HYBRID APPLICATION DEVELOPMENT

JOURNAL

MALAD KANDIVALI EDUCATION SOCIETY'S

NAGINDAS KHANDWALA COLLEGE OF COMMERCE, ARTS & MANAGEMENT STUDIES & SHANTABEN NAGINDAS KHANDWALA COLLEGE OF SCIENCE
MALAD [W], MUMBAI – 64
AUTONOMOUS INSTITUTION
(Affiliated To University Of Mumbai)
Reaccredited 'A' Grade by NAAC | ISO 9001:2015 Certified

CERTIFICATE

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Roll No: 333 Programme: BSc CS Semester: III

This is certified to be a bonafide record of practical works done by the above student in the college laboratory for the course **Hybrid Application Development(classcode: 2037UCSMD)** for the partial fulfilment of Third Semester of BSc IT/CS during the academic year 2020-21.

The journal work is the original study work that has been duly approved in the year 2020-21 by the undersigned.

External Examiner

Mr. Gangashankar Singh
(Subject-In-Charge)

Date of Examination: (College Stamp)

Class: S.Y. B.Sc.Cs Sem- III Roll No: 333

Subject: Hybrid Application Development

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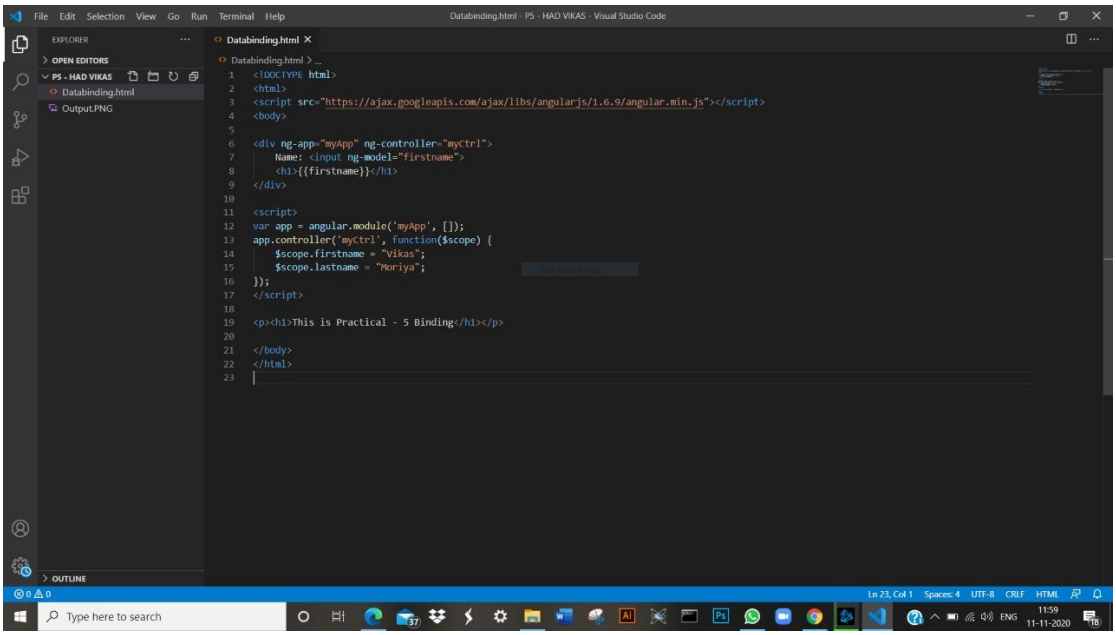
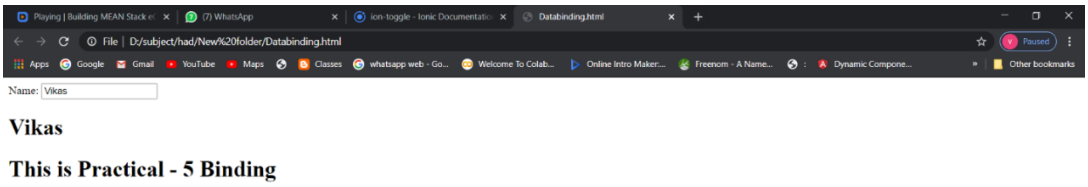
PRACTICAL NO. 1

Data Binding in Angular JS

Data binding in AngularJS is the synchronization between the model and the view.
The HTML container where the AngularJS application is displayed, is called the view. The view has access to the model, and there are several ways of displaying model data in the view. We can use the ng-bind directive, which will bind the inner HTML of the element to the specified model property

Code :-



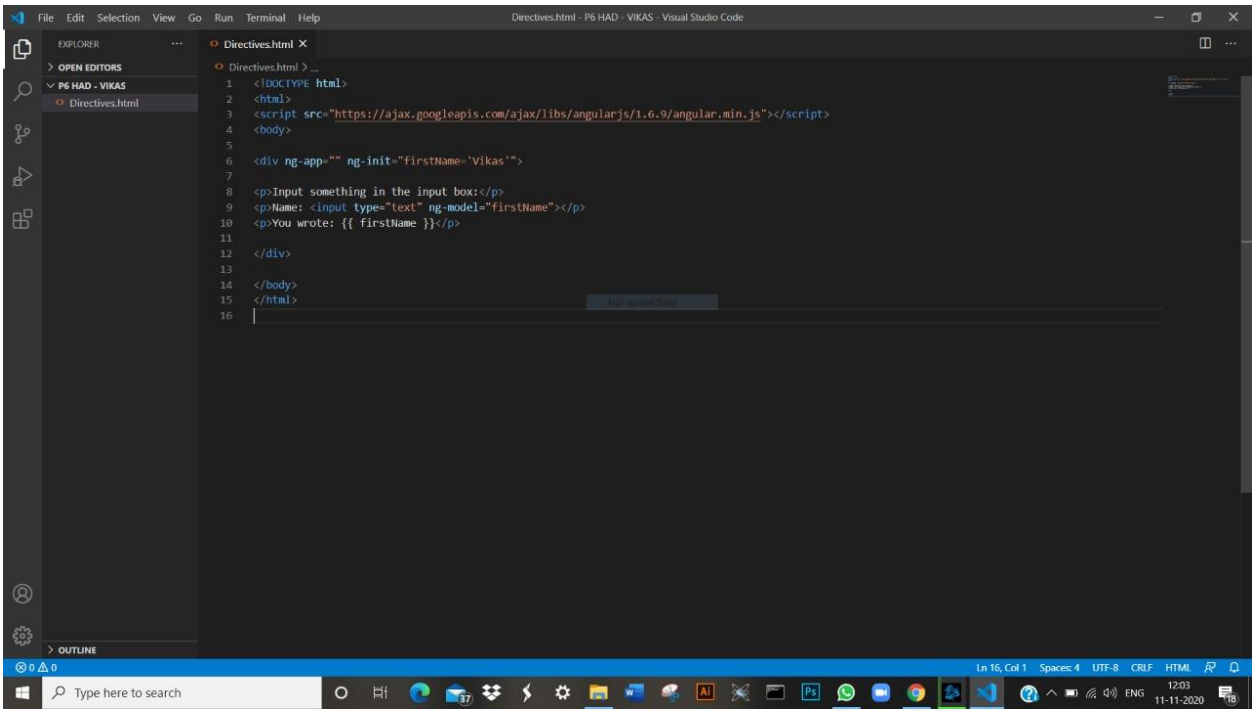


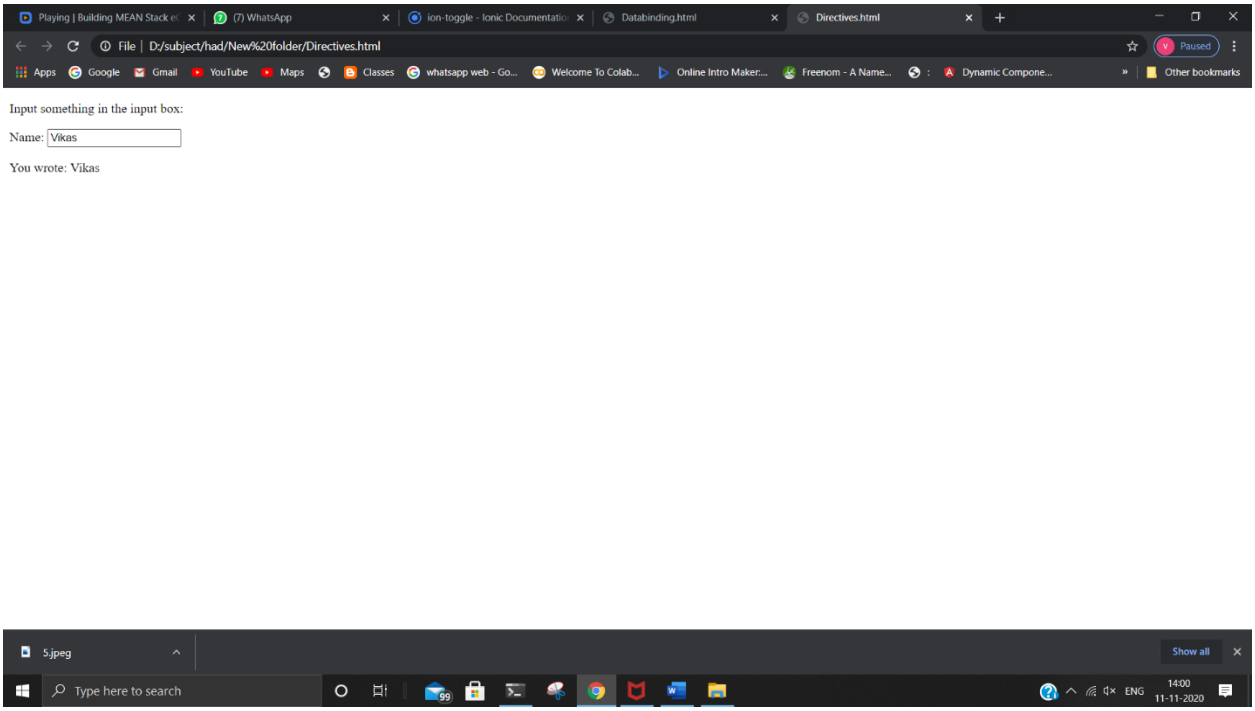
PRACTICAL NO. 2

Directives in Angular JS

- AngularJS lets you extend HTML with new attributes called Directives. AngularJS has a set of built-in directives which offers functionality to your applications.
- AngularJS directives are extended HTML attributes with the prefix ng-.
- The ng-app directive initializes an AngularJS application.

Code :-



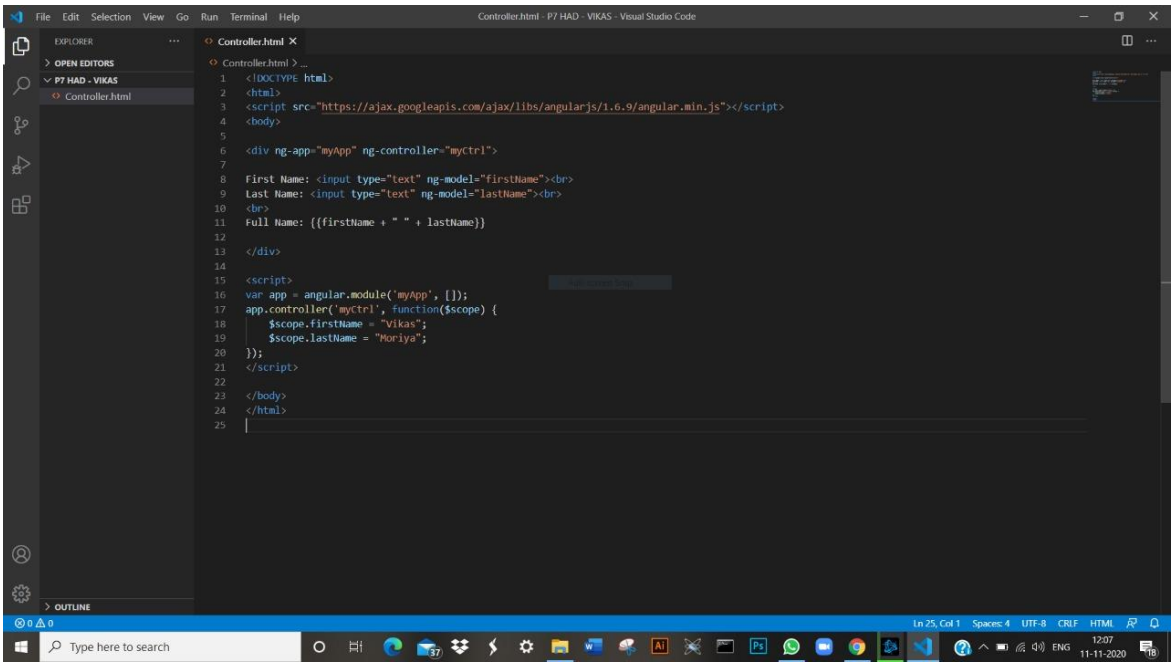


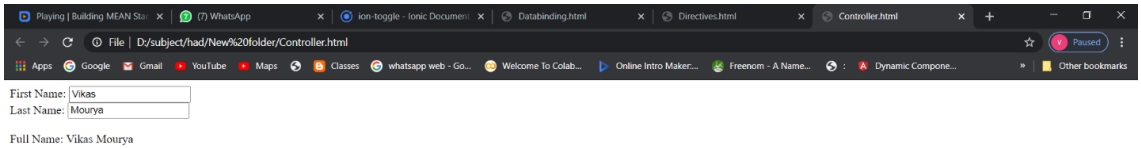
PRACTICAL NO. 3

Controllers in Angular JS

- AngularJS controllers control the data of AngularJS applications. AngularJS controllers are regular JavaScript Objects.
- AngularJS applications are controlled by controllers. The ng-controller directive defines the application controller. A controller is a JavaScript Object, created by a standard JavaScript object constructor.
- AngularJS will invoke the controller with a $scope object. In AngularJS, $scope is the application object (the owner of application variables and functions). The controller creates two properties (variables) in the scope (first Name and last Name).
- The ng-model directives bind the input fields to the controller properties (first Name and last Name)

Code :-

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Maps
Classes
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Online Intro Maker:...
Freenom - A Name...
Dynamic Compone...
Other bookmarks
First Name: Vikas
Last Name: Mourya
Full Name: Vikas Mourya


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11-11-2020

PRACTICAL NO. 4

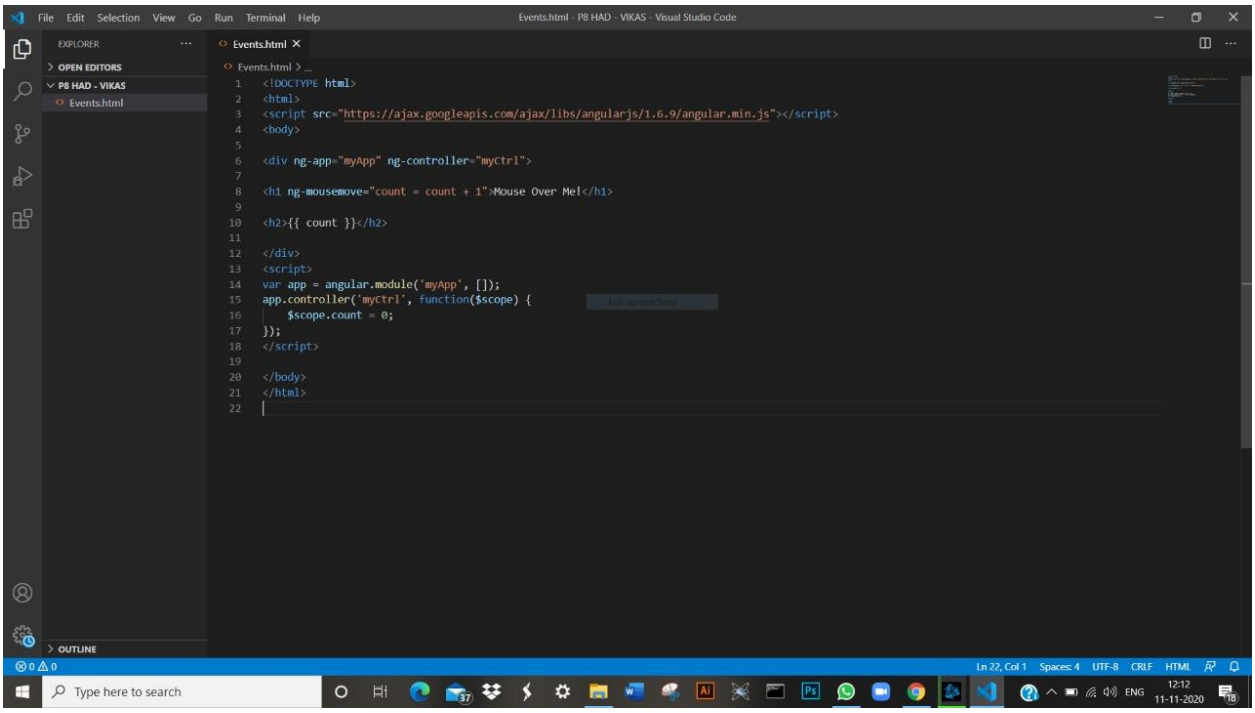
Events in Angular JS

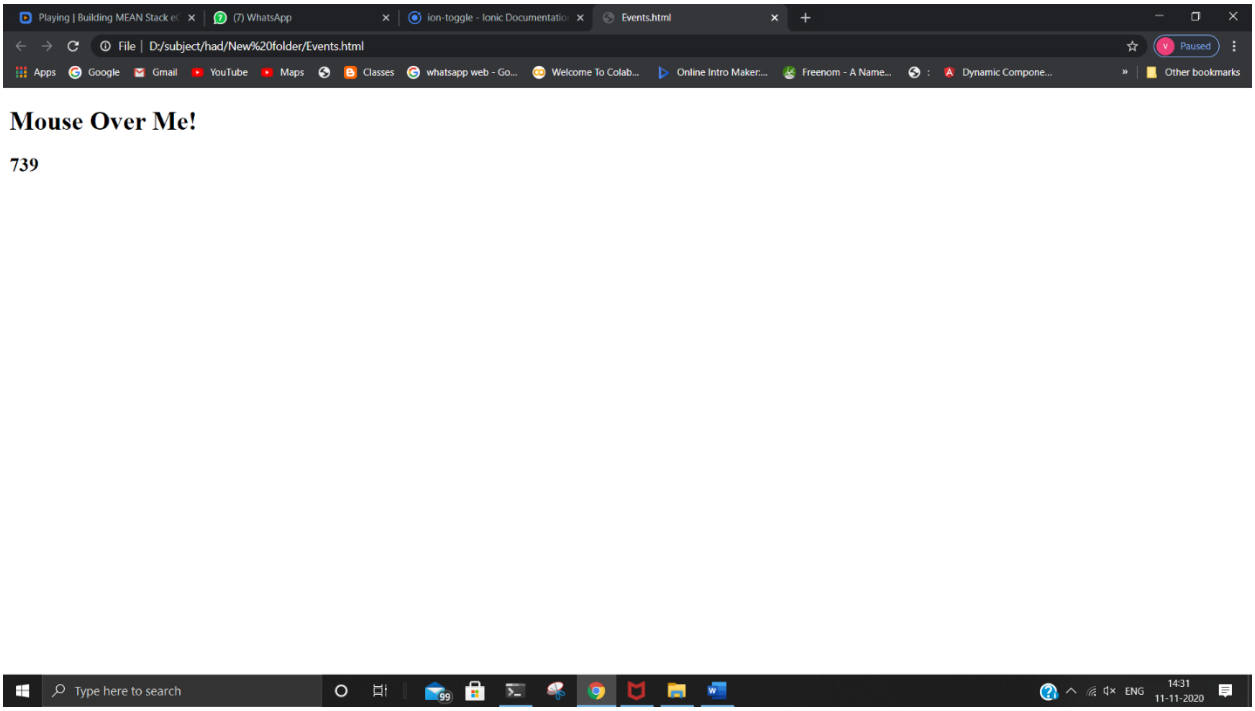
- AngularJS has its own HTML events directives. The event directives allows us to run AngularJS functions at certain user events.
- An AngularJS event will not overwrite an HTML event, both events will be executed.
- Mouse Events

Mouse events occur when the cursor moves over an element, in this order:

1. ng-mouseover
2. ng-mouseenter
3. ng-mousemove
4. ng-mouseleave
5. Here I have used the ng-mousemove event to perform the Events in Angular JS.

Code :-

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(7) WhatsApp
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Events.html
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Gmail
YouTube
Maps
Classes
whatsapp web - Go...
Welcome To Colab...
Online Intro Maker:...
Freenom - A Name...
Dynamic Compone...
Other bookmarks
Mouse Over Me!
739
Type here to search
ENG
14:31
11-11-2020

PRACTICAL NO. 5

What is Hybrid App Development?

This solution is a blend, hence the name hybrid, of both native and web solutions. Where the core of the application is written using web technologies (HTML, CSS, and JavaScript), which are then encapsulated within a native application. Through the use of plugins, these applications can have full access to the mobile device's features. To better understand this approach, let's break down how it all fits together.

The heart of a hybrid-mobile application is still just an application that is written with HTML, CSS, and JavaScript. However, instead of the app being shown within the user's browser, it is run from within a native application and its own embedded browser, which is essentially invisible to the user. For example, an iOS application would use the WKWebView to display our application, while on Android it would use the WebView element to do the same function.

This code is then embedded into a native application wrapper using a solution like Apache Cordova (also known as PhoneGap) or Ionic's Capacitor. These solutions create a native shell application that is just the platform's webview component in which it will load your web application. This gives you the ability to create and publish true native applications that can be submitted to each of the platform's app stores for sale.

Additionally, both Cordova and Capacitor have a plugin system that allows you to extend beyond the limitations of the 'browser' and access the full suite of capabilities of a user's mobile device. So, if you wanted to use TouchID on an iOS device as a login option, or wanted to connect to a Bluetooth device, this can be easily done by installing a plugin. These plugins are created by a wide range of developers and many are actively supported. Ionic even offers a complete ecosystem of supported plugins as part of its Enterprise solution. So, the limitations of a web-only application are easily overcome, allowing your application to have parity with native applications in their features.

However, there are some drawbacks with this option. Similarly to the web-only application solution, the UI library has to be recreated. Here is where solutions like Ionic, NativeScript, Xamarin, React Native, and others step in. These options all provide robust UI components that look and feel like their native counterparts, giving you a full suite of building blocks for your application.

The only other consideration to take into account is if your application is still running within the device's native browser. If so, you may encounter performance issues or other quirks specific to each platform or operating version.

How to create and ionic web app:

The requirement for creating an Ionic web app is:

Node.js for interacting with the Ionic ecosystem Download the LTS version here.

A code editor for... writing code! We are fans of Visual Studio Code.

Command-line interface/terminal (CLI):

Windows users: for the best Ionic experience, we recommend the built-in command line (cmd) or the PowerShell CLI, running in Administrator mode.

Mac/Linux users, virtually any terminal will work.

To open a terminal in Visual Studio Code, go to Terminal -> New Terminal.

$ npm install -g @ionic/cli native-run Cordova-res. The -g option means install globally.

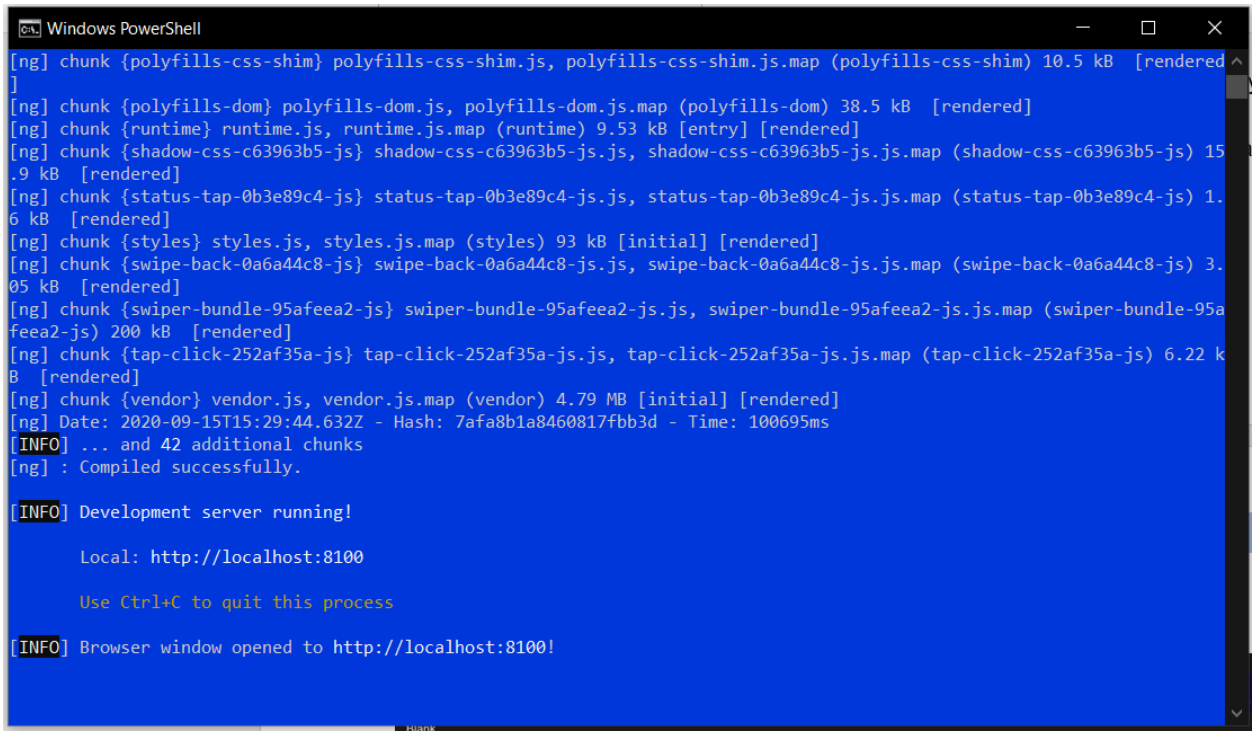
$ ionic start dummy-project tabs

Then it will ask to choose a framework if you want to make it in angular choose angular

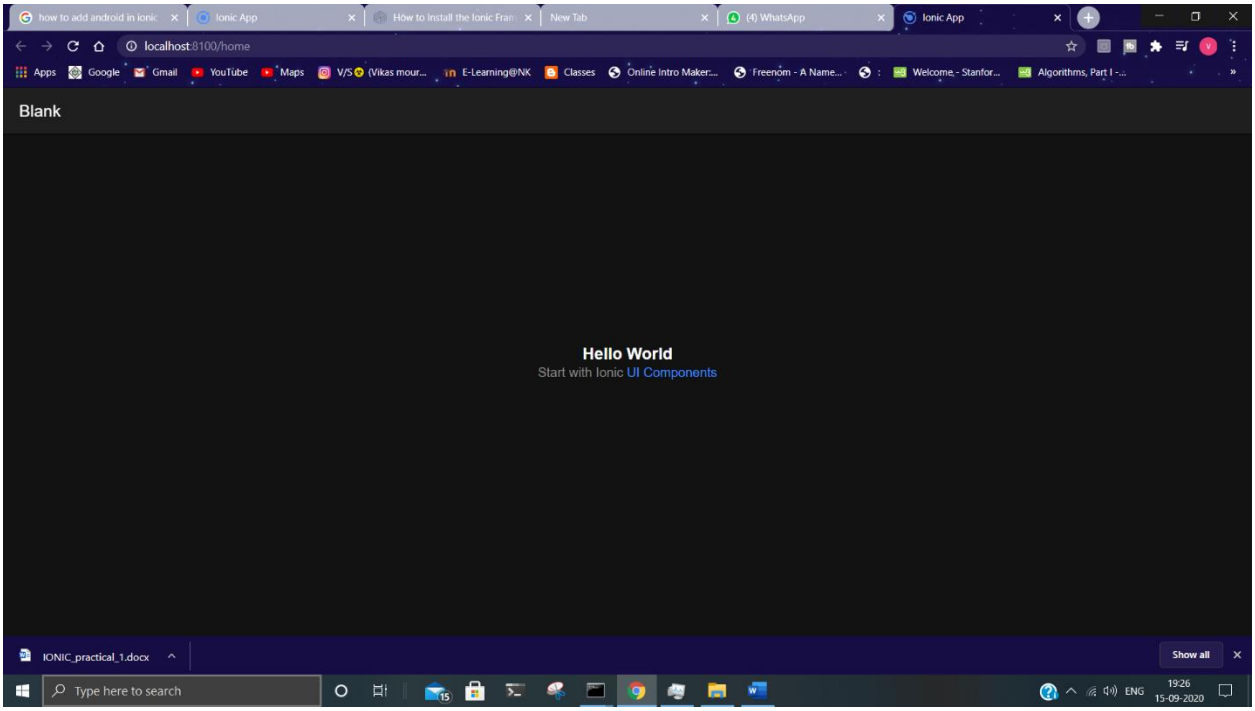
$ cd dummy-project

$ ionic serve.

. To access the web page go on http://localhost:8100



Output for web app


how to add android in ionic
Ionic App
How to Install the Ionic Fram
New Tab
(4) WhatsApp
Ionic App
localhost:8100/home
Apps
Google
Gmail
YouTube
Maps
V/S (Vikas mour...
E-Learning@NK
Classes
Online Intro Maker:...
Freenom - A Name...
Welcome - Stanfor...
Algorithms, Part I -...
Blank
Hello World
Start with Ionic UI Components
IONIC_practical_1.docx
Show all
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ENG
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15-09-2020

PRACTICAL NO. 6

How to create Ionic Android app:

Steps to create an ionic android app:

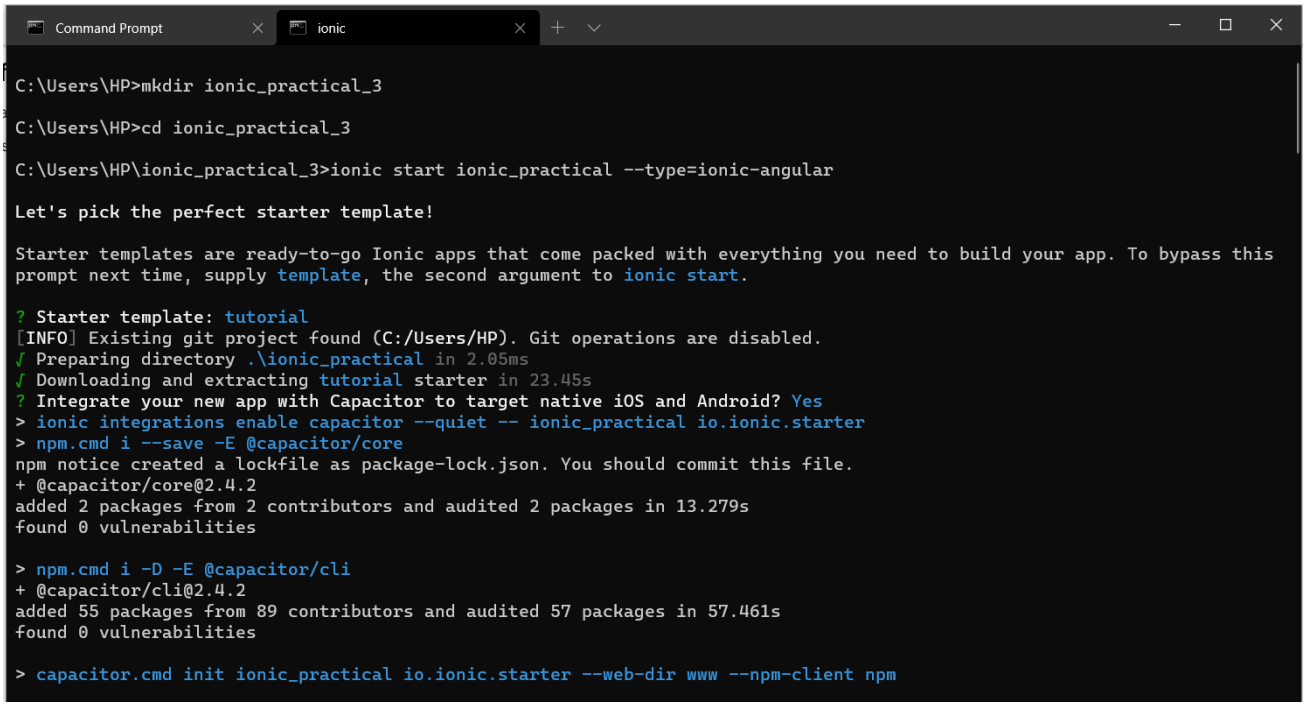
1. After you have built the web app next command you should type is ionic cordova platform add android .This will add and android platform to your web app directory.
2. Now type ionic cordova build android to start building your android app.
3. Now type ionic cordova run android , If you have connect your machine to a phone and turned on USB debugging the app will export to your pc and if you are running an emulator the out will be like this.

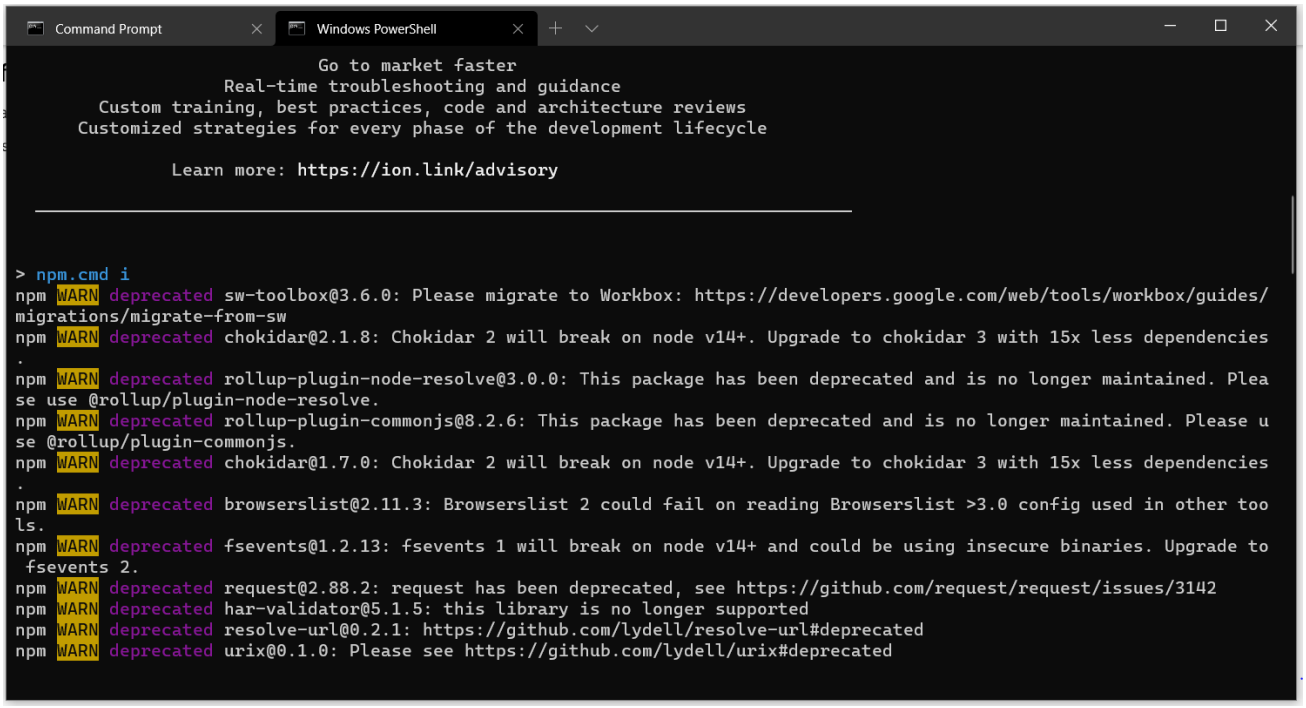
PRACTICAL NO. 7

Steps for how to start project:

1.	**Ionic start project_name**
2.	import new template named as – "Tutorial" --type=ionic-angular
3.	ionic start MyFirstApp Tutorial --type=ionic-angular
4.	Open your folder in CMD by using cd (folder name) now type "ionic serve" in CMD
5.	now open (visual studio application) To add new page in ionic project command - "ionic g pages about"
6.	open the project folder that you had created
7.	In visual studio application open SRC>APP>APP.COMPONENT.TS>APP.MODULE.TS
8.	Now open Pages file in visual studio application/ new CMD window and then open - APP.MODULE.TS folder You will see many code of lines.
9.	Write this command - import { AboutPage } from '../pages/about/about'; In below of the other page on 9th line of the APP.MODULE.TS page.
10.	Now open APP.COMPONENT.TS folder and type this command – import { AboutPage } from '../pages/about/about';
11.	In the APP.MODULE.TS page go to the the "@NgModule Part" (i.e line no 14 of APP.MODULE.TS page) and below the " ListPage " type AboutPage
12.	In the APP.MODULE.TS page go to the the "bootstrap : [Ionic App]"(i.e line no 26 of APP.MODULE.TS page) and below the " ListPage " type AboutPage
13.	. In the APP.COMPONENT.TS page go to the "this.pages" part (i.e. line no 32 of APP.COMPONENT.TS page) and below "title: 'My First List', component: ListPage" type title: 'AboutUs', component: AboutPage
14.	Save all the files

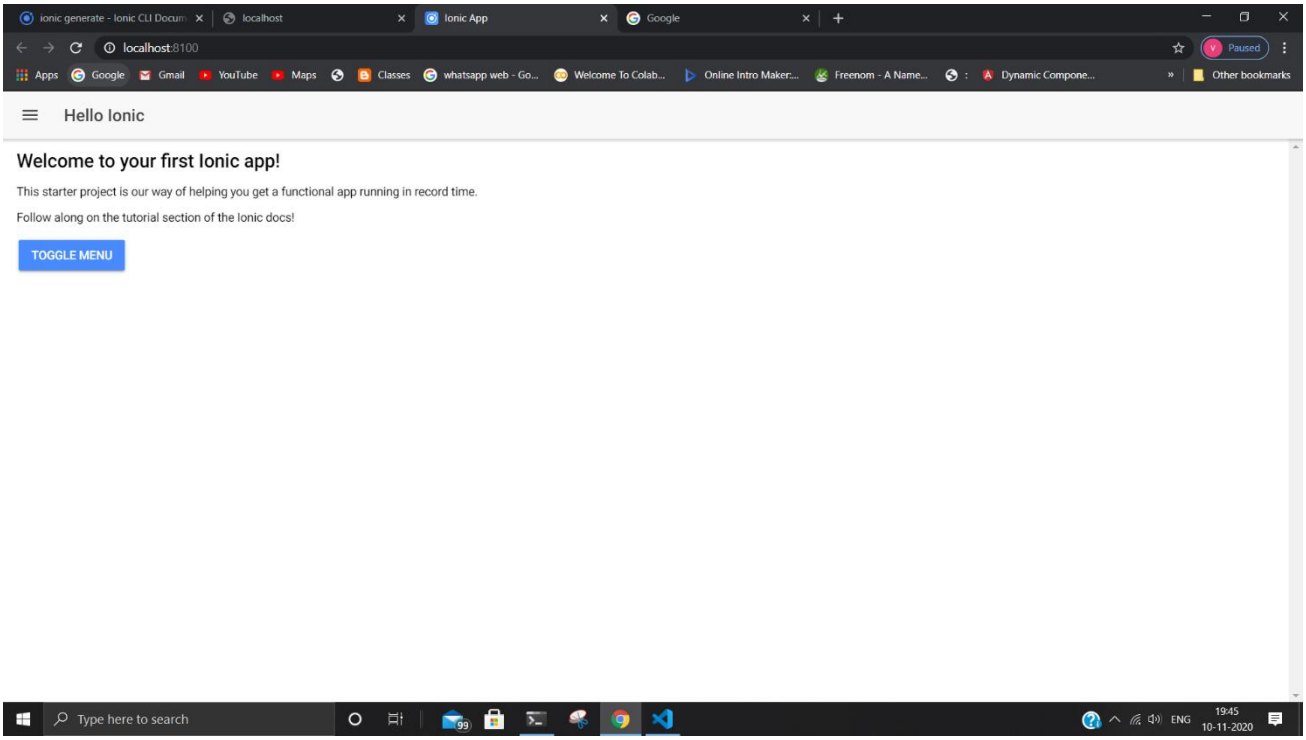
Code: Command execution part

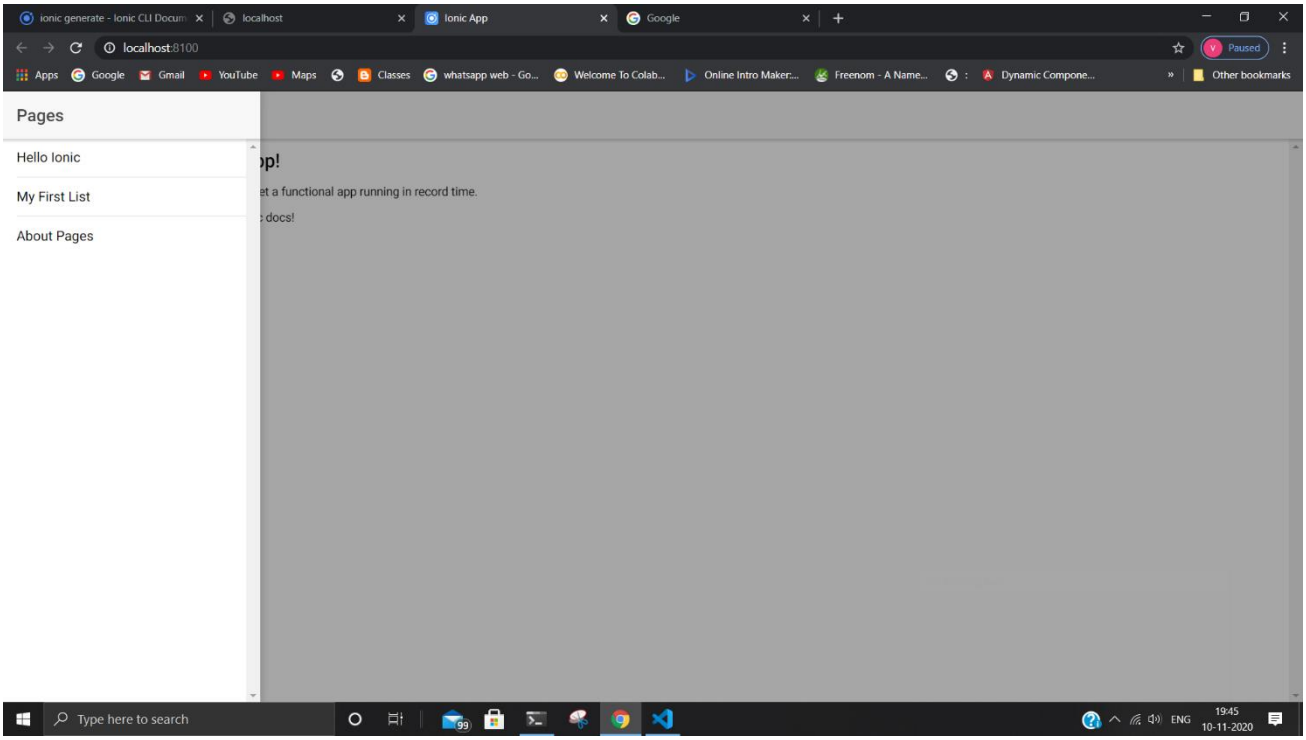

Command Prompt
ionic
C:\Users\HP>mkdir ionic_practical_3
C:\Users\HP>cd ionic_practical_3
C:\Users\HP\ionic_practical_3>ionic start ionic_practical --type=ionic-angular
Let's pick the perfect starter template!
Starter templates are ready-to-go Ionic apps that come packed with everything you need to build your app. To bypass this prompt next time, supply template, the second argument to ionic start.
? Starter template: tutorial
[INFO] Existing git project found (C:/Users/HP). Git operations are disabled.
√ Preparing directory .\ionic_practical in 2.05ms
√ Downloading and extracting tutorial starter in 23.45s
? Integrate your new app with Capacitor to target native iOS and Android? Yes
> ionic integrations enable capacitor --quiet -- ionic_practical io.ionic.starter
> npm.cmd i --save -E @capacitor/core
npm notice created a lockfile as package-lock.json. You should commit this file.
+ @capacitor/core@2.4.2
added 2 packages from 2 contributors and audited 2 packages in 13.279s
found 0 vulnerabilities
> npm.cmd i -D -E @capacitor/cli
+ @capacitor/cli@2.4.2
added 55 packages from 89 contributors and audited 57 packages in 57.461s
found 0 vulnerabilities
> capacitor.cmd init ionic_practical io.ionic.starter --web-dir www --npm-client npm

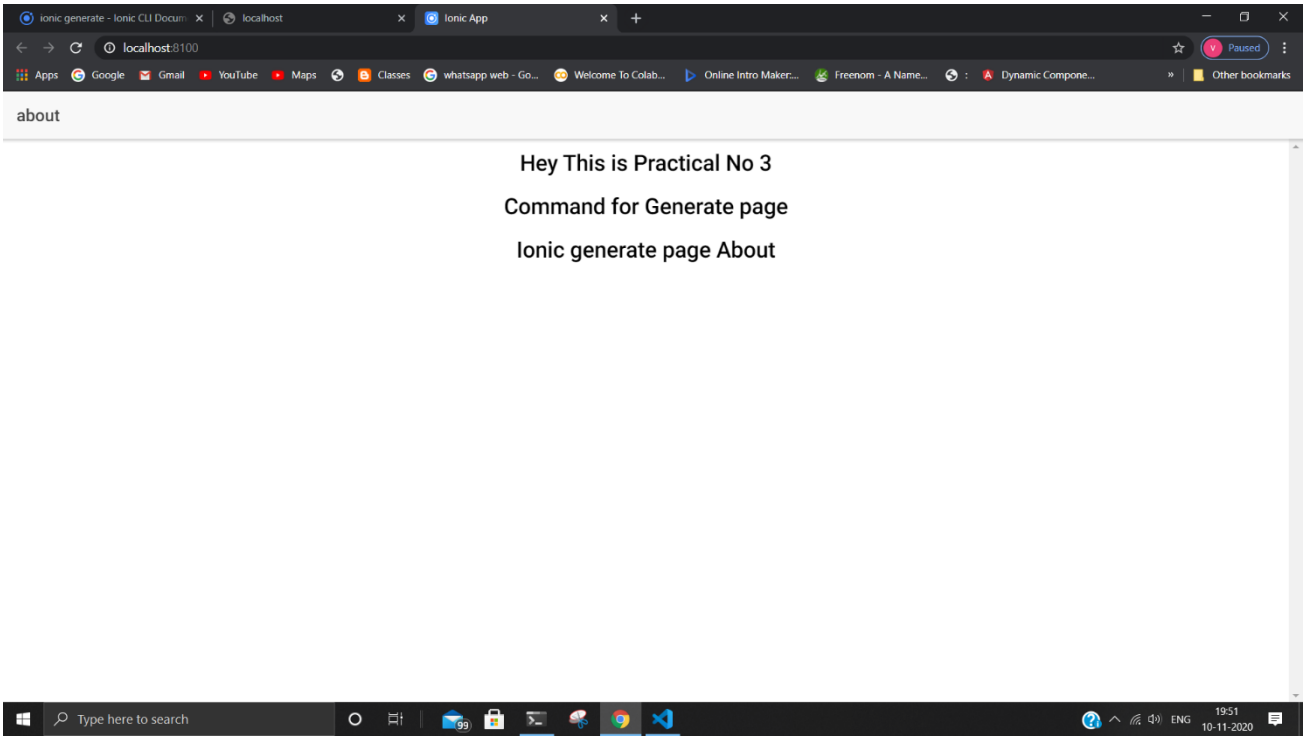

Command Prompt
Windows PowerShell
Go to market faster
Real-time troubleshooting and guidance
Custom training, best practices, code and architecture reviews
Customized strategies for every phase of the development lifecycle
Learn more: https://ion.link/advisory
> npm.cmd i
npm WARN deprecated sw-toolbox@3.6.0: Please migrate to Workbox: https://developers.google.com/web/tools/workbox/guides/migrations/migrate-from-sw
npm WARN deprecated chokidar@2.1.8: Chokidar 2 will break on node v14+. Upgrade to chokidar 3 with 15x less dependencies.
npm WARN deprecated rollup-plugin-node-resolve@3.0.0: This package has been deprecated and is no longer maintained. Please use @rollup/plugin-node-resolve.
npm WARN deprecated rollup-plugin-commonjs@8.2.6: This package has been deprecated and is no longer maintained. Please use @rollup/plugin-commonjs.
npm WARN deprecated chokidar@1.7.0: Chokidar 2 will break on node v14+. Upgrade to chokidar 3 with 15x less dependencies.
npm WARN deprecated browserslist@2.11.3: Browserslist 2 could fail on reading Browserslist >3.0 config used in other tools.
npm WARN deprecated fsevents@1.2.13: fsevents 1 will break on node v14+ and could be using insecure binaries. Upgrade to fsevents 2.
npm WARN deprecated request@2.88.2: request has been deprecated, see https://github.com/request/request/issues/3142
npm WARN deprecated har-validator@5.1.5: this library is no longer supported
npm WARN deprecated resolve-url@0.2.1: https://github.com/lydell/resolve-url#deprecated
npm WARN deprecated urix@0.1.0: Please see https://github.com/lydell/urix#deprecated

```
Command Prompt    Windows PowerShell

C:\Users\HP\ionic_practical_3>cd ionic_practical

C:\Users\HP\ionic_practical_3\ionic_practical>ionic g page about
[OK] Generated a page named about!

C:\Users\HP\ionic_practical_3\ionic_practical>code .

C:\Users\HP\ionic_practical_3\ionic_practical>ionic serve
> ionic-app-scripts.cmd serve --address localhost --port 8100 --livereload-port 35729 --dev-logger-port 53703 --nobrowse
r
[app-scripts] [19:22:43]  ionic-app-scripts 3.2.4
[app-scripts] [19:22:44]  watch started ...
[app-scripts] [19:22:44]  build dev started ...
[app-scripts] [19:22:44]  clean started ...
[app-scripts] [19:22:44]  clean finished in 5 ms
[app-scripts] [19:22:44]  copy started ...
[app-scripts] [19:22:44]  deeplinks started ...
[app-scripts] [19:22:44]  deeplinks finished in 119 ms
[app-scripts] [19:22:44]  transpile started ...
[app-scripts] [19:23:24]  transpile finished in 39.80 s
[app-scripts] [19:23:24]  preprocess started ...
[app-scripts] [19:23:24]  preprocess finished in 5 ms
[app-scripts] [19:23:24]  webpack started ...
[app-scripts] [19:23:43]  copy finished in 59.10 s
[app-scripts] [19:24:03]  webpack finished in 38.59 s
[app-scripts] [19:24:03]  sass started ...
[app-scripts] [19:24:45]  sass finished in 41.84 s
[app-scripts] [19:24:45]  postprocess started ...
[app-scripts] [19:24:46]  postprocess finished in 1.02 s
[app-scripts] [19:24:46]  lint started ...
```

Output :




Pages
Hello Ionic
My First List
About Pages


about
Hey This is Practical No 3
Command for Generate page
Ionic generate page About

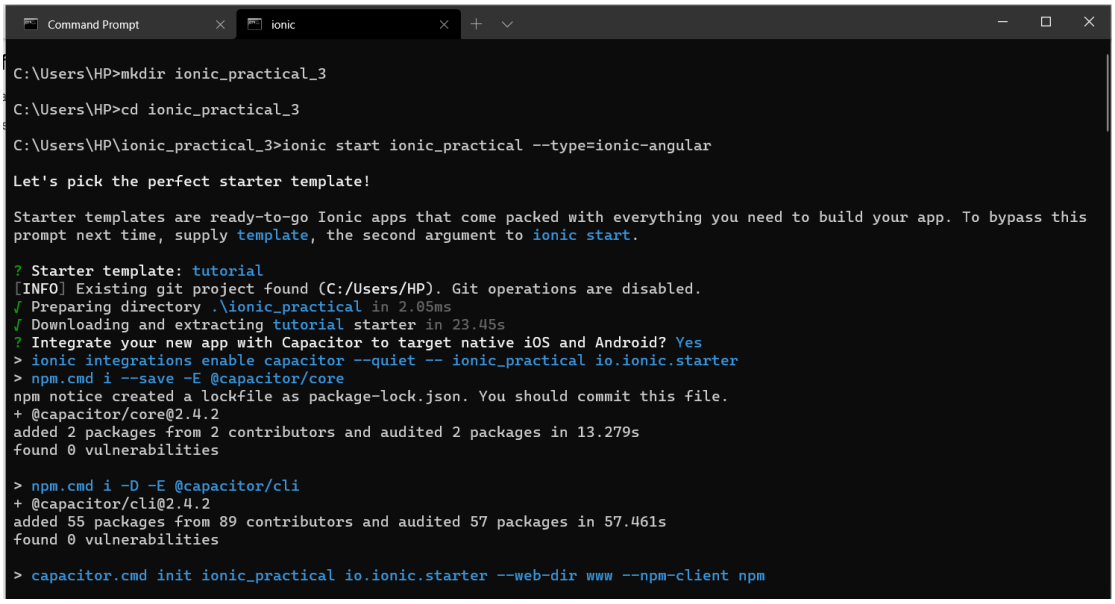
PRACTICAL NO. 8

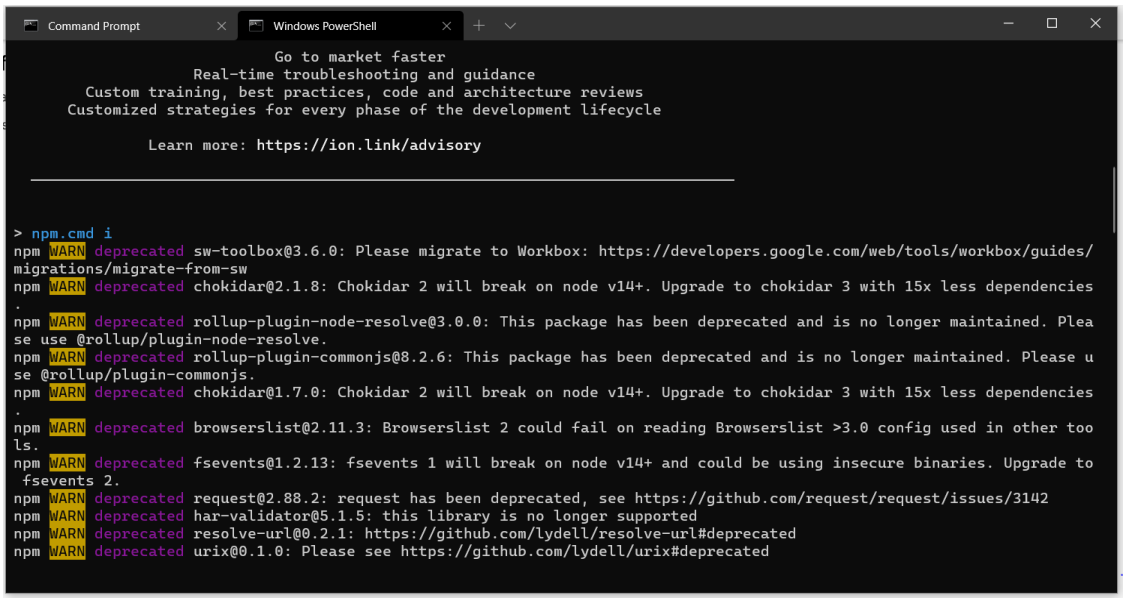
Ionic CLI v3-start command templates and options

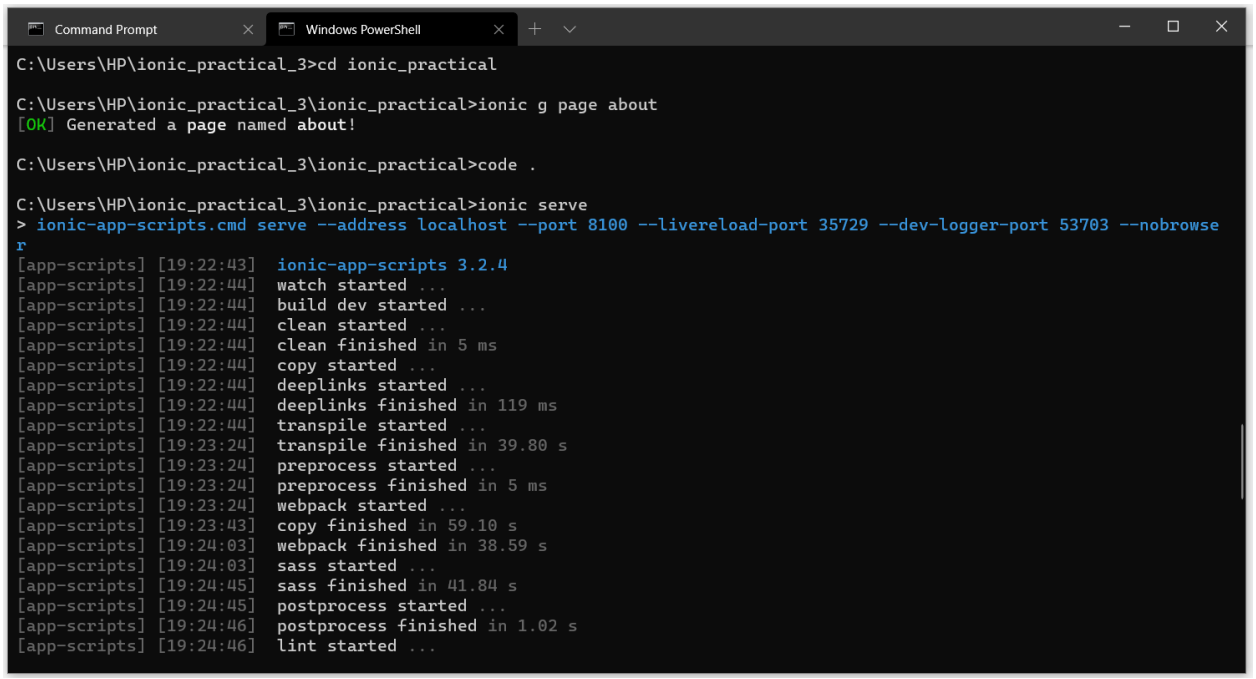
Ionic Templates: tabs

A starting project with a simple tabbed interface

Cmd output :







Options:

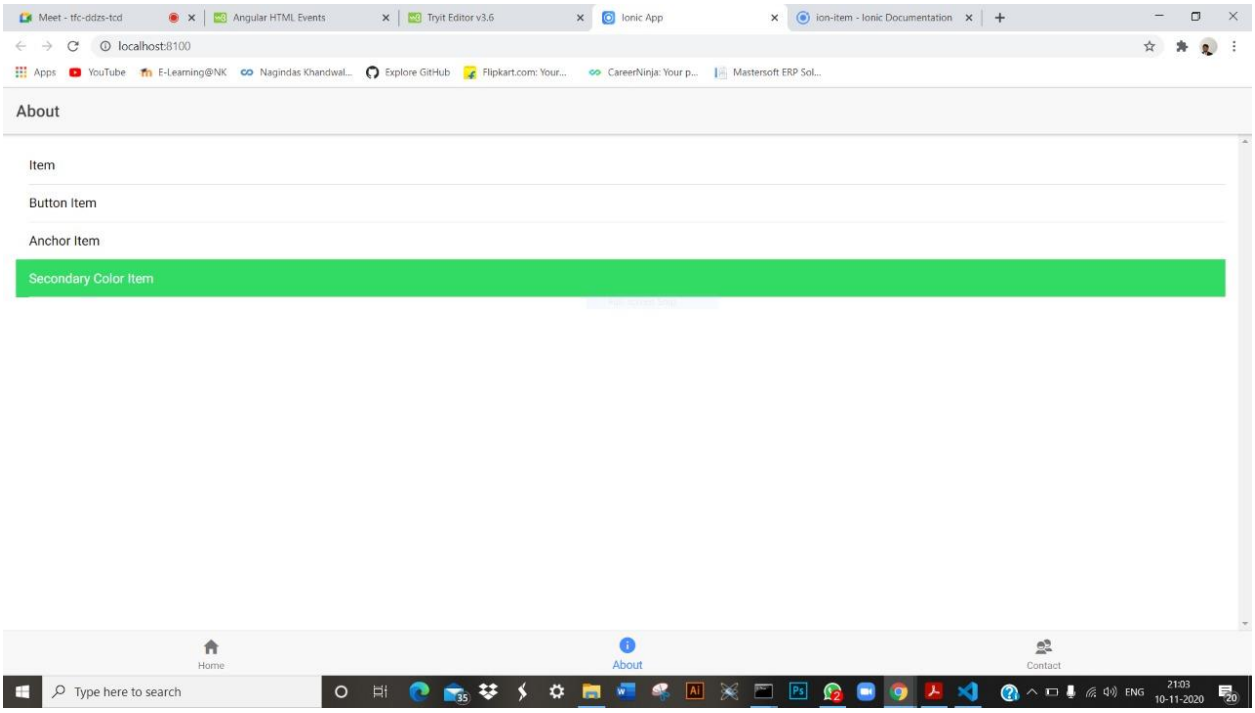
1) **Items** :

Items are elements that can contain text, icons, avatars, images, inputs, and any other native or custom elements. Generally they are placed in a list with other items. Items can be swiped, deleted, reordered, edited, and more.

Code :

```
<!-- Default Item -->
<ion-item>
  <ion-label>
    Item
  </ion-label>
</ion-item>

<!-- Item as a Button -->
<ion-item button (click)="buttonClick()">
  <ion-label>
    Button Item
  </ion-label>
</ion-item>

<!-- Item as an Anchor -->
<ion-item href="https://www.ionicframework.com">
  <ion-label>
    Anchor Item
  </ion-label>
</ion-item>

<ion-item color="secondary">
  <ion-label>
    Secondary Color Item
```

```
 </ion-label>
</ion-item>
```



2) Search-bar:

Search bars represent a text field that can be used to search through a collection. They can be displayed inside of a toolbar or the main content.

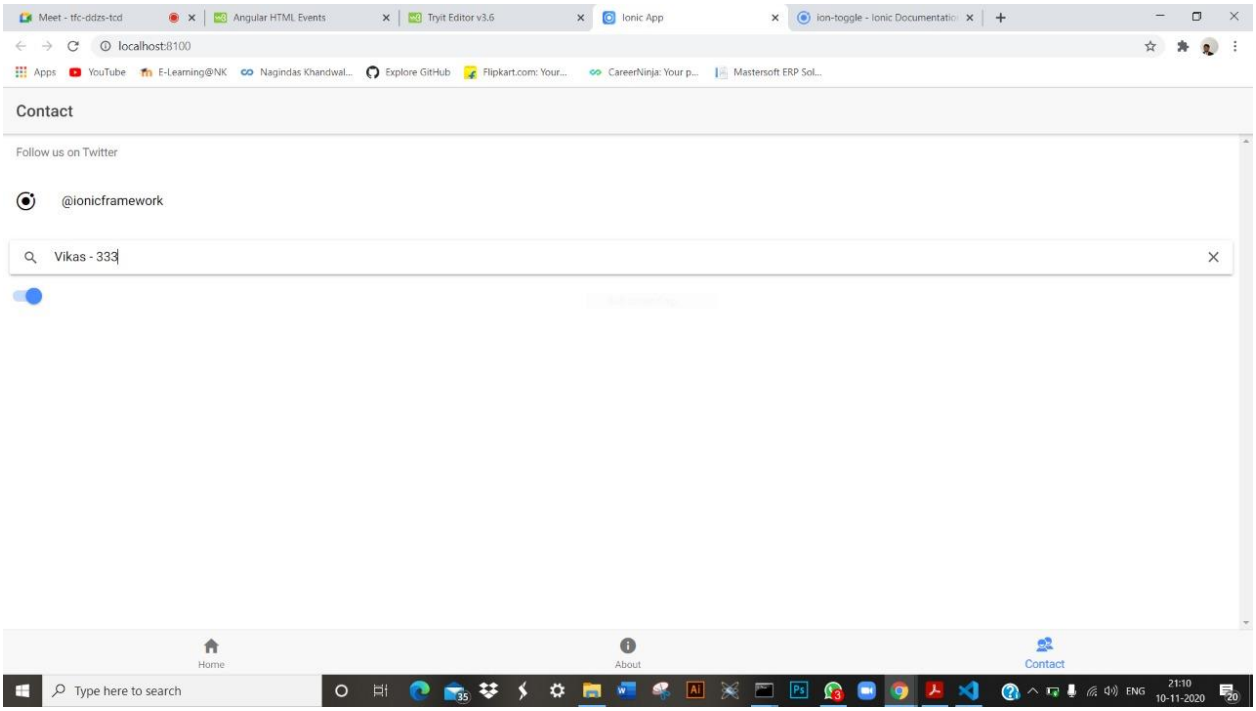
A Search bar should be used instead of an input to search lists. A clear button is displayed upon entering input in the search bar's text field. Clicking on the clear button will erase the text field and the input will remain focused. A cancel button can be enabled which will clear the input and lose the focus upon click.

```
<p>Searchbar with cancel button always shown</p>
      <IonSearchbar value={searchText} onIonChange={e => setSearchText(e.detail.value!)}
showCancelButton="always"></IonSearchbar>
```

3) Toggle:

Toggles change the state of a single option. Toggles can be switched on or off by pressing or swiping them. They can also be checked programmatically by setting the checked property.

```
<!-- Checked Toggle -->
<ion-toggle checked></ion-toggle>
```


Contact
Follow us on Twitter
@ionicframework
Vikas - 333
Home
About
Contact
Type here to search