// Storyboards

Home.storyboard
Search.storyboard
NewPost.storyboard & make initial view for every story board, set class, and storyboard ID
Profile.storyboard
Activity.storyboard

Firebase ⇒ NoSQL database

// ViewControllers

HomeViewController.swift
SearchViewController.swift
NewPostViewController.swift
ProfileViewController.swift
ActivityViewController.swift

* After change bundleID ⇒ clean the project

pod 'Firebase/Core'
pod 'Firebase/Auth'
pod 'Firebase/Storage'
pod 'Firebase/Database'

// set up the tabbar in AppDelegate

// FeedData.swift (data)

```
import UIKit

struct Post {
    var postImage: UIImage
    var postComment: String
    var user: User
    var commentCount: Int
    var likesCount: Int
    var datePosted: String
}

struct Story {
    var post: Post
}

class Model {
    var postList: [Post] = [Post]()
    var storyList: [Story] = [Story]()

    init() {
        let user1 = User(name: "John Carmack", profileImage: UIImage(named: "user1")!)
        ↓ user2

        let post1 = Post(postImage: UIImage(named: "destination1")!, postComment: "----", user: user1, commentCount: 5, likesCount: 10, datePosted: "3 Sept")
        postList.append(post1)
        ↓
```

// AppDelegate.swift

```
import UIKit
```

```
import Firebase
@UIApplicationMain
class AppDelegate: UIResponder, UIApplicationDelegate {
    var window: UIWindow?
    let tab
    func application(_ application: UIApplication, didFinishLaunchingWithOptions launchOptions:
    [UIApplication.LaunchOptionsKey: Any]?) -> Bool {

        FirebaseApp.configure()
        let tabController = UITabBarController()
        let homeStoryboard = UIStoryboard(name: "Home", bundle: "nil")
        let searchStoryboard = UIStoryboard(name: "Search", bundle: "nil")
        | other storyboards

        let homeVC = homeStoryboard.instantiateViewController(withIdentifier: "Home") as! HomeViewController
        let profileVC = - - -  - - -
        | other viewControllers


        let vcData: [(UIViewController, UIImage, UIImage)] = [
            (homeVC, UIImage(named: "home_tab_icon")!, UIImage(named: "home_selected_tab_icon")!),
            | for other VCs
        ]
        let VCS = vcData.map { (vc, defaultImage, selectedImage) -> UINavigationController in
            let nav = UINavigationController(rootViewController: vc)
            nav.tabBarItem.image = defaultImage
            nav.tabBarItem.selectedImage = selectedImage
            return nav
        }
        tabController.viewControllers = VCS
        tabController.tabBar.isTranslucent = false
        tabController.delegate = tabBarDelegate
        if let items = tabController.tabBar.items {
            for item in items {
                if let image = item.image {
                    item.image = image.withRenderingMode(UIImage.RenderingMode.alwaysOriginal)
                }
                if let selectedImage = item.selectedImage {
                    item.selectedImage = selectedImage.withRenderingMode(UIImage.RenderingMode.alwaysOriginal)
                }
                item.imageInsets = UIEdgeInsets(top: 6, left: 0, bottom: -6, right: 0) //hide the title

            }
        }
        UINavigationBar.appearance().backgroundColor = UIColor.white
        window?.rootViewController = tabController
        return true
    }
```

// CollectionLayout.swift

```
import UIKit

class CollectionLayout: UICollectionViewLayout {
    fileprivate var numberOfColumns: Int = 3
    fileprivate var cellPadding: CGFloat = 3
    fileprivate var cache = [UICollectionViewLayoutAttributes]()
    fileprivate var contentWidth: CGFloat {
        guard let collectionView = collectionView else {
            return 0
        }
        let insets = collectionView.contentInset
        return collectionView.bounds.width - (insets.left + insets.right) - (cellPadding * (CGFloat(numberOfColumns) - 1))
    }
    fileprivate var contentHeight: CGFloat = 0
    override var collectionViewContentSize: CGSize {
        return CGSize(width: contentWidth, height: contentHeight)
    }
    override func prepare() {
        guard cache.isEmpty == true, let collectionView = collectionView else {
            return
        }
        let itemsPerRow: Int = 3
        let normalColumnWidth: CGFloat = contentWidth / CGFloat(itemsPerRow)
        let normalColumnHeight: CGFloat = normalColumnWidth
        let featuredColumnWidth: CGFloat = (normalColumnWidth * 2) + cellPadding
        let featuredColumnHeight: CGFloat = featuredColumnWidth
        var xOffsets: [CGFloat] = [CGFloat]()
        for item in 0..<6 {                          // also is items per row
            let multiplier = item % 3
            let xPos = CGFloat(multiplier) * (normalColumnWidth + cellPadding)
            xOffsets.append(xPos)
        }
        xOffsets.append(0.0)
        for _ in 0..<2 {
            xOffsets.append(featuredColumnWidth + cellPadding)
        }
        for item in 0...<9 {
            var yPos = floor(Double(item/3)) * (Double(normalColumnHeight) + Double(cellPadding))
            if item == 8 {
                yPos += (Double(normalColumnHeight) + Double(cellPadding))
            }
            yOffsets.append(CGFloat(-yPos))
        }
        let numberOfItemsPerSection: Int = 9         // not the section in actual collection view,
                                                     // the part with repeatent pattern
        let heightOfSection: CGFloat = 4 * normalColumnHeight + (4 * cellPadding)
        var itemInSection: Int = 0
        for item in 0..<collectionView.numberOfItems(inSection: 0) {
            let indexPath = IndexPath(item: item, section: 0)
            let xPos = xOffsets[itemInSection]
```

```
                let multiplier:Double = floor(Double(item) / Double(numberOfItemsPerSection))
                let yPos = yOffsets[itemInSection] + (heightOfSection * CGFloat(multiplier))
                var cellWidth = normalColumnWidth
                var cellHeight = normalColumnHeight
                if (itemInSection+1)%7 == 0 && itemInSection != 0{
                    cellWidth = featuredColumnWidth
                    cellHeight = featuredColumnHeight
                }
                let frame = CGRect(x:xPos, y:yPos, width: cellWidth, height: cellHeight)
                let attributes = UICollectionViewLayoutAttributes(forCellWith: indexPath)
                attributes.frame = frame
                cache.append(attributes)
                contentHeight = max(contentHeight, frame.maxY)
                itemInSection = itemInSection < (numberOfItemsPerSection-1)? (itemInSection + 1) :0
            }
        }

    override func layoutAttributesForElements(in rect: CGRect) -> [UICollectionViewLayoutAttributes]?{
        var visibleLayoutAttributes = [UICollectionViewLayoutAttributes]()
        for attributes in cache{
            if attributes.frame.intersects(rect){
                visibleLayoutAttributes.append(attributes)
            }
        }
        return visibleLayoutAttributes
    }

    override func layoutAttributesForItem(at indexPath: IndexPath) -> UICollectionViewLayoutAttributes?{
        return cache[indexPath.item]
    }

}
```

UITabBarDelegate.swift

```
import UIKit

class TabBarDelegate : NSObject, UITabBarControllerDelegate {
    func tabBarController(_ tabBarController: UITabBarController, didSelect viewController: UIViewController) {
        let navigationController = viewController as? UINavigationController
        _ = navigationController?.popViewController(animated: false)
    }

    func tabBarController(_ tabBarController: UITabBarController, shouldSelect viewController: UIViewController) -> Bool {
        let selectedViewController = tabBarController.selectedViewController
        guard let _selectedViewController = selectedViewController else {
            return false
        }
        if viewController == _selectedViewController {
            return false
        }

        guard let controllerIndex = tabBarController.viewControllers?.index(of: viewController) else {
            return true
        }

        if controllerIndex == 2 {
            let newPostStoryboard = UIStoryboard(name: "NewPost", bundle: nil)
            let newPostVC = newPostStoryboard.instantiateViewController(withIdentifier: "NewPost") as!
                NewPostViewController
            let navController = UINavigationController(rootViewController: newPostVC)
            _selectedViewController.present(navController, animated: true, completion: nil)
            return false
        }

        let navigationController = viewController as? UINavigationController
        _ = navigationController?.popToRootViewController(animated: false)
        return true
    }
}
```

// CustomSegmentedControl.swift

```
import UIKit

protocol ActivityDelegate : class {
    func scrollTo(index: Int)
}

class CustomSegmentedControl: UIView{
    var buttons = [UIButton]()
    var selector: UIView!
    var selectedSegmentedIndex = 0
    let buttonTitles: [String] = ["Following", "You"]
    let textColor: UIColor = .lightGray
    let selectorColor: UIColor = .black
    let selectorTextColor: UIColor = .black
    weak var delegate : ActivityDelegate?
    override func awakeFromNib(){
        super.awakeFromNib()
        updateView()
    }
    func updateView(){
        buttons.removeAll()
        subviews.forEach { (view) in
            view.removeFromSuperview()
        }
        for buttonTitle in buttonTitles{
            let button = UIButton.init(type: .system)
            button.setTitle(buttonTitle, for: .normal)
            button.setTitleColor(textColor, for: .normal)
            button.addTarget(self, action: #selector(buttonTapped(button:)), for: .touchUpInside)
            buttons.append(button)
        }
        buttons[0].setTitleColor(selectorTextColor, for: .normal)
        let selectorWidth = frame.width / CGFloat(buttonTitles.count)
        let y = (self.frame.maxY - self.frame.minY) - 2.0
        selector = UIView.init(frame: CGRect.init(x:0, y:y, width: selectorWidth, height: 2.0))
        selector.backgroundColor = selectorColor
        addSubview(selector)
        let stackView = UIStackView(arrangedSubviews: buttons)
        stackView.axis = .horizontal
        stackView.alignment = .fill
        stackView.distribution = .fillEqually
        stackView.spacing = 0.0
        addSubview(stackView)
        stackView.translatesAutoresizingMaskIntoConstraints = false
        stackView.topAnchor.constraint(equalTo: self.topAnchor).isActive = true
        ↓ similar for botton, left, right
}
```

```
@objc func buttonTapped(button: UIButton){
    for (buttonIndex, btn) in buttons.enumerated(){
        btn.setTitleColor(textColor, for: .normal)
        if btn == button{
            selectedSegmentIndex = buttonIndex
            delegate?.scrollTo(index: selectedSegmentIndex)

        }
    }
}

func updateSegmentedControlSegs(index:Int){
    for btn in buttons{
        btn.setTitleColor(textColor, for: .normal)
    }
    let selectorStartPosition = frame.width / CGFloat(buttons.count) * CGFloat(index)

    UIView.animate(withDuration:0.3){
        self.selector.frame.origin.x = selectorStartPosition
    }

    buttons[index].setTitleColor(selectorTextColor, for: .normal)
  }
}
```

// StoryCollectionViewCell.swift (Views) also create XIB file

* change the reuseIdentifier to "StoryCollectionViewCell"
width = 90 height = 110
background color → white
* image 8-8 ratio → 1:1
* add a label

background color → F7F7F7

```
import UIKit

class StoryCollectionViewCell: UICollectionViewCell{
    @IBOutlet weak var storyImage: UIImageView!
    @IBOutlet weak var userNameLabel: UILabel!

    override func awakeFromNib(){
        super.awakeFromNib()

        storyImage.layer.cornerRadius = storyImage.frame.width/2
        storyImage.layer.masksToBounds = true
        storyImage.layer.borderColor = UIColor.white.cgColor
        storyImage.layer.borderWidth = CGFloat(3.0)
    }
```

// StoriesTableViewCell.swift (Views) * also create XIB file * height 125

F7F7F7

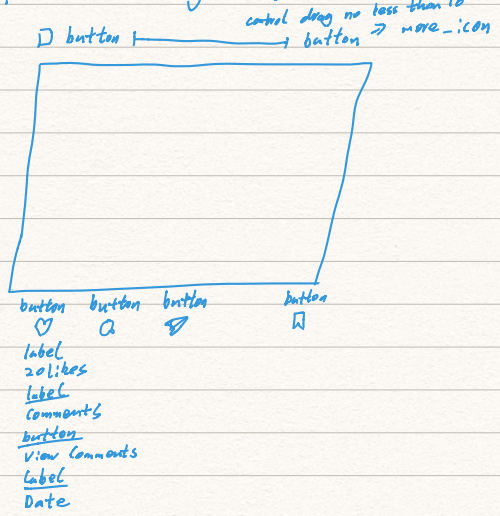
```
import UIKit

class StoriesTableViewCell: UITableViewCell, UICollectionViewDelegate, UICollectionViewDataSource, UICollectionViewDelegateFlowLayout{
    lazy var stories: [Story] ={
        let model = Model()
        return model.storyList
    }()

    @IBOutlet weak var collectionView: UICollectionView!

    override func awakeFromNib(){
        super.awakeFromNib()                    (add collection to the xib file)
        selectionStyle = UITableViewCell.SelectionStyle.none
        collectionView.register(UINib(nibName: "StoryCollectionViewCell", bundle: nil), forCellWithReuseIdentifier: "StoryCollectionViewCell")
        collectionView.delegate =self
        collectionView.dataSource =self

    }
    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int{
        return stories.count
    }

    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell{
        let cell= collectionView.dequeueReusableCell(withReuseIdentifier: "StoryCollectionViewCell", for: indexPath) as! StoryCollectionViewCell
        cell.storyImage.image = stories[indexPath.row].post.postImage
        cell.userNameLabel.text = stories[indexPath.row].post.user.name

        return cell
    }

    func collectionView(_ collectionView: UICollectionView, layout collectionViewLayout: UICollectionViewLayout, sizeForItemAt indexPath: IndexPath)->
    CGSize{
        return CGSize(width: 90, height: 110)
    }
```

// FeedTableViewCell.swift (Views) *also create XIB

import UIKit

* change the XIB reuse identifier
width 599, height 685
*profile image, constrain to margins not selected

control drag no less than 10 → more_icon




```
class FeedTableViewCell: UITableViewCell{
    @IBOutlet weak var profileImage: UIImageView!
    ↓ other buttons, labels, image views

    override func awakeFromNib(){
        super.awakeFromNib()
        profileImage.layer.cornerRadius = profileImage.frame.width/2
        profileImage.layer.maskToBounds = true
        selectionStyle = UITableViewCell.selectionStyle.none
    }
```

// Explore CollectionViewCell.swift (views)

```
import UIKit

class Explore CollectionView Cell: UI Collection View Cell{
    @IBOutlet weak var exploreImage: UIImageView!

}
```

// SearchBarContainerView.swift (Views)

```
import UIKit

class SearchBarContainerView: UIView{
    let searchBar: UISearchBar
    init(customSearchBar: UISearchBar){
        searchBar = customSearchBar
        super.init(frame. CGRect.zero)
        addSubview(searchBar)
    }
    convenience override init(frame: CGRect){
        self.init(customSearchBar: UISearchBar())
        self.frame = frame
    }
    required init?(coder aDecoder: NSCoder){
        fatalError("init(coder:) has not been implemented
    }
    override func layoutSubviews(){
        super.layoutSubviews()
        searchBar.frame = bounds
    }
}
```

// PhotoCollectionViewCell.swift (views)

```
import UIKit

class PhotoCollectionViewCell: UICollectionViewCell{
    @IBOutlet weak var photoImageView: UIImageView!
}
```

// ActivityTableViewCell.swift (Views)

```
import UIKit

class ActivityTableViewCell: UITableViewCell {
    @IBOutlet weak var profileImage: UIImageView!
    @IBoutlet weak var detailsLabel: UILabel!

    override func awakeFromNib(){
        super.awakeFromNib()
        profileImage.layer.masksToBounds = true
        selectionStyle = .none
    }

    override func layoutSubviews(){
        super.layoutSubviews()
        profileImage.layer.cornerRadius = profileImage.frame.width/2
    }
```

// ActivityView.swift (views)

```
import UIKit

class ActivityView: UIView, UITableViewDataSource, UITableViewDelegate{
    @IBOutlet weak var tableView: UITableView!
    var activityData: [Activity] = [Activity](){
        didSet{
            tableView.reloadData()
        }
    }

    override func awakeFromNib(){
        super.awakeFromNib()
        tableView.register(UINib(nibName: "ActivityTableViewCell", bundle: nil), forCellReuseIdentifier: "ActivityTableViewCell")
        tableView.delegate = self
        tableView.dataSource = self
        tableView.tableFooterView = UIView()
    }

    func tableView(_ tableView: UITableView, heightForRowAt indexPath: IndexPath) -> CGFloat{
        return CGFloat(80.0)
    }
```

```
func tableView(_ tableView: UITableView, numberOfRowsInSection section: Int) -> Int {
    return activityData.count
}

func tableView(_ tableView: UITableView, cellForRowAt indexPath: IndexPath) -> UITableViewCell {
    let cell = tableView.dequeueReusableCell(withIdentifier: "ActivityTableViewCell") as!
        ActivityTableViewCell
    cell.profileImage.image = activityData[indexPath.row].userImage
    cell.detailsLabel.text = activityData[indexPath.row].details
    return cell
}

}
```

// HomeViewController.swift (ViewControllers)

```
import UIKit

class HomeViewController: UIViewController, UITableViewDelegate, UITableViewDataSource{
    @IBOutlet weak var tableView: UITableView!

    lazy var posts: [Post] = {
        let model = Model()
        return model.postList
    }()

    override func viewDidLoad(){
        super.viewDidLoad()
        tableView.estimatedRowHeight = CGFloat(88.0)
        tableView.rowHeight = UITableView.automaticDimension   } auto adjust row height
        tableView.register(UINib(nibName: "FeedTableViewCell", bundle: nil), forCellReuseIdentifier: "FeedTableViewCell")
        tableView.register(UINib(nibName: "StoriesTableViewCell", bundle: nil), forCellReuseIdentifier: "StoriesTableViewCell")
        tableView.dataSource = self
        tableView.delegate = self
        tableView.tableFooterView = UIView()

        var rightBarItemImage = UIImage(named: "send_nav_icon")
        rightBarItemImage = rightBarItemImage?.withRenderingMode(.alwaysOriginal)
        self.navigationItem.rightBarButtonItem = UIBarButtonItem(image: rightBarItemImage, style: .plain, target: nil, action: nil)

        var leftBarItemImage = UIImage(named: "camera_nav_icon")
        leftBarItemImage = leftBarItemImage?.withRenderingMode(.alwaysOriginal)
        self.navigationItem.rightBarButtonItem = UIBarButtonItem(image: leftBarItemImage, style: .plain, target: nil, action: nil)

        let profileImageView = UIImageView(image: UIImage(named: "logo_nav_icon"))
        self.navigationItem.titleView = profileImageView
    }

    func tableview(_ tableView: UITableView, numberOfRowsInSection section: Int) -> Int{
        return posts.count + 1
    }

    func tableView(_ tableView: UITableView, cellForRowAt indexPath: IndexPath) -> UITableViewCell{
        if indexPath.row == 0{
            let cell = tableView.dequeueReusableCell(withIdentifier: "StoriesTableViewCell") as! StoriesTableViewCell
            return cell
        }
        let cell = tableView.dequeueReusableCell(withIdentifier: "FeedTableViewCell") as! FeedTableViewCell
        let currentIndex = indexPath.row - 1
        let postData = posts[currentIndex]
        cell.profileImage.image = postData.user.profileImage
        ↓ similar ones
        cell.userNameTitleButton.setTitle(postData.user.name, for: .normal)
        return cell
    }
```

```
// SearchViewController.swift (viewControllers)          * set the identifier and class for cells
import UIKit

class SearchViewController: UIViewController, UICollectionViewDelegate, UICollectionViewDataSource{

    @IBOutlet weak var collectionView: UICollectionView!
    var searchController: UISearchController!
    lazy var posts: [Post] ={                    * change to custom for the layout option
        let model = Model()                      # Collection View => Custom => class: CollectionLayout
        return model.postList
    }()




    override func viewDidLoad(){
        super.viewDidLoad()
        collectionView.delegate =self
        collectionView.dataSource =self
        searchController = UISearchController(searchResultsController: nil)
        searchController.obscuresBackgroundDuringPresentation = true
        searchController.searchBar.showsCancelButton = false
        for subView in searchController.searchBar.subviews{
            for subview1 in subView.subViews{
                if let textField = subview1 as? UITextField{
                    textField.backgroundColor = UIColor(red: 0.93, green: 0.93, blue: 0.93, alpha: 1.0)
                    textField.textAlignment = NSTextAlignment.center
                }
            }
        }
        searchController.dimsBackgroundDuringPresentation = false
        searchController.definesPresentationContext = true
        searchController.hidesNavigationBarDuringPresentation = false
        let searchBarContainer = SearchBarContainerView(customSearchBar: searchController.searchBar)
        searchBarContainer.frame = CGRect(x:0, y:0, width: view.frame.width, height:44)
        navigationItem.titleView = searchBarContainer
    }

    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int{
        return posts.count
    }

    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell{
        let cell = collectionView.dequeueReusableCell(withIdentifier: "ExploreCollectionViewCell", for: indexPath) as!
            ExploreCollectionViewCell
        cell.exploreImage.image = posts[indexPath.row].postImage

        return cell
    }
```

//NewPostViewController.swift (ViewController)

```
import UIKit

enum NewPostPagesToShow: Int{
    case library, camera
    var identifier: String{
        switch self{
        case .library:
            return "PhotoLibraryVC"
        case .camera:
            return "CameraVC"
        }
    }
    static func pagesToShow() -> [NewPostPagesToShow]{
        return [.library, .camera]
    }

}

class NewPostViewController: UIViewController{



    override func viewDidLoad(){
        super.viewDidLoad()
        navigationItem.leftBarButtonItem = UIBarButtonItem(title: "Cancel", style: .plain, target: self, action: #selector(cancelButtonPressed))
        navigationController?.navigationBar.titleTextAttributes =
            [NSAttributedString.Key.foregroundColor: UIColor.black]


    }

    override var prefersStatusBarHidden: Bool{
        return true
    }

    @objc func cancelButtonPressed(){
        dismiss(animated: true, completion: nil)
    }

    @IBAction func libraryButtonDidTouch(_ sender: Any){
        NotificationCenter.default.post(name: NSNotification.Name("newPage"), object: NewPostPagesToShow.library)
    }

    @IBAction func photoButtonDidTouch(_ sender: Any){
        NotificationCenter.default.post(name: NSNotification.Name("newPage"), object: NewPostPagesToShow.camera)
    }
```

// NewPostPageViewController.swift (ViewControllers)

```
import UIKit

class NewPostPageViewController: UIPageViewController, UIPageViewControllerDelegate{
    var orderedViewControllers: [UIViewController] = [UIViewController]()
    var pagesToShow: [NewPostPagesToShow] = NewPostPagesToShow.pagesToShow()
    var currentIndex: Int = 0
    override func viewDidLoad(){
        super.viewDidLoad()
        delegate = self
        dataSource = self
        for pageToShow in pagesToShow{
            let page = newViewController(pageToShow: pageToShow)
            orderedViewControllers.append(page)
        }

        if let firstViewController = orderedViewControllers.first{
            setViewControllers([firstViewController], direction: UIPageViewController.NavigationDirection.forward, animated: true, completion: nil)
        }
        NotificationCenter.default.addObserver(self, selector: #selector(NewPostPageViewController.newPage(notification:)),
            name: NSNotification.Name(rawValue: "newPage"), object: nil)
    }
    @objc func newPage(notification: NSNotification){
        if let receivedObject = notification.object as? NewPostPagesToShow{
            showViewController(index: receivedObject.rawValue)
        }
    }
    private func newViewController(pageToShow: NewPostPagesToShow) -> UIViewController{
        var viewController: UIViewController!
        let newPostStoryboard = UIStoryboard(name: "NewPost", bundle: nil)
        switch pageToShow{
        case .camera:
            viewController = newPostStoryboard.instantiateViewController(withIdentifier: pageToShow.identifier) as! CameraViewController
        case .library:
            viewController = newPostStoryboard.instantiateViewController(withIdentifier: pageToShow.identifier) as! PhotoLibraryViewController
        }
        return viewController
    }

    func showViewController(index: Int){
        if currentIndex > index{
            setViewControllers([orderedViewControllers[index]], direction: UIPageViewController.NavigationDirection.reverse, animated: true, completion: nil)
        }
        else if currentIndex < index{
            setViewControllers([orderedViewControllers[index]], direction: UIPageViewController.NavigationDirection.forward, animated: true, completion: nil)
        }
        currentIndex = index
    }
```

```
    deinit {
        NotificationCenter.default.removeObserver(self)
        NotificationCenter.default.removeObserver(self, name: NSNotification.Name(rawValue: "newPage"), object: nil)
    }

}

extension NewPostPageViewController: UIPageViewControllerDataSource {
    // return the view controller after the given view controller
    func pageViewController(_ pageViewController: UIPageViewController, viewControllerAfter viewController: UIViewController) -> UIViewController? {
        guard let viewControllerIndex = orderedViewControllers.index(of: viewController) else {
            return nil
        }
        let nextIndex = viewControllerIndex + 1
        let orderedViewControllerCount = orderedViewControllers.count
        guard orderedViewControllerCount != nextIndex else {
            return nil
        }
        guard orderedViewControllerCount > nextIndex else {
            return nil
        }
        return orderedViewControllers[nextIndex]
    }

    func pageViewController(_ pageViewController: UIPageViewController, viewControllerBefore viewController: UIViewController) -> UIViewController? {
        guard let viewControllerIndex = orderedViewControllers.index(of: viewController) else {
            return nil
        }
        let previousIndex = viewControllerIndex - 1
        guard previousIndex >= 0 else {
            return nil
        }
        return orderedViewControllers[previousIndex]
    }
```

// CameraViewController.swift (ViewControllers)

```
import UIKit

class CameraViewController: UIViewController {
    @IBOutlet weak var simpleCameraView: SimpleCameraView!
    var simpleCamera: SimpleCamera!

    override func viewDidLoad(){
        super.viewDidLoad()
        simpleCamera = SimpleCamera(cameraView: simpleCameraView)
    }

    override func viewWillAppear(_ animated: Bool){
        super.viewWillAppear(animated)
        simpleCamera.startSession()
    }
    override func viewWillDisappear(_ animated: Bool){
        super.viewWillDisappear(animated)
        simpleCamera.stopSession()
    }

    @IBAction func startCapture(_ sender: Any){
        if simpleCamera.currentCaptureMode == .photo{
            simpleCamera.takePhoto{(image, success) in
                if sucess{
                    print("image success")
                }
            }
        }
    }

}
```

⊗ plist ⇒ Camera usage
Microphone
Photo Library

// PhotoLibraryViewController.swift (ViewControllers)

```
import UIKit

import Photos

class PhotoLibraryViewController: UIViewController, UICollectionViewDataSource, UICollectionViewDelegate, UICollectionViewDelegateFlowLayout {

    @IBOutlet weak var photosCollectionView: UICollectionView!

    var images = [PHAsset]()
```

→ Alt + click ⇒ A representation of an image, video, or live photo in the photos library

* change Reuse Identifier

```
    override func viewDidLoad() {
        super.viewDidLoad()

        // Do any additional setup after loading the view.

        photosCollectionView.delegate = self

        photosCollectionView.dataSource = self

        if PHPhotoLibrary.authorizationStatus() == .authorized {

            getImages()

        }
        else {

            PHPhotoLibrary.requestAuthorization { (status) in

                switch status {

                case .authorized:

                    DispatchQueue.main.async {

                        self.getImages()

                    }

                case .denied, .notDetermined, .restricted:

                    return

                }

            }

        }

    }

    func getImages() {

        let assets = PHAsset.fetchAssets(with: PHAssetMediaType.image, options: nil)

        assets.enumerateObjects({ (object, count, stop) in

            // self.cameraAssets.add(object)
            self.images.append(object)
        })

        //In order to get latest image first, we just reverse the array
        self.images.reverse()

        // To show photos, I have taken a UICollectionView
        self.photosCollectionView.reloadData()
    }

    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int {

        return images.count

    }
```

```
    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell {

        let cell = collectionView.dequeueReusableCell(withReuseIdentifier: "PhotoCell", for: indexPath) as! PhotoCollectionViewCell

        let asset = images[indexPath.row]

        let manager = PHImageManager.default()

        if cell.tag != 0 {
            manager.cancelImageRequest(PHImageRequestID(cell.tag))
        }

        cell.tag = Int(manager.requestImage(for: asset,
                                            targetSize: CGSize(width: 120.0, height: 120.0),
                                            contentMode: .aspectFill,
                                            options: nil) { (result, _) in
                                                cell.photoImageView?.image = result
        })

        return cell

    }

    func collectionView(_ collectionView: UICollectionView, layout collectionViewLayout: UICollectionViewLayout, sizeForItemAt indexPath: IndexPath) ->
CGSize {

        let width = self.view.frame.width * 0.32

        let height = self.view.frame.height * 0.179910045

        return CGSize(width: width, height: height)

    }

    func collectionView(_ collectionView: UICollectionView, layout collectionViewLayout: UICollectionViewLayout, minimumLineSpacingForSectionAt section:
Int) -> CGFloat {

        return 2.5
    }

    func collectionView(_ collectionView: UICollectionView, layout collectionViewLayout: UICollectionViewLayout, insetForSectionAt section: Int) ->
UIEdgeInsets {
        return UIEdgeInsets(top: 5, left: 5, bottom: 5, right: 5)
    }

    func collectionView(_ collectionView: UICollectionView, layout collectionViewLayout: UICollectionViewLayout, minimumInteritemSpacingForSectionAt
section: Int) -> CGFloat {
        return 0
    }

}
```

⇒ chek storyboard make sure no conflict

```
// ActivityViewController.swift  (ViewControllers)

import UIKit

class ActivityViewController: UIViewController, UIScrollViewDelegate{
    @IBOutlet weak var segmentedControl: CustomSegmentedControl!{
        didSet{
            segmentedControll.delegate = self
        }
    }

    @IBOutlet weak var scrollView: UIScrollView!{
        didSet{
            scrollView.delegate = self
        }
    }
    var currentIndex:Int = 0
    lazy var slides:[ActivityView] = {
        let followingActivityData = FollowingActivityModel()
        let followingView = Bundle.main.loadNibNamed("Activity", owner: nil, options: nil)?.first as! ActivityView
        followingView.activityData = followingActivityData.followingActivity
        let youActivityData = YouActivityModel()
        let youView = Bundle.main.loadNibNamed("ActivityView", owner: nil, options: nil)?.first as! ActivityView
        youView.activityData = youActivityData.youActivity
        return [followingView, youView]
    }()

    override func viewDidLoad(){
        super.viewDidLoad()
        setupSlideScrollView(slides: slides)
    }

    override func viewWillAppear(_ animated:Bool){
        super.viewWillAppear(animated)
        self.navigationController?.setNavigationBarHidden(true, animated:false)
    }

    override func viewWillDisappear(_ animated:Bool){
        super.viewWillDisappear(animated)
        self.navigationController?.setNavigationBarHidden(false, animated:false)
    }

    func setupSlideScrollView(slides:[ActivityView]){
        scrollView.frame = CGRect(x:0, y:0, width:view.frame.width, height:view.frame.height)
        scrollView.contentSize = CGSize(width:view.frame.width * CGFloat(slides.count), height:view.frame.height)
        scrollView.isPagingEnabled = true
        for i in 0..<slides.count{
            slides[i].frame = CGRect(x:view.frame.width * CGFloat(i), y:0, width:view.frame.width, height:
                view.frame.height)
            scrollView.addSubview(slides[i])
```

```
        }
    }

    func scrollViewDidScroll(_ scrollView: UIScrollView) {
        let pageIndex = round(scrollView.contentOffset.x / view.frame.width)
        segmentedControl.updateSegmentedControlSegs(index: Int(pageIndex))
        currentIndex = Int(pageIndex)
    }
}

extension ActivityViewController: ActivityDelegate {
    func scrollTo(index: Int) {
        if currentIndex = index {
            return
        }
        let pageWidth: CGFloat = self.scrollView.frame.width
        let slideToX = pageWidth * CGFloat(index)
        self.scrollView.scrollRectToVisible(CGRect(x: slideToX, y: 0, width: pageWidth, height: self.scrollView.frame.height),
            animated: true)
    }
}
```