructor(flow, models) {

    this.flow = flow;
    this.models = models;

    this.app = {
      modules: []
    };

    this.topLevelModules = [];

    this.viewGenerator = new ViewGenerator(this.models);
    this.fileMnager = new FileManager();
    if (!this.fileMnager.doFrontendReplace) {
      this.copySeed();
    }

    this.generateModuleFiles();

  }

  copySeed() {
    this.fileMnager.copyFiles('src/language-drivers/angularjs/seed/project/',
'dist/front-end/');
  }

  generateModuleFiles() {
    this.generateModule(this.flow);

    //this.fileMnager.delete('dist/front-end/src/client/app/modules/');
    //write module files
    for (let m of this.app.modules) {
      if (m.id != 'main') {
        for (let f of m.files) {
          this.fileMnager.createOrOverwrite('dist/front-
end/src/client/app/modules/' + m.path.replace(m.id, '') + '/' + m.id + '/' +
f.file, f.content);
        }
      }
    }
  }
}

```

Figure Language Driver for Angular (sample code)