Assessment Report: ImageVault (iOS App)

By

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PROBLEM STATEMENT

Develop an iOS app which will parse the response received from URL

https://picsum.photos/list

The JSON is to be parsed for the below tags

- id
- author

The parsed response is to be displayed in a grid. Each cell in the grid should display the Author name and Image.

The image URL can be formed by https://picsum.photos/300/300?image=<id found in response>

SOLUTION

To complete this assessment, I have used the following tool and language:

XCode: Version 11.4.1

Swift: Swift 5

iOS target version: 13.4

DESIGN AND CODE

I have used MVC (Modal View Controller) design pattern in this solution

Modal files:

1. ImageManager.swift
2. ImageData.swift

View:

1. Main.storyboard

Controller:

1. ImageListViewController.swift
2. CollectionViewCell.swift
3. ImageViewerViewController.swift

FLOW

In this small app, I have fetched the data from using JSON parsing from the JSON file https://picsum.photos/list

I have created codable Structure named **ImageData** which will fetch id and author from the JSON file.

ImageManager.swift file contains the heart of the code which has fetch request to the data at given URL. To parse JASON data, I followed four steps from **ImageManager.swift** file,

1. Create URL () : specified the given URL
2. Create URL Session: session acts as a browser which is a platform to perform networking operations
3. Assign Task to the session
4. Start the Task

```
func performRequest(with urlString:String){
    //1. Create a URL
    if let url = URL(string: urlString){

        //2. Create a URL Session
        let session = URLSession(configuration: .default)

        //3. Assign Task
        let task = session.dataTask(with: url) { (data, response, error) in
            if error != nil {
                self.delegate?.didFailWithError(error: error!)
                //terminate the code if there is as error
                return
            }

            if let safeData = data {
                //calling method from clouser
                //optional binding
                if let images = self.parseJSON(safeData){
                    self.delegate?.didUpdateImages(self, images:images)
                }
            }
        }
        //4. Start Task
        task.resume()
    }
}
```

Fig. Code Snippet of JSON request

Protocol: declared protocol in the same **ImageManager.swift** file, which has function declaration for

func didUpdateImages(_ imageManager:ImageManager, images: [ImageData])

func didFailWithError(error: Error)

This is used to transfer the data from **ImageManager.swift** to main view which is **ImageListViewController.swift**

Decoded data is saved in **ImageData** array

I have used UICollectionView in order to display images in Grid form, **UICollectionViewDelegate**, **UICollectionViewDataSource** delegates are used to manage Collection View

When any cell of the collection view is clicked a segue takes control to the next ViewController where the image from that cell and author name is displayed.

OUTPUT

Screenshots of the produced output

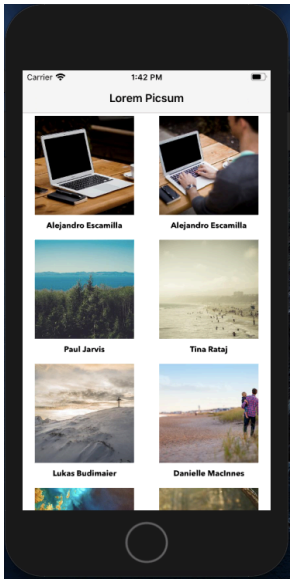

Fig. Output Screen

I have added all the required constraints to make the application responsive.

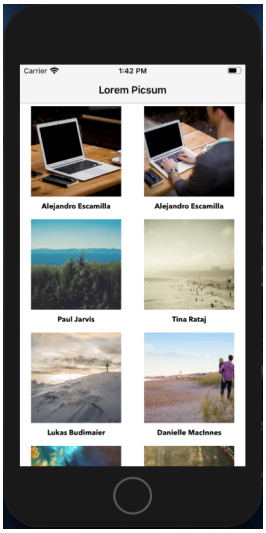

Fig. iPhone SE (2nd Generation)

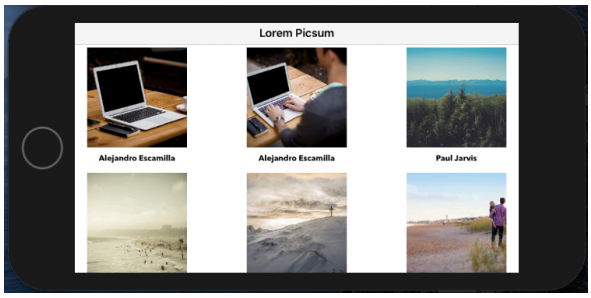

Fig. Rotated View

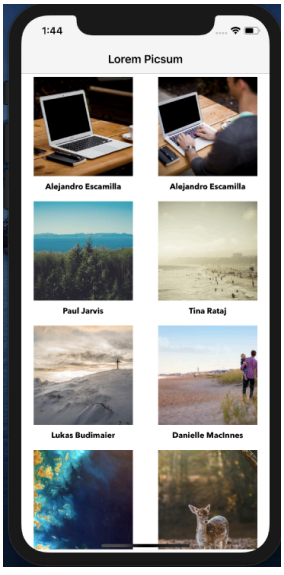

Fig. iPhone 11 Pro