



BHARATIYA VIDYA BHAVAN'S
SARDAR PATEL INSTITUTE OF TECHNOLOGY
Munshi nagar, Andheri (W) ,Mumbai - 400058
DEPARTMENT OF MASTER OF COMPUTER APPLICATION

CLASS: F.Y. MCA

SEM: 2

COURSE CODE: MC509

SUBJECT NAME: Mobile Programming Lab

UCID: 2023510059

BATCH: C

NAME: Vivek Tiwari

EXPERIMENT NO: 01

EXPERIMENT TITLE: To create a Museum app using basic UI components and SASS
[Syntactically awesome style-sheet]

Tools used:

Ionic framework paired with angular.

VS code

Code:

Tab1.page.html:

```
<ion-header style="position: sticky;top: 0;">
  <ion-toolbar style="display: flex;align-items: center;">
    <ion-title style="margin-left: 10px; flex:2; padding-left: 60px;" > Kids
  </ion-title>
    <ion-avatar slot="end">
      <ion-img src="./assets/icon/boy.png" title="museum icons"></ion-img>
    </ion-avatar>
  </ion-toolbar>
</ion-header>
<ion-content [fullscreen]="true">
  <ion-card *ngFor="let video of videos" (click)="playVideo(video.id)"
class="cards">
    <ion-card-header>
      <ion-card-title>{{video.title}}</ion-card-title><br>
      
    </ion-card-header>
    <ion-card-content>
      {{video.description}}
    </ion-card-content>
  </ion-card>
</ion-content>
```



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Tab1.page.ts:

```
import { Component } from '@angular/core';
import { IonCardContent, IonHeader, IonToolbar, IonTitle, IonContent, IonImg,
IonAvatar, IonCardTitle, IonCardHeader, IonCard, IonCardSubtitle} from
'@ionic/angular/standalone';
import { ExploreContainerComponent } from '../explore-container/explore-
container.component';
import { NavController } from '@ionic/angular/standalone';
import { NgForOf } from '@angular/common';

@Component({
  selector: 'app-tab1',
  templateUrl: 'tab1.page.html',
  styleUrls: ['tab1.page.scss'],
  standalone: true,
  imports: [ NgForOf, IonHeader, IonToolbar, IonTitle, IonContent,
ExploreContainerComponent, IonImg, IonAvatar, IonCardContent, IonCardTitle,
IonCardHeader, IonCard, IonCardSubtitle],
})
export class Tab1Page {
  constructor(private navCtrl: NavController) {}
  playVideo(videoId: string) {
    this.navCtrl.navigateForward(`/videopage/${videoId}`);
  }
  videos =[
    {id:'S83f3hT1BiQ', title:'The start of Indus Valley Civilization',
src:'https://shorturl.at/gqvW8', description:'Come take a look at how one of
the greatest Civilizations ever started.'},
    {id:'KhDY4KJuvC0', title:'Facts about Indus Valley',
src:'https://shorturl.at/mBC35', description:'Take a look at some facts about
The Indus Valley.'},
    {id:'oMXuzp3XcB8', title:'The Decline of Indus Valley Civilization',
src:'https://shorturl.at/oJRW4', description:'Intrigued about what led to the
decline of the greatest civiliazation? Lets check it out together'},
  ]
}
```

Tab1.page.scss:

```
ion-avatar{
  height: 60px;
  width: 70px;
  padding-right: 1rem;
  padding-top: 0.5rem;
  padding-bottom: 0.3rem;
```



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```
}  
.cards{  
  border-radius: 30px 30px 30px 30px;  
}  
img{  
  border-radius: 30px 30px 30px 30px;  
  padding: 1px 1px 1px 1px;  
}
```

Tab2.page.html:

```
<ion-content>  
  <ion-header style="position: sticky;top: 0;">  
    <ion-toolbar style="display: flex;align-items: center;">  
      <ion-title style="margin-left: 10px; flex:2; padding-left: 60px;" >  
Heritage of India </ion-title>  
      <ion-avatar slot="end">  
        <ion-img src="./assets/icon/museum1.png" title="museum icons"></ion-  
img>  
      </ion-avatar>  
    </ion-toolbar>  
  </ion-header>  
  <ion-card class="cards">  
      
    <ion-card-header>  
      <ion-card-subtitle>3300 BCE - 1300 BCE</ion-card-subtitle>  
      <ion-card-title>Indus Valley Civilization</ion-card-title>  
    </ion-card-header>  
    <ion-card-content>  
      The Indus Valley Civilization, one of the earliest urban civilizations in  
present-day Pakistan and northwest India, showcased advancements in urban  
planning, sanitation, and craftsmanship.  
      Unveiling its mysteries through artifacts is akin to solving a  
captivating puzzle.  
    </ion-card-content>  
  </ion-card>  
  <ion-card class="cards">  
      
    <ion-card-header>  
      <ion-card-subtitle>3300-1300 BCE</ion-card-subtitle>  
      <ion-card-title style="font-size:x-large;">Steatite Seal with  
Unicorn</ion-card-title>  
    </ion-card-header>  
    <ion-card-content>  
      <ul>
```



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```
<li><b>Material:</b> Steatite (soapstone)</li>
<li><b>Dimensions:</b> Varies, typically around 3-5 cm in length and
width, 1-2 cm thick</li>
<li><b>Origin:</b> Mohenjo-daro, Pakistan</li>
</ul>
</ion-card-content>
</ion-card>
<ion-card class="cards">
  
  <ion-card-header>
    <ion-card-subtitle>3300 BCE - 1300 BCE</ion-card-subtitle>
    <ion-card-title>Painted Pottery</ion-card-title>
  </ion-card-header>
  <ion-card-content>
    <ul>
      <li><b>Material:</b> Earthenware</li>
      <li><b>Dimensions:</b> Varies, with pots ranging from a few centimeters
to over 1 meter in height</li>
      <li><b>Origin:</b> Various Indus Valley Civilization sites</li>
    </ul>
  </ion-card-content>
</ion-card>
<ion-card class="cards">
  
  <ion-card-header>
    <ion-card-subtitle>3300 BCE - 1300 BCE</ion-card-subtitle>
    <ion-card-title>Copper Tools</ion-card-title>
  </ion-card-header>
  <ion-card-content>
    <ul>
      <li><b>Material:</b> Copper</li>
      <li><b>Origin:</b> <br>Mohenjo-daro, Pakistan.<br> Harappa, Pakistan
<br>Rakhigarhi, India</li>
      <li><b>Significance:</b> A wide variety of copper tools were found,
including axes, chisels, knives, and saws.</li>
    </ul>
  </ion-card-content>
</ion-card>
</ion-content>
```



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Tab2.page.ts:

```
import { Component } from '@angular/core';
import { IonCardTitle,IonCardSubtitle,IonCardHeader,IonCardContent,
IonCard,IonHeader, IonToolbar, IonTitle, IonContent, IonAvatar,IonImg } from
'@ionic/angular/standalone';
import { ExploreContainerComponent } from '../explore-container/explore-
container.component';
import { IonicModule } from '@ionic/angular';

@Component({
  selector: 'app-tab2',
  templateUrl: 'tab2.page.html',
  styleUrls: ['tab2.page.scss'],
  standalone: true,
  imports: [IonCardTitle,IonCardSubtitle,IonCardHeader,IonCardContent,
IonCard,IonHeader, IonToolbar, IonTitle, IonContent,
ExploreContainerComponent, IonAvatar,IonImg]
})
export class Tab2Page {

  constructor() {}

}
```

Tab2.page.scss:

```
ion-avatar{
  height: 60px;
  width: 70px;
  padding-right: 1rem;
  padding-top: 0.5rem;
  padding-bottom: 0.3rem;
}
.images{
  height: 300px;
  width: 400px;
}
.cards{
  border-radius: 30px 30px 30px 30px;
}
```



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Tab3.page.html:

```
<ion-content [fullscreen]="true">
<ion-header style="position: sticky;top: 0;">
  <ion-toolbar style="display: flex;align-items: center;">
    <ion-title style="margin-left: 10px; flex:2; padding-left: 60px; font-size: x-large;" > Events </ion-title>
  </ion-toolbar>
</ion-header><br>
<ion-datetime readonly></ion-datetime>
<ion-card *ngFor="let card of cards" class="cards">
  <ion-card-header>
    <ion-card-title>{{card.title}}</ion-card-title>
    <br>
    <ion-card-subtitle>{{card.subtitle}}</ion-card-subtitle>
  </ion-card-header>
  
  <ion-card-content>
    {{card.datetime}}
  </ion-card-content>
</ion-card>
</ion-content>
```

Tab3.page.ts:

```
import { Component } from '@angular/core';
import { IonHeader, IonToolbar, IonTitle,
IonContent,IonDatetime,IonDatetimeButton,IonCardContent, IonCardTitle,
IonCardSubtitle, IonCardHeader, IonCard } from '@ionic/angular/standalone';
import { NgForOf } from '@angular/common';

@Component({
  selector: 'app-tab3',
  templateUrl: 'tab3.page.html',
  styleUrls: ['tab3.page.scss'],
  standalone: true,
  imports: [NgForOf,IonHeader, IonToolbar, IonTitle, IonContent,
IonDatetime,IonDatetimeButton, IonCardContent,IonCardTitle,IonCardSubtitle,
IonCardHeader, IonCard],
})
export class Tab3Page {
  constructor() {}
  cards =
[
```



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```
{title:'Pottery Painting Workshop', subtitle:'Price: Rs. 1000/-',
datetime:'Date: 02-02-2024, Time: 14:00 - 16:00',
src:'assets/paintingev.png'},
{title:'Ancient artifacts auction', subtitle:'Price: Free Entry',
datetime:'Date: 05-02-2024, Time: 10:00 - 12:00', src:'assets/event2.jpeg'},
{title:'Understading the Indus Script', subtitle:'Price: Rs. 500/-',
datetime:'Date: 15-02-2024, Time: 10:00 - 15:00', src:'assets/event3.jpeg'},
]
}
```

Tab3.page.scss:

```
ion-dateTime{
  margin: 2rem 2rem;
}
.images{
  height: 300px;
  width: 400px;
  padding: 1rem 1rem;
  border-radius: 30px 30px 30px 30px;
}
.cards{
  border-radius: 30px 30px 30px 30px;
}
```

Tab4.page.html:

```
<ion-content>
  <ion-header style="position: sticky;top: 0;">
    <ion-toolbar style="display: flex;align-items: center;">
      <ion-title style="margin-left: 10px; flex:2; padding-left: 60px;" >
Feedback </ion-title>
    </ion-toolbar>
  </ion-header>
<br>
<ion-list class="lists">
  <ion-item>
    <ion-card-title class="titles">Name:</ion-card-title>
    <ion-input
      placeholder="Please enter your name"
      required
    >
    </ion-input>
  </ion-item>
<div class="divider"></div>
```



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```
<ion-item>
  <ion-card-title class="titles">E-Mail:</ion-card-title>
  <ion-input
    placeholder="Please enter your E-Mail"
  >
</ion-input>
</ion-item>
<div class="divider"></div>

<ion-item>
  <ion-card-title class="titles">Contact:</ion-card-title>
  <ion-input
    placeholder="Please enter your Phone Number"
  >
</ion-input>
</ion-item>
<div class="divider"></div>
</ion-list>
<div class="buttons">
  <ion-button id="buttons" (click)="clearAllFields()">Clear All</ion-button>
  <ion-button id="subbtn">Submit Feedback</ion-button>
</div>
<ion-alert
  trigger="subbtn"
  header="Your form has been submitted."
  subHeader="Thank you for your feedback."
></ion-alert>
</ion-content>
```

Tab4.page.ts:

```
import { Component, ViewChildren, QueryList } from '@angular/core';
import { CommonModule } from '@angular/common';
import { FormsModule } from '@angular/forms';
import { IonInput, IonItem, IonLabel, IonList,
  IonTitle, IonToolbar, IonHeader,
  IonContent, IonItemDivider, IonProgressBar,
  IonButton, IonCardTitle, IonCardSubtitle, IonAlert } from
  '@ionic/angular/standalone';
import { ReactiveFormsModule } from '@angular/forms';

@Component({
  selector: 'app-tab4',
  templateUrl: './tab4.page.html',
  styleUrls: ['./tab4.page.scss'],
})
```




```
standalone: true,  
imports: [ CommonModule, FormsModule, IonInput,  
           IonItem, IonLabel, IonList,  
           IonTitle, IonToolbar, IonHeader,  
           IonContent, IonItemDivider, IonProgressBar,  
           IonButton, IonCardSubtitle, IonCardTitle, IonAlert,  
ReactiveFormsModule  
           ]  
})  
export class Tab4Page {  
  @ViewChild(IonInput) inputFields!: QueryList<IonInput>;  
  public progress = 0;  
  
  constructor() {  
    setInterval(() => {  
      this.progress += 0.1;  
    }, 90);  
  }  
  
  clearAllFields() {  
    this.inputFields.forEach((inputField) => {  
      inputField.value = '';  
    });  
  }  
}
```

Tab4.page.scss:

```
.divider{  
  height: 1px;  
  background-color: #ccc;  
  margin: 10px 0;  
}  
.lists{  
  border-radius: 30px 30px 30px 30px;  
  margin: 1rem 1rem 1rem 1rem;  
  height: fit-content;  
}  
.titles{  
  padding: 1rem 1rem 1rem 0rem;  
}  
.buttons{  
  margin: 10px;  
  padding: 10px;  
  text-align: center;
```



```
}
```

Tabs.page.html:

```
<ion-tabs>
  <ion-tab-bar slot="bottom">
    <ion-tab-button tab="tab1" href="/tabs/tab1">
      <ion-icon aria-hidden="true" name="brush"></ion-icon>
    </ion-tab-button>

    <ion-tab-button tab="tab2" href="/tabs/tab2">
      <ion-icon aria-hidden="true" name="home"></ion-icon>
    </ion-tab-button>

    <ion-tab-button tab="tab3" href="/tabs/tab3">
      <ion-icon aria-hidden="true" name="calendar-Number"></ion-icon>
    </ion-tab-button>
    <ion-tab-button tab="tab4" href="/tabs/tab4">
      <ion-icon aria-hidden="true" name="chatbox"></ion-icon>
    </ion-tab-button>
  </ion-tab-bar>
</ion-tabs>
```

Tabs.page.ts:

```
ion-tab-button{
  padding-left: 1rem;
  padding-right: 1rem;
  padding-bottom: 0.75rem;
  padding-top: 0.75rem;
  size: 80px;
}
```

Tabs.page.scss:

```
import { Component, EnvironmentInjector, inject } from '@angular/core';
import { IonTabs, IonTabBar, IonTabButton, IonIcon, IonLabel } from
'@ionic/angular/standalone';
import { addIcons } from 'ionicons';
import { triangle, ellipse, square, home, brush, calendarNumber, chatbox }
from 'ionicons/icons';

@Component({
  selector: 'app-tabs',
  templateUrl: 'tabs.page.html',
  styleUrls: ['tabs.page.scss'],
```



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```
standalone: true,  
imports: [IonTabs, IonTabBar, IonTabButton, IonIcon, IonLabel],  
})  
export class TabsPage {  
  public environmentInjector = inject(EnvironmentInjector);  
  
  constructor() {  
    addIcons({ triangle, ellipse, square, home, brush, calendarNumber, chatbox  
  });  
  }  
}
```

videopage.page.html:

```
<ion-header style="height: 80px;">  
  <ion-toolbar>  
    <ion-buttons slot="start" >  
      <ion-back-button defaultHref="/tabs/tab1"></ion-back-button>  
    </ion-buttons>  
    <ion-title>  
      Video Page  
    </ion-title>  
  </ion-toolbar>  
</ion-header>  
  
<ion-content>  
  <div *ngIf="videoId">  
    <iframe width="100%" height="400px" [src]="getSafeVideoUrl(videoId)"  
frameborder="0" allowfullscreen></iframe>  
  </div>  
</ion-content>
```

videopage.page.ts:

```
import { Component } from '@angular/core';  
import { IonContent, IonTitle, IonBackButton, IonButtons, IonToolbar,  
IonHeader } from '@ionic/angular/standalone';  
import { ActivatedRoute } from '@angular/router';  
import { CommonModule } from '@angular/common';  
import { DomSanitizer, SafeResourceUrl } from '@angular/platform-browser';  
  
@Component({  
  selector: 'app-videopage',  
  templateUrl: './videopage.page.html',  
  styleUrls: ['./videopage.page.scss'],  
})  
export class VideopagePage {  
  constructor(private route: ActivatedRoute, private sanitizer: DomSanitizer) {}  
  
  getSafeVideoUrl(videoId: string): SafeResourceUrl {  
    return this.sanitizer.bypassSecurityTrustResourceUrl('https://www.youtube.com/watch?v=' + videoId);  
  }  
}
```



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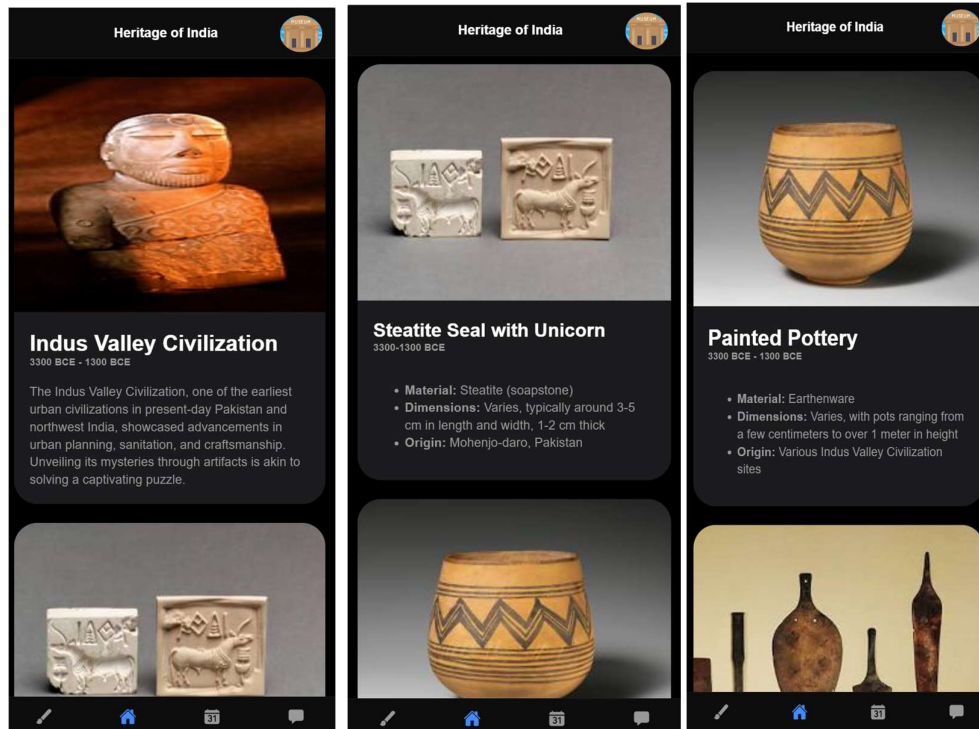
```
standalone: true,  
imports: [ IonContent, IonTitle, IonBackButton, IonButtons, IonToolbar,  
IonHeader, CommonModule]  
})  
export class VideopagePage {  
  videoId!: string;  
  
  constructor(private route: ActivatedRoute, private sanitizer: DomSanitizer)  
  {  
    this.route.params.subscribe(params => {  
      this.videoId = params['id'];  
      console.log('Video ID:', this.videoId);  
    });  
  }  
  
  getSafeVideoUrl(videoId: string): SafeResourceUrl {  
    const videoUrl = `https://www.youtube.com/embed/${videoId}`;  
    console.log('Safe Video URL:', videoUrl);  
    return this.sanitizer.bypassSecurityTrustResourceUrl(videoUrl);  
  }  
}
```



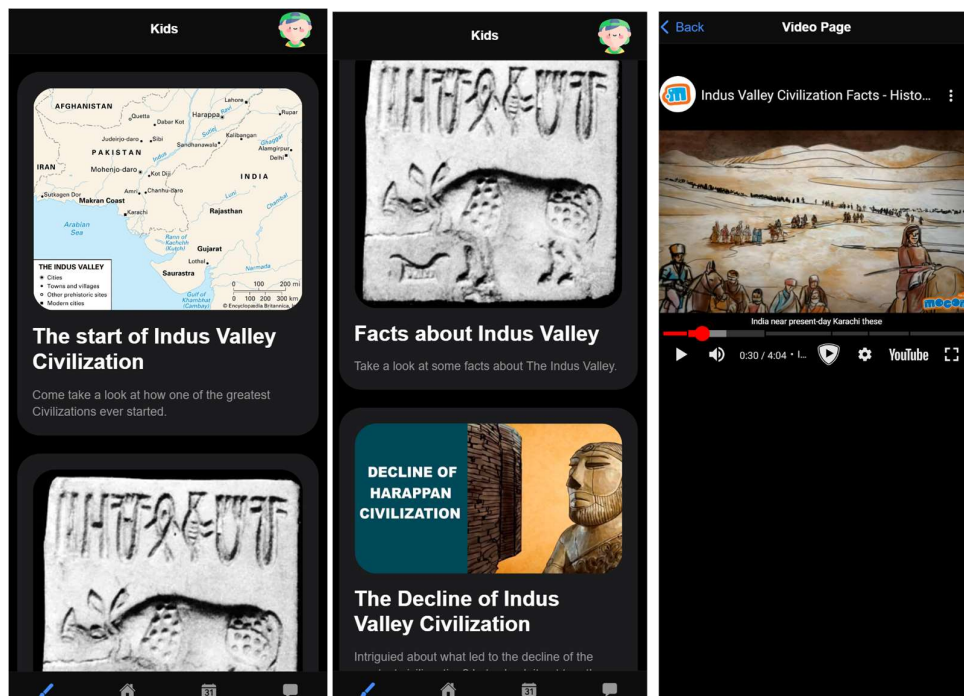
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Output:

Home Page:



Kids Sections:





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Events Tab:

Events

1 2 3

4 5 6 7 8 9 10

11 12 13 14 15 16 17

18 19 20 21 22 23 24

25 26 27 28 29

Time 12:12 am

PRICE: RS. 1000/-

Pottery Painting Workshop

Date: 02-02-2024, Time: 14:00 - 16:00

Events

Ancient artifacts auction

Date: 05-02-2024, Time: 10:00 - 12:00

PRICE: RS. 500/-

Understanding the Indus Script

Forms & Alert tab:

Feedback

Name:

Please enter your name

E-Mail:

Please enter your E-Mail

Contact:

Please enter your Phone Number

Clear All

Submit Feedback

Feedback

Name:

Vivek

E-Mail:

tiwarivivek9874@gmail.com

Contact:

123456

Your form has been submitted.
Thank you for your feedback.

Clear All

Submit Feedback



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Q&A:

Q.1 What are the features of SASS?

- Variables: Store values for reuse, such as colors or sizes.
- Nesting: Nest selectors to reduce redundancy and establish hierarchy.
- Mixins: Create reusable style components with the ``@mixin` and include them with `@include`.`
- Operators: Perform arithmetic operations on numbers, colors, or units.
- Modules: Organize styles into separate files and import them with ``@use` or `@import`.`

Q.2 Explain @mixin, @include, @extend, @import in SASS.

- `@mixin`: Defines a reusable set of styles.
- `@include`: Incorporates a mixin into a rule.
- `@extend`: Extends styles of another selector.
- `@import`: Imports styles from another file.

Q.2 What is the use of routerLink?

- The ``routerLink` directive in Angular enables declarative navigation between routes, enhancing user experience by allowing seamless navigation between different sections of the application.`

Q.3 What is the difference between component and page?

- In Angular, a component and a page are essentially the same, representing a reusable unit of UI. In Ionic, a component is a reusable UI element, while a page is a specific type of component serving as a view or screen.

Q.4 List ways to route between pages.

- RouterLink: Create links to specific routes.
- Router.navigate and Router.navigateByUrl: Programmatic navigation within component classes.
- NavController: Service for navigation in Ionic applications.

Q.5 Explain @NgModule properties in Angular.

- declaration: Components, directives, and pipes specific to the module.



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- import: Modules whose exported components, directives, and pipes are required.
- bootstrap: Designates the root component for bootstrapping the application.
- export: Components, directives, and pipes visible to other importing modules.

Q.6 How do we add a component to a specific page?

1. Create the component using `ionic generate component`.
2. Import the component in the page module.
3. Declare the component in the module's `declarations` array.
4. Use the component selector in the page template.