**********Playground**********

```
//: Playground - noun: a place where people can play

import UIKit

var str = "Hello, playground"

////to calculate gst and cgst on a bill amount
var bill_amount:Float=1000;
var gst=2.5
var gsct=2.5

var total_bill:Float =
bill_amount+((bill_amount*2.5)/100)+((bill_amount*2.5)/100)
print("This is a total bill: \(total_bill)")

// finbo
func fibonaccil(n: Int) {
    var f1=1, f2=1, fib=0
    for i in 1...n {
        fib = f1 + f2
        print("Fibonacci: \(i) = \(fib)")
        f1 = f2
        f2 = fib

    }
}
fibonaccil(n:10)

// to calculate simple intrest
```

```swift
var i:Int;
var p:Int = 1000;
var r:Int = 2
var n:Int=10

i = p*r*n / 100
print(i)

// to check enter number is armstrong or not
func checknumber(num:Int)-> String
{
    var sum:Int = 0;
    var tempNum = num
    var reminder = 0

    while tempNum != 0 {
        reminder = tempNum % 10
        sum = sum + reminder * reminder * reminder
        tempNum /= 10
    }
    if(num == sum)
    {
        return "Yes"
    }
    else
    {
        return "No"
    }
}
let numAm = 153
```

```
let resultAm = checknumber(num: numAm)
print(resultAm)

// useg of swich case
var a:Int = 20
var b:Int = 30
var c:Int
var choice:Int = 1;
switch choice{

case 1: c = a + b
print(c)
    break
case 2: c = a-b
print(c)
    break
default:
    print("this is undefine number")
}

// to find largest number for the given three numbers

var x:Int = 70
var y:Int=20
var z:Int = 30


if(x>y)
{
    print("x is largest y")
}
```

```
else if(x>z)
{
    print("x is largest z")
}
else
{
    print("x is  not largest")
}

func max_three(_ x: Int, _ y: Int, _ z: Int) -> Int {
    if x > y, x > z
    {
        return x
    }
    else if y > z, y > x
    {
        return y
    }
    else if z > y, z > x
    {
        return z
    }
    else if x == y, y > z
    {
        return x
    }
    else if y == z, z > x
    {
        return y
```

```
    }
    else
    {
        return x
    }
}

print(max_three(1, 2, 3))
print(max_three(3, 2, 5))
print(max_three(-3, -2, 0))

// to print only odd number using for in

var arr = [0,1,5,7,8,9,32]
for n in arr
{
    if(n % 2 == 0){
        print("\(n) is even")
    }else{
        print("\(n) is odd")
    }
}
```

Answer:

This is a total bill: 1050.0
Fibonacci: 1 = 2
Fibonacci: 2 = 3
Fibonacci: 3 = 5

Fibonacci: 4 = 8
Fibonacci: 5 = 13
Fibonacci: 6 = 21
Fibonacci: 7 = 34
Fibonacci: 8 = 55
Fibonacci: 9 = 89
Fibonacci: 10 = 144
200
Yes
50
x is largest y
3
5
0
0 is even
1 is odd
5 is odd
7 is odd
8 is even
9 is odd
32 is even

—----------

**********Dsir**********

//JSON - Part - I
*********ViewController********

```swift
//
//  ViewController.swift
//  News
//
//  Created by Dhaval on 01/04/22.
//

import UIKit

class ViewController: UIViewController {

    var imgList = [String]()
    var titleList = [String]()

    override func viewDidLoad() {
        super.viewDidLoad()
        loadnews()
    }

    func loadnews()
    {
        let myurl = URL(string:
"https://newsapi.org/v2/everything?q=tesla&from=2022-03-01
&sortBy=publishedAt&apiKey=e25fb41c8d7e46d7a94ab8b3e
837642c")

        let request = URLRequest(url: myurl!)

        //task
```

```
        let task = try! URLSession.shared.dataTask(with:
request)
        { [self]
            (data,URLResponse,Error) in

            let jsonData = try! JSONSerialization.jsonObject(with:
data!, options: .mutableContainers) as! [String:Any]
            let article = jsonData["articles"] as! NSArray
            let title =  article.value(forKey: "title")

            self.titleList = title as! [String]
            let imgUrl = article.value(forKey: "urlToImage")
            self.imgList = imgUrl as! [String]
            print(data,title,imgUrl)
        }

        task.resume()
    }



}

**********TableView**********
//TableView

//
//  ViewController.swift
//  Car Table List
//
```

```
//  Created by Dhaval on 01/04/22.
//

import UIKit

class ViewController:
UIViewController,UITableViewDelegate,UITableViewDat
aSource {

    var listImage =
["https://media.zigcdn.com/media/model/2021/Nov/am
g-a45-5_360x240.jpg","https://media.zigcdn.com/medi
a/model/2021/Sep/amg-glc-43_360x240.jpg","https://m
edia.zigcdn.com/media/model/2021/Sep/amg-e-63_360
x240.jpg","https://media.zigcdn.com/media/model/202
1/Aug/amg-gle-63_360x240.jpg"]
    var listTitle = ["Mercedes-Benz AMG A45
S","Mercedes-Benz AMG GLC 43","Mercedes-Benz
AMG E 63","Mercedes-Benz AMG GLE 63 S"]
    var listPrice = ["Rs. 79.50 Lakh","Rs. 85.40
Lakh","Rs. 1.73 Crore","Rs. 2.10 Crore"]

   // var imgArray = ["1.jpg","2.jpg","3.jpg","4.jpg"]

    // No of items/rows
    func tableView(_ tableView: UITableView,
numberOfRowsInSection section: Int) -> Int {
```

```
        return listTitle.count
    }

    // value of each item
    func tableView(_ tableView: UITableView,
cellForRowAt indexPath: IndexPath) ->
UITableViewCell {

        let cell =
tableView.dequeueReusableCell(withIdentifier:
"myCell") as! myTableViewCell
        cell.CarName.text = listTitle[indexPath.row]
        cell.CarPrice.text = listPrice[indexPath.row]
        let iurl = URL(string: listImage[indexPath.row])
        let request = try! Data(contentsOf: iurl!)
        cell.myImage.image = UIImage(data: request)

        //cell.myImage.image = UIImage(named:
imgArray[indexPath.row])
        return cell
    }


    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view.
    }
```

```
}

************************************

//UIImageView and Alert Controller

//
//  ViewController.swift
//  ImageAlert
//
//  Created by Dhaval on 14/03/22.
//

import UIKit

class ViewController: UIViewController {

    //Create outlets here

    @IBOutlet weak var myImage: UIImageView!

    override func viewDidLoad() {
        super.viewDidLoad()
        //to show static image from project dir
```

```
        myImage.image = UIImage(named: "hack.jpg")
    }

    //Create Actions here
    @IBAction func submit(_ sender: Any) {
        //click event for submit

        let alert = UIAlertController(title: "Warning",
message: "Do you want to load image from URL?",
preferredStyle: .alert)
        alert.addAction(UIAlertAction(title: "Yes", style:
.default, handler: {
            ACTION in
            self.change_image()
        }))
        alert.addAction(UIAlertAction(title: "No", style:
.destructive, handler: nil))
        self.present(alert,animated: true,completion: nil)

    }

    func change_image()
    {
        //OPEN Image from URL
        let imgURL = URL(string:
"https://www.freepnglogos.com/uploads/apple-logo-p
```

```
ng/apple-logo-png-dallas-shootings-don-add-are-speech-zones-used-4.png")
        let imgData = try! Data(contentsOf: imgURL!)
        myImage.image = UIImage(data: imgData)
    }
}

*******************************
```

Session 1 : Fundamentals of Swift
Date : 23/02/2022
LAB : 2MCA4

```
import UIKit
/*
print("Hello World")

//var a:Int = 20
//var name:String = "Dhaval"

var a = 20
var b = 30
var c = a + b
var name = "Dhaval"
print(a,b,c,name,separator: "--",terminator: "\nThank You")
*/
//Function with return type
```

```
func display()
{
    print("Hello RKU")
}

display()

func add(a:Int,b:Int)
{
    var c = a + b
    print(c)
}

add(a: 20, b: 50)

//Function with return type

func sub(a:Int,b:Int) -> Int
{
    var c = b - a
    return c
}

var ans = Double(sub(a: 30, b: 50))

ans = ans + (ans * 0.18)

print(ans)

---------------------------------------------------------
```

*****S**Playground******************

```
//: Playground - noun: a place where people can play

import UIKit

var str = "Hello, playground"

//to calculate gst and cgst on a bill amount

var bill_amount:Float=1000;

var gst=2.5

var gsct=2.5


var total_bill:Float = bill_amount+((bill_amount*2.5)/100)+((bill_amount*2.5)/100)

print("This is a total bill: \(total_bill)")



// finbo
func fibonacciI(n: Int) {
    var f1=1, f2=1, fib=0
    for i in 1...n {
        fib = f1 + f2
        print("Fibonacci: \(i) = \(fib)")
        f1 = f2
        f2 = fib

    }
```

```
}
fibonacciI(n:20)

// to calculate simple intrest
var i:Int;
var p:Int = 1000;
var r:Int = 2
var n:Int=10

i = p*r*n / 100
print(i)

// to chech enter number is armstrong or not
func checknumber(num:Int)-> String
{
    var sum:Int = 0;
    var tempNum = num
    var reminder = 0

    while tempNum != 0 {
        reminder = tempNum % 10
        sum = sum + reminder * reminder * reminder
        tempNum /= 10
    }
    if(num == sum)
    {
        return "Yes"
    }
    else
    {
        return "No"
```

```
    }
}
let numAm = 153
let resultAm = checknumber(num: numAm)
print(resultAm)

// useg of swich case
var a:Int = 20
var b:Int = 30
var c:Int
var choice:Int = 1;
switch choice{

case 1: c = a + b
print(c)
    break
    case 2: c = a-b
    print(c)
    break
default:
    print("this is undifine number")
}

// to find largest number for the given three numbers

var x:Int = 70
var y:Int=20
var z:Int = 30


if(x>y)
```

```
{
    print("x is largest y")
}
else if(x>z)
{
    print("x is largest z")
}
else
{
    print("x is  not largest")
}

func max_three(_ x: Int, _ y: Int, _ z: Int) -> Int {
    if x > y, x > z
    {
        return x
    }
    else if y > z, y > x
    {
        return y
    }
    else if z > y, z > x
    {
        return z
    }
    else if x == y, y > z
    {
        return x
    }
    else if y == z, z > x
```

```
    {
        return y
    }
    else
    {
        return x
    }
}

print(max_three(1, 2, 3))
print(max_three(3, 2, 1))
print(max_three(-3, -2, 0))

// to print only odd number using for in

var arr = [1,5,7,8,9,32]
for n in arr
{
    if(n % 2 == 0){
        print("\(n) is even")
    }else{
        print("\(n) is odd")
    }
}
```

---

pilindrom***

```
var num = 1513;
```

```
var rem = 0;
var sum = 0;
var flag = num;
var flag = 0;

for i in 1...4
{
        rem = num % 10;
        sum = sum * 10 + rem;
        num = num / 10;
        flag = rem;
}

if(flag == temp)
{
        print("Yes");
}
else
{
        print("No");
}
```

—----------*S*----------

Addition (SUM)

```
//
//  ViewController.swift
//  Addtion
//
//  Created by R K University on 15/04/22.
//  Copyright © 2022 RKU. All rights reserved.
//

import UIKit

class ViewController: UIViewController {

    var res:Int = 0;

    @IBOutlet var txt1: UITextField!
    @IBOutlet var txt2: UITextField!
    @IBOutlet var lblres: UILabel!
```

```
    @IBAction func btnsum(_ sender: Any) {
        res = Int(txt1.text!)! + Int(txt2.text!)!
        lblres.text = String(res);

    }
    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }


}
```

—----------

*****D**********

```
//
//  ViewController.swift
//  IBrowser1
//
//  Created by R K University on 14/03/22.
//  Copyright © 2022 RKU. All rights reserved.
//

import UIKit

class ViewController: UIViewController {

    @IBOutlet var Mytextfiled: UITextField!
    @IBOutlet var Mywebview: UIWebView!
    var temp_Address = ""

    override func viewDidLoad() {
        super.viewDidLoad()
        temp_Address="https://www.google.com"
```

```
        loadwebsite(address: temp_Address)

        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

    @IBAction func Submit(_ sender: Any) {
        temp_Address = Mytextfiled.text!
        loadwebsite(address: temp_Address)
    }


    func loadwebsite(address:String){
        let myUrl = URL(string:address)
        let request = URLRequest(url: myUrl!)
        Mywebview.loadRequest(request)
    }

}
```

```
//UIImageView and Alert Controller

//
//  ViewController.swift
//  ImageAlert
//
//  Created by Dhaval on 14/03/22.
//

import UIKit

class ViewController: UIViewController {
```

```
    //Create outlets here

    @IBOutlet weak var myImage: UIImageView!

    override func viewDidLoad() {
        super.viewDidLoad()
        //to show static image from project dir
        myImage.image = UIImage(named: "hack.jpg")
    }

    //Create Actions here
    @IBAction func submit(_ sender: Any) {
        //click event for submit

        let alert = UIAlertController(title: "Warning", message: "Do you want to load image from
URL?", preferredStyle: .alert)
        alert.addAction(UIAlertAction(title: "Yes", style: .default, handler: {
            ACTION in
            self.change_image()
        }))
        alert.addAction(UIAlertAction(title: "No", style: .destructive, handler: nil))
        self.present(alert,animated: true,completion: nil)

    }

    func change_image()
    {
        //OPEN Image from URL
        let imgURL = URL(string:
"https://www.freepnglogos.com/uploads/apple-logo-png/apple-logo-png-dallas-shootings-don-ad
d-are-speech-zones-used-4.png")
        let imgData = try! Data(contentsOf: imgURL!)
        myImage.image = UIImage(data: imgData)
    }
}
```

Session 1 : Fundamentals of Swift
Date : 23/02/2022
LAB : 2MCA4

```
import UIKit
/*
print("Hello World")

//var a:Int = 20
//var name:String = "Dhaval"

var a = 20
var b = 30
var c = a + b
var name = "Dhaval"
print(a,b,c,name,separator: "--",terminator: "\nThank You")
*/
//Function with return type

func display()
{
   print("Hello RKU")
}

display()

func add(a:Int,b:Int)
{
   var c = a + b
   print(c)
}

add(a: 20, b: 50)

//Function with return type

func sub(a:Int,b:Int) -> Int
{
   var c = b - a
   return c
}

var ans = Double(sub(a: 30, b: 50))

ans = ans + (ans * 0.18)

print(ans)
```

Jdoodle.com swift

1…//Dictionary

Customize of create your own index

Int-String
[Key : Value]
[A : Apple]
[B : Ball]
[C : Cat]

Answer:

Import UIKit

Store the value of different city.

Answer:

```
Var student:[Int:string]=[1:”neha”,2:”raj”,33:”jay”]
print(student[33])


//update the key value
student.updateValue(“priya”,forKey: 2)

//delete & Remove the key value
student.removeValue(forKey: 1)
print(student[1]!)


//New element
student.updateValue(“prisha”,forKey: 4)
print(student[4]!)

//
Var fruit:[String:String] = [“A”:”apple”,”G”:”Grapes”,”M”:”Mango”]
```

```
print(fruit[“M”]!)


print(student[33])



//Set

2….//Tuple

Var stu1 = (name:”Dhaval”, age:35, school:”Xaviers”)
Var stu2 = (name:”Jay”, school:”St.Francis”)

print(stu1.name,stu1.school)
print(stu2.name,stu2.school)



//Enumeration

enum city
{
        case rajkot
        Case pune
        Case surat
        Case jamnagar
}
Var choice = city.jamanagar
//Var choice = city.surat


Switch choice
{
Case .Jamanagar : print(“Temp of jamnagar is 40C”)
Case .pune : print(“Temp of pune is 45C”)
Case .rajkot : print(“Temp of rajkot is 33C”)
Case .surat : print(“Temp of surat is 44C”)
}
```

Answer:

//1…Dictionary

```
var student:[Int:String]=[1:"Neha",2:"Raj",33:"Jay"]
print(student[33]!)
```

Output:

Jay

```
//update the key value
student.updateValue("Priya",forKey: 2)
print(student[2]!)
```

Output:

Jay
Priya

……

```
var student:[Int:String]=[1:"Neha",2:"Raj",33:"Jay"]
print(student[33]!)

//update the key value
student.updateValue("Priya",forKey: 2)
print(student[2]!)

//delete & Remove the key value
print(student[1]!)
student.removeValue(forKey: 1)

//New element
student.updateValue("prisha",forKey: 4)
print(student[4]!)

//
var fruit:[String:String] = ["A":"apple","G":"Grapes","M":"Mango"]
print(fruit["M"]!)
```

Output:

Jay
Priya
Neha
prisha
Mango
…….

//Enumeration

```
enum city
{
        case Rajkot
        case Pune
        case Surat
        case Jamnagar
}
var choice = city.Jamnagar
//Var choice = city.surat


switch choice
{
case .Jamnagar : print("Temp of Jamnagar is 40C")
case .Pune : print("Temp of Pune is 45C")
case .Rajkot : print("Temp of Rajkot is 33C")
case .Surat : print("Temp of Surat is 44C")
}
```

Output:
Temp of Jamnagar is 40C

//JSON - Part - I

```
//
//  ViewController.swift
//  News
//
//  Created by Dhaval on 01/04/22.
//

import UIKit

class ViewController: UIViewController {

    var imgList = [String]()
    var titleList = [String]()

    override func viewDidLoad() {
        super.viewDidLoad()
        loadnews()
    }

    func loadnews()
    {
        let myurl = URL(string:
"https://newsapi.org/v2/everything?q=tesla&from=2022-03-01&sortBy=publishedAt&apiKey=e25
fb41c8d7e46d7a94ab8b3e837642c")

        let request = URLRequest(url: myurl!)

        //task
        let task = try! URLSession.shared.dataTask(with: request)
        { [self]
            (data,URLResponse,Error) in

            let jsonData = try! JSONSerialization.jsonObject(with: data!, options:
.mutableContainers) as! [String:Any]
            let article = jsonData["articles"] as! NSArray
            let title =  article.value(forKey: "title")

            self.titleList = title as! [String]
```

```
            let imgUrl = article.value(forKey: "urlToImage")
            self.imgList = imgUrl as! [String]
            print(data,title,imgUrl)
        }

        task.resume()
    }



}


//TableView

//
//  ViewController.swift
//  Car Table List
//
//  Created by Dhaval on 01/04/22.
//

import UIKit

class ViewController: UIViewController,UITableViewDelegate,UITableViewDataSource {

    var listImage =
["https://media.zigcdn.com/media/model/2021/Nov/amg-a45-5_360x240.jpg","https://media.zigc
dn.com/media/model/2021/Sep/amg-glc-43_360x240.jpg","https://media.zigcdn.com/media/mod
el/2021/Sep/amg-e-63_360x240.jpg","https://media.zigcdn.com/media/model/2021/Aug/amg-gle
-63_360x240.jpg"]
    var listTitle = ["Mercedes-Benz AMG A45 S","Mercedes-Benz AMG GLC 43","Mercedes-Benz
AMG E 63","Mercedes-Benz AMG GLE 63 S"]
    var listPrice = ["Rs. 79.50 Lakh","Rs. 85.40 Lakh","Rs. 1.73 Crore","Rs. 2.10 Crore"]

   // var imgArray = ["1.jpg","2.jpg","3.jpg","4.jpg"]

    // No of items/rows
    func tableView(_ tableView: UITableView, numberOfRowsInSection section: Int) -> Int {
        return listTitle.count
    }

    // value of each item
```

```
    func tableView(_ tableView: UITableView, cellForRowAt indexPath: IndexPath) ->
UITableViewCell {

        let cell = tableView.dequeueReusableCell(withIdentifier: "myCell") as! myTableViewCell
        cell.CarName.text = listTitle[indexPath.row]
        cell.CarPrice.text = listPrice[indexPath.row]
        let iurl = URL(string: listImage[indexPath.row])
        let request = try! Data(contentsOf: iurl!)
        cell.myImage.image = UIImage(data: request)

        //cell.myImage.image = UIImage(named: imgArray[indexPath.row])
        return cell
    }


    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view.
    }


}




//UIImageView and Alert Controller

//
//  ViewController.swift
//  ImageAlert
//
//  Created by Dhaval on 14/03/22.
//

import UIKit

class ViewController: UIViewController {

    //Create outlets here

    @IBOutlet weak var myImage: UIImageView!

    override func viewDidLoad() {
```

```
        super.viewDidLoad()
        //to show static image from project dir
        myImage.image = UIImage(named: "hack.jpg")
    }

    //Create Actions here
    @IBAction func submit(_ sender: Any) {
        //click event for submit

        let alert = UIAlertController(title: "Warning", message: "Do you want to load image from
URL?", preferredStyle: .alert)
        alert.addAction(UIAlertAction(title: "Yes", style: .default, handler: {
            ACTION in
            self.change_image()
        }))
        alert.addAction(UIAlertAction(title: "No", style: .destructive, handler: nil))
        self.present(alert,animated: true,completion: nil)

    }

    func change_image()
    {
        //OPEN Image from URL
        let imgURL = URL(string:
"https://www.freepnglogos.com/uploads/apple-logo-png/apple-logo-png-dallas-shootings-don-ad
d-are-speech-zones-used-4.png")
        let imgData = try! Data(contentsOf: imgURL!)
        myImage.image = UIImage(data: imgData)
    }
}
```

Session 1 : Fundamentals of Swift
Date : 23/02/2022
LAB : 2MCA4

```
import UIKit
/*
print("Hello World")

//var a:Int = 20
//var name:String = "Dhaval"
```

```
var a = 20
var b = 30
var c = a + b
var name = "Dhaval"
print(a,b,c,name,separator: "--",terminator: "\nThank You")
*/
//Function with return type

func display()
{
    print("Hello RKU")
}

display()

func add(a:Int,b:Int)
{
    var c = a + b
    print(c)
}

add(a: 20, b: 50)

//Function with return type

func sub(a:Int,b:Int) -> Int
{
    var c = b - a
    return c
}

var ans = Double(sub(a: 30, b: 50))

ans = ans + (ans * 0.18)

print(ans)


-----------------------------------
```