LECTURE 9

# ADVANCED IMPLEMENTATION IN IONIC 2

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# OVERVIEW

- Forms
- Observables
- Life cycle
- Implementation

# FORMS

# WAY 1: TWO WAY DATA BINDING

Template

```
<form (submit)="saveForm($event)">
    <ion-input type="text" [(ngModel)]="myValue"></ion-input>
    <button type="submit">Save</button>
</form>
```

# WAY 1: TWO WAY DATA BINDING

Template

```
<form (submit)="saveForm($event)">
    <ion-input type="text" [(ngModel)]="myValue"></ion-input>
    <button type="submit">Save</button>
</form>
```

TWDB does not depend on submit

# WAY 1: TWO WAY DATA BINDING

Page

```
import {Page} from 'ionic-angular';
@Page({
    templateUrl: 'build/pages/my-details/my-details.html',
})
export class MyDetailsPage {
    constructor() {

    }
    saveForm(event) {
        console.log(this.myValue);
    }
}
```

# WAY 2: FORM BUILDER

Template

```
<form [ngFormModel]="myForm" (submit)="saveForm($event)">
    <ion-item>
        <ion-label stacked>Name</ion-label>
        <ion-input ngControl="name" type="text"></ion-input>
    </ion-item>
    <ion-item>
        <ion-label stacked>House number</ion-label>
        <ion-input ngControl="houseNumber" type="number"></ion-input>
    </ion-item>
    <button type="submit">Save</button>
</form>
```

# WAY 2: FORM BUILDER

Submit binding

Template

```
<form [ngFormModel]="myForm" (submit)="saveForm($event)">
    <ion-item>
        <ion-label stacked>Name</ion-label>
        <ion-input ngControl="name" type="text"></ion-input>
    </ion-item>
    <ion-item>
        <ion-label stacked>House number</ion-label>
        <ion-input ngControl="houseNumber" type="number"></ion-input>
    </ion-item>
    <button type="submit">Save</button>
</form>
```

# WAY 2: FORM BUILDER

Submit binding

Template

```
<form [ngFormModel]="myForm" (submit)="saveForm($event)">
    <ion-item>
        <ion-label stacked>Name</ion-label>
        <ion-input ngControl="name" type="text"></ion-input>
    </ion-item>
    <ion-item>
        <ion-label stacked>House number</ion-label>
        <ion-input ngControl="houseNumber" type="number"></ion-input>
    </ion-item>
    <button type="submit">Save</button>
</form>
```

For form builder identification

# WAY 2: FORM BUILDER

Page

```
import {Page} from 'ionic-angular';
import {FormBuilder, Validators} from 'angular2/common';
@Page({
    templateUrl: 'build/pages/my-details/my-details.html',
})
export class MyDetailsPage {
    static get parameters() {
        return [[FormBuilder]];
    }
    constructor(formBuilder) {
        this.formBuilder = formBuilder;
        this.myForm = formBuilder.group({
            name: ['', Validators.required],
            houseNumber: ['', Validators.maxLength(10)]
        });
    }
    saveForm(event) {
        console.log(this.myForm);
    }
}
```

# WAY 2: FORM BUILDER

Page

```
import {Page} from 'ionic-angular';
import {FormBuilder, Validators} from 'angular2/common';
@Page({
    templateUrl: 'build/pages/my-details/my-details.html',
})
export class MyDetailsPage {
    static get parameters() {
        return [[FormBuilder]];
    }
    constructor(formBuilder) {
        this.formBuilder = formBuilder;
        this.myForm = formBuilder.group({
            name: ['', Validators.required],
            houseNumber: ['', Validators.maxLength(10)]
        });
    }
    saveForm(event) {
        console.log(this.myForm);
    }
}
```

Default value

# WAY 2: FORM BUILDER

Page

```
import {Page} from 'ionic-angular';
import {FormBuilder, Validators} from 'angular2/common';
@Page({
    templateUrl: 'build/pages/my-details/my-details.html',
})
export class MyDetailsPage {
    static get parameters() {
        return [[FormBuilder]];
    }
    constructor(formBuilder) {
        this.formBuilder = formBuilder;
        this.myForm = formBuilder.group({
            name: ['', Validators.required],
            houseNumber: ['', Validators.maxLength(10)]
        });
    }
    saveForm(event) {
        console.log(this.myForm);
    }
}
```

Validation included!

Default value

# WAY 2: FORM BUILDER

Page

```
import {Page} from 'ionic-angular';
import {FormBuilder, Validators} from 'angular2/common';
@Page({
    templateUrl: 'build/pages/my-details/my-details.html',
})
export class MyDetailsPage {
    static get parameters() {
        return [[FormBuilder]];
    }
    constructor(formBuilder) {
        this.formBuilder = formBuilder;
        this.myForm = formBuilder.group({
            name: ['', Validators.required],
            houseNumber: ['', Validators.maxLength(10)]
        });
    }
    saveForm(event) {
        console.log(this.myForm);
    }
}
```

Combine with Validators.compose([Array])

Validation included!

Default value

# OBSERVABLES

# OBSERVABLES

- **Same purpose as a Promise but with extra stuff**
- Promise returns a **single result**
- Observable is a **stream**
- Can emit more than one value over time

# OBSERVABLES

```
this.http.get('/app/books.json')
.map((res) => res.json())
.subscribe(
    data => {
        this.books = data
    },
    err => console.error(err),
    () => console.log('done')
);
```

# OBSERVABLES

```
this.http.get('/app/books.json')
.map((res) => res.json())
.subscribe(
    data => {
        this.books = data
    },
    err => console.error(err),
    () => console.log('done')
);
```

onNext

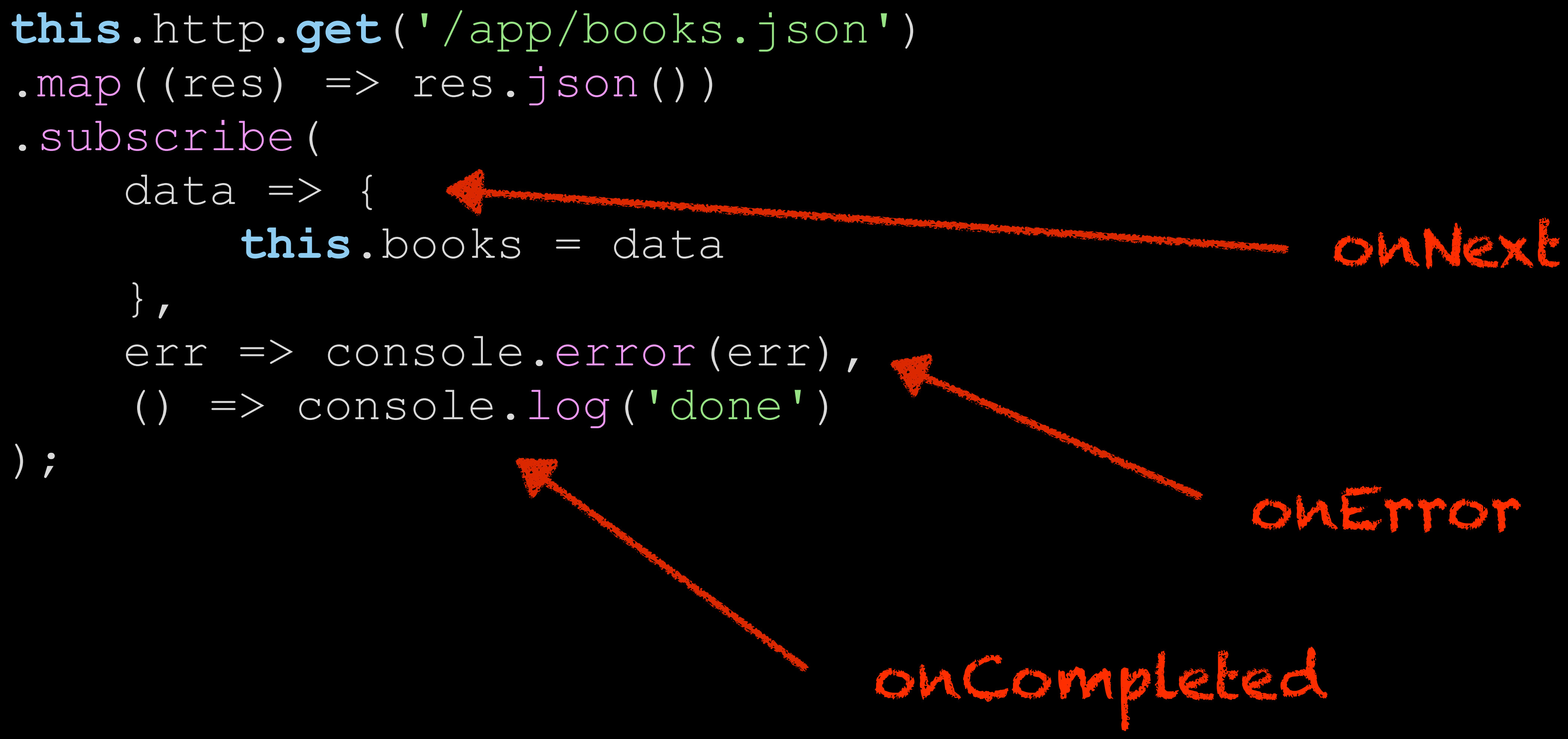
# OBSERVABLES

```
this.http.get('/app/books.json')
.map((res) => res.json())
.subscribe(
    data => {
        this.books = data
    },
    err => console.error(err),
    () => console.log('done')
);
```

onNext

onError

# OBSERVABLES



```
this.http.get('/app/books.json')
.map((res) => res.json())
.subscribe(
    data => {
        this.books = data
    },
    err => console.error(err),
    () => console.log('done')
);
```

# OBSERVABLES

```
Observable.forkJoin(
    this.http.get('/app/books.json')
        .map((res) => res.json()),
    this.http.get('/app/movies.json')
        .map((res) => res.json())
).subscribe(
    data => {
        this.books = data[0]
        this.movies = data[1]
    },
    err => console.error(err),
    () => console.log('done')
);
```

# OBSERVABLES

```
Observable.forkJoin(
    this.http.get('/app/books.json')
        .map((res) => res.json()),
    this.http.get('/app/movies.json')
        .map((res) => res.json())
).subscribe(
    data => {
        this.books = data[0]
        this.movies = data[1]
    },
    err => console.error(err),
    () => console.log('done')
);
```

Wait for more resources

Similar to $q.all in Angular1

# LIFE CYCLE IN IONIC2

# LIFE CYCLE IN IONIC2

- **onPageLoaded** – Similar to ngOnInit in Angular2
- **onPageWillEnter** – Before view becomes active
- **onPageDidEnter** – After view becomes active
- **onPageWillLeave** – Before view loses focus
- **onPageDidLeave** – After view loses focus
- **onPageWillUnload** – Before page is removed from the DOM
- **onPageDidUnload** – After page is removed from the DOM

# IMPLEMENTATION

# TODAY'S GOAL

# DOWNLOAD APP FROM LAST LECTURE

```
$ git clone https://github.com/jvaclavik/image-warholizer
$ cd image-warholizer
$ git checkout 1.0
```

https://github.com/jvaclavik/image-warholizer/releases/tag/1.0

# INSTALL

```
$ npm install
$ ionic serve
```

# WHAT TO DO

- Gallery
- Add stripe effect
- Save picture to device
- Image crop

# IMPLEMENTATION

Gallery

# HOW TO IMPLEMENT OWN GALLERY

- **Save image paths in Local Storage**
- Picture detail will be **modal window with slideshow** inside and semi-transparent background

# CREATE DEMO ITEM IN LOCAL STORAGE

- Example

```
Key: gallery
Value: ["img/demo.jpg"]
```

# GENERATE GALLERY PROVIDER

- For storing images in Local Storage
- For saving images to device

```
$ ionic g provider gallery-provider
```

# GALLERY PROVIDER

app/providers/gallery-provider/gallery-provider.js

```
import {Injectable} from 'angular2/core';
const STORAGE_KEY = 'gallery';

@Injectable()
export class GalleryProvider {
    constructor() {
        this.gallery = [];
        var galleryImages = localStorage.getItem(STORAGE_KEY);
        if (galleryImages) {
            try {
                this.gallery = JSON.parse(galleryImages) || [];
            } catch (e) {
                console.warn('Error getting gallery filenames');
            }
        }
    }

    savePhoto(photo) {
        // TODO
    }

    getGallery() {
        return this.gallery;
    }
}
```

# GENERATE GALLERY PAGE

```
$ ionic g page gallery
```

# GALLERY TEMPLATE

app/pages/gallery/gallery.html

```
<ion-navbar *navbar>
    <button menuToggle>
        <ion-icon name="menu"></ion-icon>
    </button>
    <ion-title>Gallery</ion-title>
</ion-navbar>

<ion-content padding class="gallery">
    <img
        *ngFor="#photo of gallery; #i = index"
        src="{{photo}}"
        (click)="showImages(i)" />
</ion-content>
```

# GALLERY

app/pages/gallery/gallery.js

```
import {Page, Modal, NavController} from 'ionic-angular';
import {GalleryDetailPage} from '../gallery-detail/gallery-detail';
import {GalleryProvider} from
    '../../providers/gallery-provider/gallery-provider';


@Page({
    templateUrl: 'build/pages/gallery/gallery.html',
    providers: [GalleryProvider]
})
export class GalleryPage {
    static get parameters(){
        return [[NavController], [GalleryProvider]]
    }
    constructor(nav, galleryProvider){
        this.gallery = galleryProvider.getGallery();
        this.nav = nav;
    }

    showImages(index){
        let modal = Modal.create(GalleryDetailPage, {index: index});
        this.nav.present(modal);
    }
}
```

# GALLERY LIST AS SQUARES

app/pages/gallery/gallery.scss

```
.gallery{
  img{
    width: 100px;
    height: 100px;
    object-fit: cover;
    display: inline-block;
    margin: 5px;
  }
}
```

# GENERATE GALLERY DETAIL PAGE

```
$ ionic g page gallery-detail
```

# GALLERY DETAIL TEMPLATE

app/pages/gallery-detail/gallery-detail.html

```
<ion-navbar *navbar class="hide">
  <ion-title>Gallery detail</ion-title>
</ion-navbar>

<ion-content padding class="gallery-detail" (click)="closeModal()">
  <ion-slides pager [options]="slideOptions">
    <ion-slide *ngFor="#photo of gallery">
      <img src="{{photo}}" />
    </ion-slide>
  </ion-slides>
</ion-content>
```

# GALLERY DETAIL TEMPLATE

app/pages/gallery-detail/gallery-detail.js

```
import {Page, NavController, NavParams, Slides} from 'ionic-angular';
import {GalleryProvider} from '../../providers/gallery-provider/gallery-provider';

@Page({
  templateUrl: 'build/pages/gallery-detail/gallery-detail.html',
  providers: [GalleryProvider]
})
export class GalleryDetailPage {
  static get parameters() {
    return [[NavController], [GalleryProvider], [NavParams]];
  }

  constructor(nav, galleryProvider, navParams) {
    this.nav = nav;
    this.gallery = galleryProvider.getGallery();
    this.slideOptions = {
      initialSlide: navParams.get("index")
    }
  }

  closeModal(){
    this.nav.pop();
  }
}
```

# GALLERY DETAIL SCSS

app/pages/gallery-detail/gallery-detail.scss

```
.gallery-detail-page,
.gallery-detail-page ion-content,
.gallery-detail-page toolbar-background {
  background: transparent;
}

ion-page.modal {
  background: rgba(0,0,0,0.7) ;
}
```

# IMPLEMENTATION

Add stripe effect

# DOWNLOAD NEW WARHOLIZER.JS

- http://bit.ly/21sFTcn
- Save as **app/pages/warholize/warholizer.js**

# ADD HORIZONTAL/VERTICAL EFFECT

app/providers/warholize/warholize.html

```
<ion-navbar *navbar>
    <button menuToggle>
        <ion-icon name="menu"></ion-icon>
    </button>
    <ion-title>Warholize</ion-title>
</ion-navbar>

<ion-content padding class="warholize">
    <img src="{{imgSrc}}" id="source-image">
    <div id="previews"></div>
    <button block
        (click)="applyEffect('vertical')"
        *ngIf="!generated">Vertical effect</button>
    <button block
        (click)="applyEffect('horizontal')"
        *ngIf="!generated">Horizontal effect</button>
</ion-content>
```

# IMPLEMENT NEW EFFECTS

app/providers/warholize/warholize.js

```
...
applyEffect(orientation) {
    if (this.generated) return;
    let loading = Loading.create({
        content: 'Working hard...'
    });
    var wrh = new Warholizer({
            previewsElemId: 'previews',
            sourceImgId: 'source-image',
            resultWrapperNameBase: 'result-wrapper-',
            resultElementNameBase: 'result-',
            orientation: orientation,
            onRenderStart: () => {
                this.nav.present(loading);
            },
            onRenderFinished: () => {
                loading.dismiss();
            },
            cloneClickedHandler: (target) => {
                this.showActionSheet(target);
            }
        });
    wrh.generateClones();
    this.generated = true;
}
...
```

# IMPLEMENT NEW EFFECTS

app/providers/warholize/warholize.js

```
...
showActionSheet(target) {
    let sheet = ActionSheet.create({
        title: 'Action?',
        buttons: [
            {
                text: 'Share',
                handler: () => {
                    SocialSharing.share(
                        'See this picture!', 'My warholized photo',
                        target.toDataURL('image/jpeg')
                    );
                }
            }, {
                text: 'Save',
                handler: () => {
                    // TODO: Call save method from GalleryProvider
               }
            }, {
                text: 'Cancel',
                role: 'cancel'
            }
        ]
    });
    this.nav.present(sheet);
}
...
```

# IMPLEMENTATION

Save picture to device

# GALLERY PROVIDER AS A DEPENDENCY

app/providers/warholize/warholize.js

```
import {Page, NavController, NavParams, Loading, ActionSheet}
    from 'ionic-angular';
import {SocialSharing} from 'ionic-native';
import {Warholizer} from './warholizer';
import {GalleryProvider} from
    '../../providers/gallery-provider/gallery-provider';
const BASE64_PREFIX = "data:image/jpeg;base64,";

@Page({
    templateUrl: 'build/pages/warholize/warholize.html',
    providers: [GalleryProvider]
})
export class WarholizePage {
    static get parameters() {
        return [[NavController], [NavParams], [GalleryProvider]];
    }
    ...
}
```

# GALLERY PROVIDER AS A DEPENDENCY

app/providers/warholize/warholize.js

```
...
constructor(nav, navParams, gallery) {
    this.nav = nav;
    this.generated = false;
    this.gallery = gallery;
    this.imgSrc = 'img/demo.jpg'; //default image
    var imageData = navParams.get('imageData');
    if (imageData) {
        this.useNewImageAsSrc(imageData);
    }
}
...
```

# CALL SAVE METHOD FROM GALLERY PROVIDER

app/providers/warholize/warholize.js

```
...
showActionSheet(target) {
    let sheet = ActionSheet.create({
        title: 'Action',
        buttons: [
            {
                text: 'Share',
                handler: () => {
                    SocialSharing.share(
                        'See this picture!', 'My warholized photo',
                        target.toDataURL('image/jpeg')
                    );
                }
            }, {
                text: 'Save',
                handler: () => {
                    this.gallery.savePhoto(target);
                }
            }, {
                text: 'Cancel',
                role: 'cancel'
            }
        ]
    });
    this.nav.present(sheet);
}
...
```

# INSTALL PLUGIN FOR SAVING IMAGE FROM CANVAS

```
$ ionic plugin add https://github.com/devgeeks/Canvas2ImagePlugin.git
```

# GALLERY PROVIDER

app/providers/gallery-provider/gallery-provider.js

```
...
savePhoto(photo) {
    if (!window.canvas2ImagePlugin) {
        console.warn('No canvas2Image plugin available, photo not saved.');
        return;
    }

    window.canvas2ImagePlugin.saveImageDataToLibrary(
        (fileName) => {
            this.gallery.push(fileName);
            localStorage.setItem(STORAGE_KEY, JSON.stringify(this.gallery));
        },
        (err) => {
            console.error(err);
        },
        photo
    );
}
...
```

# IMPLEMENTATION

## Cropper

# GENERATE CROPPER PAGE

```
$ ionic g page cropper
$ npm install cropperjs
```

# CROPPER PAGE TEMPLATE

app/pages/cropper/cropper.html

```
<ion-navbar *navbar>
    <ion-title>cropper</ion-title>
    <ion-buttons end>
        <button (click)="getCroppedData()">Use</button>
    </ion-buttons>
</ion-navbar>

<ion-content class="cropper">
    <img src="{{imageData}}" id="cropper-img"/>
</ion-content>
```

# SHOW CROPPER PAGE AFTER BUTTON CLICK

app/pages/choose-action/choose-action.js

```
...
import {CropperPage} from '../cropper/cropper';
...
export class ChooseActionPage {
  ...
  getPicture(source) {
     ...
     Camera.getPicture(options).then((imageData) => {
        this.nav.push(CropperPage, {imageData: imageData});
     }, (err) => {
          ...
        img.onload = () => {
           ...
           this.nav.push(CropperPage, {
                    imageData: demo.toDataURL("image/jpeg")
                })；
        }
     })；
  }
}
```

# CROPPER PAGE

app/pages/cropper/cropper.js

```
import {Page, NavController, NavParams} from 'ionic-angular';
import {WarholizePage} from '../warholize/warholize';
import Cropper from 'cropperjs';
const BASE64_PREFIX = "data:image/jpeg;base64,";

@Page({
    templateUrl: 'build/pages/cropper/cropper.html',
})
export class CropperPage {
    static get parameters() {
        return [[NavController], [NavParams]];
    }
    constructor(nav, navParams) {
        // TODO
    }
    getCroppedData() { // For export selected image
        // TODO
    }
}
```

# CROPPER PAGE

app/pages/cropper/cropper.js

```
...
constructor(nav, navParams) {
    this.nav = nav;
    this.navParams = navParams;
    var imageData = navParams.get('imageData');

    if (~imageData.indexOf(BASE64_PREFIX))
        this.imageData = imageData;
    else
        this.imageData = BASE64_PREFIX + imageData;

    setTimeout(() => {
        this.cropper = new Cropper(
                document.getElementById('cropper-img'),
            {
                aspectRatio: 1,
                viewMode: 2,
            }
        );
    });
}
...
```

# CROPPER PAGE

app/pages/cropper/cropper.js

```
...
// For export selected image
getCroppedData() {
    var cropped = this.cropper.getCroppedCanvas({
        width: 500,
        height: 500
    });
    this.nav.push(WarholizePage, {
        imageData: cropped.toDataURL('image/jpeg')
    });
}
...
```

# CROPPER SCSS

app/pages/cropper/cropper.scss

```scss
#cropper-img {
  max-width: 100%;
}

@import '../../../node_modules/cropperjs/dist/cropper.min';
```

# DON'T FORGET ON SCSS IMPORTS

`app/theme/app.core.scss`

```
...
@import "../pages/gallery-detail/gallery-detail.scss";
@import "../pages/gallery/gallery.scss";
@import "../pages/cropper/cropper.scss";
```

# COMPLETED APP

https://github.com/jvaclavik/image-warholizer/tree/2.0

# QUESTIONS?

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