**(\*\* Already assumed node is installed \*\*)**

**Step1: Create and edit Ionic application**Create mysql database and customer\_checkin, user\_login, and license\_details tables

**CREATE** **TABLE** `customer\_checkin` (

`id` **int**(11) **NOT** **NULL** **AUTO\_INCREMENT**,

`firstname` **varchar**(75) **NOT** **NULL**,

`lastname` **varchar**(75) **NOT** **NULL**,

`email` **varchar**(125) **DEFAULT** **NULL**,

`birthday` **date** **DEFAULT** **NULL**,

`cellphone` **varchar**(15) **DEFAULT** **NULL**,

`status` **tinyint**(1) **NOT** **NULL**,

`created\_at` **datetime** **NOT** **NULL** **DEFAULT** **current\_timestamp**(),

`comments` **varchar**(255) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`id`)

) ENGINE=InnoDB **AUTO\_INCREMENT**=9 **DEFAULT** CHARSET=latin1

**CREATE** **TABLE** `user\_login` (

`id` **int**(11) **NOT** **NULL** **AUTO\_INCREMENT**,

`name` **varchar**(75) **NOT** **NULL**,

`email` **varchar**(125) **NOT** **NULL**,

`password` **varchar**(255) **NOT** **NULL**,

`created\_at` **datetime** **NOT** **NULL** **DEFAULT** **current\_timestamp**(),

**PRIMARY** **KEY** (`id`)

) ENGINE=InnoDB **AUTO\_INCREMENT**=5 **DEFAULT** CHARSET=latin1

**CREATE** **TABLE** `license\_details` (

`id` **int**(11) **NOT** **NULL** **AUTO\_INCREMENT**,

`site\_id` **varchar**(75) **NOT** **NULL**,

`site\_key` **varchar**(125) **NOT** **NULL**,

`email\_domain` **varchar**(75) **NOT** **NULL**,

`license\_limit` **INT** **NOT** **NULL,**

**PRIMARY** **KEY** (`id`)

) ENGINE=InnoDB **AUTO\_INCREMENT**=1 **DEFAULT** CHARSET=latin1

**Step2: Create and edit Ionic application**

Create a new directory on the C drive for the project, open a command prompt, and go to it  
C:\> mkdir Ionic-Express-MySQL

Change to the new directory:  
C:\>cd C:\Ionic-Express-MySQL

Verify pre-requisites:  
C:\Ionic-Express-MySQL>npm --version  
6.11.3

C:\Ionic-Express-MySQL>node --version  
v10.16.2

Install Ionic and Cordova  
C:\Ionic-Express-MySQL>npm install -g ionic cordova

C:\Ionic-Express-MySQL>ionic start IonicForm blank --type=angular

C:\Ionic-Express-MySQL>cd .\IonicForm  
  
C:\Ionic-Express-MySQL\IonicForm>ionic cordova plugin add cordova-sqlite-storage  
C:\Ionic-Express-MySQL\IonicForm>npm install --save @ionic/storage

C:\Ionic-Express-MySQL\IonicForm>ionic generate interface public/user  
C:\Ionic-Express-MySQL\IonicForm>ionic generate interface public/auth-response  
C:\Ionic-Express-MySQL\IonicForm>ionic generate page public/login  
C:\Ionic-Express-MySQL\IonicForm>ionic generate page public/register  
C:\Ionic-Express-MySQL\IonicForm>ionic generate page members/dashboard  
C:\Ionic-Express-MySQL\IonicForm>ionic generate page members/disclaimer  
C:\Ionic-Express-MySQL\IonicForm>ionic generate page members/download  
C:\Ionic-Express-MySQL\IonicForm>ionic generate page members/license  
C:\Ionic-Express-MySQL\IonicForm>ionic generate page members/signature  
C:\Ionic-Express-MySQL\IonicForm>ionic generate service services/authentication  
C:\Ionic-Express-MySQL\IonicForm>ionic generate guard guards/auth  
(\* Use CanActivate as the option)  
C:\Ionic-Express-MySQL\IonicForm>ionic generate guard guards/nonauth  
(\* Use CanActivate as the option)  
C:\Ionic-Express-MySQL\IonicForm>ionic generate module members/member-routing –flat  
C:\Ionic-Express-MySQL\IonicForm>mkdir resources  
C:\Ionic-Express-MySQL\IonicForm>mkdir src\assets\img

\*\*File Edits:  
src/app/app.component.html  
src/app/app.component.ts  
src/app/app.module.ts  
src/app/app-routing.module.ts  
src/app/guards/auth.guard.ts  
src/app/guards/nonauth.guard.ts  
src/app/members/dashboard/dashboard.page.html  
src/app/members/dashboard/dashboard.page.ts  
src/app/members/disclaimer/disclaimer.page.html  
src/app/members/disclaimer/disclaimer.page.ts  
src/app/members/download/download.page.html  
src/app/members/download/download.page.scss  
src/app/members/download/download.page.ts  
src/app/members/license/license.page.html  
src/app/members/license/license.page.scss  
src/app/members/license/license.page.ts  
src/app/members/member-routing.module.ts  
src/app/members/signature/signature.module.ts  
src/app/members/signature/signature.page.html  
src/app/members/signature/signature.page.scss  
src/app/members/signature/signature.page.ts  
src/app/public/auth-response.ts  
src/app/public/login/login.module.ts  
src/app/public/login/login.page.html  
src/app/public/login/login.page.scss  
src/app/public/login/login.page.ts  
src/app/public/register/register.module.ts  
src/app/public/register/register.page.html  
src/app/public/register/register.page.scss  
src/app/public/register/register.page.ts  
src/app/public/user.ts  
src/app/services/authentication.service.ts

\*\*Directory Deleted  
src/app/home

**Step3: Create and edit Express server application**

C:\Ionic-Express-MySQL>mkdir ExpressServer

C:\Ionic-Express-MySQL>cd .\ExpressServer

C:\Ionic-Express-MySQL\ExpressServer>npm init –y

C:\Ionic-Express-MySQL\ExpressServer>npm install --save express body-parser mysql bcryptjs jsonwebtoken cors compression helmet dotenv-safe fs

Create C:\Ionic-Express-MySQL\ExpressServer\index.js file and define database connection and routes  
Edit C:\Ionic-Express-MySQL\ExpressServer\package.json to add start script

**Dev vs Prod environments**In package.json, edit:  
"build": "ng build",

Change to this for Prod:  
"build": "ng build --prod",

`ng build --prod` replaces `environment.ts` with `environment.prod.ts`.

**To start application:**Start express (In first command window):  
C:\>cd C:\Ionic-Express-MySQL\ExpressServer  
C:\Ionic-Express-MySQL\ExpressServer>npm start

Start ionic (In second command window):  
C:\>cd C:\Ionic-Express-MySQL\IonicForm  
C:\Ionic-ExpressMySQL\IonicForm>ionic serve

Open browser to <http://localhost:8100> (may open by default)

**Modifying the theme**  
Guide: <https://market.ionicframework.com/themes/ionic4-start-theme>

\*\*Theme Edits:  
src/global.scss

**Creating Public/Private Keys**Reference: http://travistidwell.com/jsencrypt/demo/  
Create a 1024 bit key, copy contents into files:  
C:\Ionic-Express-MySQL\ExpressServer\private.key  
C:\Ionic-Express-MySQL\ExpressServer\public.key

**Create the JWT service module**Reference: https://medium.com/@siddharthac6/json-web-token-jwt-the-right-way-of-implementing-with-node-js-65b8915d550e  
C:\Ionic-Express-MySQL\ExpressServer\jwt-module.js

**Publishing the Ionic app**C:\Ionic-Express-MySQL\IonicForm>npm install -g @angular/cli@latest

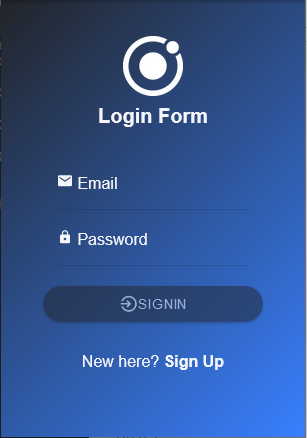
Verify:  
C:\Ionic-Express-MySQL\IonicForm>ng –version

C:\Ionic-Express-MySQL\IonicForm>ng add @angular/pwa --project app

C:\Ionic-Express-MySQL\IonicForm>ionic build --prod

C:\Ionic-Express-MySQL\IonicForm>cd www

Zip and upload contents of www folder to webserver

**Pages:**  
login:  


register:  
