**课 程 设 计 报 告**

**课程设计名称：**

**课程设计题目**：

院（系）：计算机与信息工程学院

专 业：软件工程

班 级：2015网络编程

学 号：20151104689

姓 名： 刘臻

Github网址：https://github.com/ciec20151104689

指导教师： 朝力萌

完成日期：2017/7/7

**目 录**

[第1章 概要设计 2](file:///C:\Users\wwwli\Downloads\软件工程与设计20151104689刘臻.doc#_Toc406624046)

[1.1题目的内容与要求 2](file:///C:\Users\wwwli\Downloads\软件工程与设计20151104689刘臻.doc#_Toc406624047)

[1.2总体结构 2](file:///C:\Users\wwwli\Downloads\软件工程与设计20151104689刘臻.doc#_Toc406624048)

[第2章 详细设计 2](file:///C:\Users\wwwli\Downloads\软件工程与设计20151104689刘臻.doc#_Toc406624049)

[2.1主模块 2](file:///C:\Users\wwwli\Downloads\软件工程与设计20151104689刘臻.doc#_Toc406624050)

[第3章 调试分析 3](file:///C:\Users\wwwli\Downloads\软件工程与设计20151104689刘臻.doc#_Toc406624051)

[第4章 使用说明与执行结果 4](file:///C:\Users\wwwli\Downloads\软件工程与设计20151104689刘臻.doc#_Toc406624052)

# 第1章 概要设计

## 1.1题目的内容与要求

用于ios10.3的乒乓球计分软件

## 1.2总体结构

建立新的xcode文件，设计封面外观，连接对应的函数，实现功能。

# 第2章 详细设计

## 2.1主模块

**2.1.1 swift代码部分**

**import UIKit**

**var imageaall:UIImage!**

**var imageball:UIImage!**

**class ViewController: UIViewController,**

**UIImagePickerControllerDelegate,**

**UINavigationControllerDelegate {**

**@IBOutlet weak var score\_a: UITextField!**

**@IBOutlet weak var score\_b: UITextField!**

**@IBOutlet weak var total\_a: UITextField!**

**@IBOutlet weak var total\_b: UITextField!**

**@IBOutlet weak var imagea: UIImageView!**

**@IBOutlet weak var imageb: UIImageView!**

**@IBOutlet weak var image\_a: UIImageView!**

**@IBOutlet weak var image\_b: UIImageView!**

**var count\_a = 1**

**var count\_b = 1**

**var point\_a = 0**

**var point\_b = 0**

**var undonum\_a = 0**

**var im1 = 0**

**var im2 = 0**

**var n = 0**

**var temp = Int()**

**var temp\_1 = Int()**

**@IBOutlet weak var result\_a: UITextField!**

**@IBOutlet weak var result\_b: UITextField!**

**func imagePickerController(\_ picker: UIImagePickerController,**

**didFinishPickingMediaWithInfo info: [String : Any])**

**{**

**//查看info对象**

**print(info)**

**//显示的图片**

**let image:UIImage!**

**image = info[UIImagePickerControllerOriginalImage] as! UIImage**

**if(im1==1){**

**imagea.image = image**

**imageaall = imagea.image**

**}**

**if(im2==1){**

**imageb.image = image**

**imageball = imageb.image**

**}**

**//图片控制器退出**

**picker.dismiss(animated: true, completion: {**

**() -> Void in**

**})**

**}**

**@IBAction func start(\_ sender: UIButton) {**

**image\_a.image = imageaall**

**image\_b.image = imageball**

**}**

**@IBAction func add\_a(\_ sender: Any) {**

**result\_a.text=""**

**result\_b.text=""**

**count\_a=Int(score\_a.text!)!**

**temp=count\_a+1**

**score\_a.text="\(temp)"**

**if count\_a+1>=10 || count\_b+1>=10**

**{**

**if count\_a+1==11 && count\_b+1<=9{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Awin"**

**result\_b.text="Blost"**

**point\_a+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="\(point\_a)"**

**}**

**else if count\_b+1==11 && count\_a+1<=9{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Alost"**

**result\_b.text="Bwin"**

**point\_b+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_b.text="\(point\_b)"**

**}**

**}**

**if count\_a+1>=10 && count\_b+1>=10**

**{**

**if count\_a - count\_b > 1{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Awin"**

**result\_b.text="Blost"**

**point\_a+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="\(point\_a)"**

**}**

**else if count\_b - count\_a > 1{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Alost"**

**result\_b.text="Bwin"**

**point\_b+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_b.text="\(point\_b)"**

**}**

**}**

**}**

**@IBAction func add\_b(\_ sender: Any) {**

**result\_a.text=""**

**result\_b.text=""**

**count\_b=Int(score\_b.text!)!**

**temp\_1=count\_b+1**

**score\_b.text="\(temp\_1)"**

**if count\_a+1>=10 || count\_b+1>=10**

**{**

**if count\_a+1==11 && count\_b+1<=9{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Awin"**

**result\_b.text="Blost"**

**point\_a+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="\(point\_a)"**

**}**

**else if count\_b+1==11 && count\_a+1<=9{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Alost"**

**result\_b.text="Bwin"**

**point\_b+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_b.text="\(point\_b)"**

**}**

**}**

**if count\_a+1>=10 && count\_b+1>=10**

**{**

**if count\_a - count\_b > 1{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Awin"**

**result\_b.text="Blost"**

**point\_a+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="\(point\_a)"**

**}**

**else if count\_b - count\_a > 1{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Alost"**

**result\_b.text="Bwin"**

**point\_b+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_b.text="\(point\_b)"**

**}**

**}**

**undonum\_a = count\_a + 1**

**}**

**@IBAction func undo\_a(\_ sender: Any) {**

**temp = temp - 1**

**count\_a = count\_a - 1**

**if temp < 0{**

**score\_a.text="0"**

**}**

**else {**

**score\_a.text="\(temp)"**

**}**

**if count\_a+1>=10 || count\_b+1>=10**

**{**

**if count\_a+1==11 && count\_b+1<=9{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Awin"**

**result\_b.text="Blost"**

**point\_a+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="\(point\_a)"**

**}**

**else if count\_b+1==11 && count\_a+1<=9{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Alost"**

**result\_b.text="Bwin"**

**point\_b+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_b.text="\(point\_b)"**

**}**

**}**

**if count\_a+1>=10 && count\_b+1>=10**

**{**

**if count\_a - count\_b > 1{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Awin"**

**result\_b.text="Blost"**

**point\_a+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="\(point\_a)"**

**}**

**else if count\_b - count\_a > 1{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Alost"**

**result\_b.text="Bwin"**

**point\_b+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_b.text="\(point\_b)"**

**}**

**}**

**}**

**@IBAction func undo\_b(\_ sender: Any) {**

**temp\_1 = temp\_1 - 1**

**count\_b = count\_b - 1**

**if temp\_1 < 0{**

**score\_b.text="0"**

**}**

**else {**

**score\_b.text="\(temp\_1)"**

**}**

**if count\_a+1>=10 || count\_b+1>=10**

**{**

**if count\_a+1==11 && count\_b+1<=9{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Awin"**

**result\_b.text="Blost"**

**point\_a+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="\(point\_a)"**

**}**

**else if count\_b+1==11 && count\_a+1<=9{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Alost"**

**result\_b.text="Bwin"**

**point\_b+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_b.text="\(point\_b)"**

**}**

**}**

**if count\_a+1>=10 && count\_b+1>=10**

**{**

**if count\_a - count\_b > 1{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Awin"**

**result\_b.text="Blost"**

**point\_a+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="\(point\_a)"**

**}**

**else if count\_b - count\_a > 1{**

**count\_a=0**

**count\_b=0**

**result\_a.text="Alost"**

**result\_b.text="Bwin"**

**point\_b+=1**

**temp=0**

**temp\_1=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_b.text="\(point\_b)"**

**}**

**}**

**}**

**@IBAction func clearall(\_ sender: Any) {**

**count\_b = 0**

**count\_a = 0**

**point\_a=0**

**point\_b=0**

**temp\_1=0**

**temp=0**

**score\_a.text="0"**

**score\_b.text="0"**

**total\_a.text="0"**

**total\_b.text="0"**

**}**

**@IBAction func uploada(\_ sender: UIButton) {**

**im1=1**

**im2=0**

**if UIImagePickerController.isSourceTypeAvailable(.photoLibrary){**

**//初始化图片控制器**

**let picker = UIImagePickerController()**

**//设置代理**

**picker.delegate = self**

**//指定图片控制器类型v**

**picker.sourceType = UIImagePickerControllerSourceType.photoLibrary**

**//弹出控制器，显示界面**

**self.present(picker, animated: true, completion: {**

**() -> Void in**

**})**

**}**

**else{**

**print("读取相册错误")**

**}**

**//}**

**}**

**@IBAction func uploadb(\_ sender: UIButton) {**

**im1=0**

**im2=1**

**if UIImagePickerController.isSourceTypeAvailable(.photoLibrary){**

**//初始化图片控制器**

**let picker = UIImagePickerController()**

**//设置代理**

**picker.delegate = self**

**//指定图片控制器类型v**

**picker.sourceType = UIImagePickerControllerSourceType.photoLibrary**

**//弹出控制器，显示界面**

**self.present(picker, animated: true, completion: {**

**() -> Void in**

**})**

**}**

**else{**

**print("读取相册错误")**

**}**

**}**

**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.**

**}**

**}**

**2.1.1 storyboard 代码**

**<?xml version="1.0" encoding="UTF-8"?>**

**<document type="com.apple.InterfaceBuilder3.CocoaTouch.Storyboard.XIB" version="3.0" toolsVersion="12121" systemVersion="16F73" targetRuntime="iOS.CocoaTouch" propertyAccessControl="none" useAutolayout="YES" useTraitCollections="YES" colorMatched="YES" initialViewController="BYZ-38-t0r">**

**<device id="retina4\_0" orientation="portrait">**

**<adaptation id="fullscreen"/>**

**</device>**

**<dependencies>**

**<deployment identifier="iOS"/>**

**<plugIn identifier="com.apple.InterfaceBuilder.IBCocoaTouchPlugin" version="12089"/>**

**<capability name="documents saved in the Xcode 8 format" minToolsVersion="8.0"/>**

**</dependencies>**

**<scenes>**

**<!--View Controller-->**

**<scene sceneID="tne-QT-ifu">**

**<objects>**

**<viewController id="BYZ-38-t0r" customClass="ViewController" customModule="tabel\_tennis" customModuleProvider="target" sceneMemberID="viewController">**

**<layoutGuides>**

**<viewControllerLayoutGuide type="top" id="y3c-jy-aDJ"/>**

**<viewControllerLayoutGuide type="bottom" id="wfy-db-euE"/>**

**</layoutGuides>**

**<view key="view" contentMode="scaleToFill" id="8bC-Xf-vdC">**

**<rect key="frame" x="0.0" y="0.0" width="320" height="568"/>**

**<autoresizingMask key="autoresizingMask" widthSizable="YES" heightSizable="YES"/>**

**<subviews>**

**<imageView userInteractionEnabled="NO" contentMode="scaleToFill" horizontalHuggingPriority="251" verticalHuggingPriority="251" fixedFrame="YES" image="球桌.jpg" translatesAutoresizingMaskIntoConstraints="NO" id="jIH-Pq-b3D">**

**<rect key="frame" x="68" y="143" width="184" height="254"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**</imageView>**

**<textField opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="left" contentVerticalAlignment="center" text="0" borderStyle="roundedRect" textAlignment="center" minimumFontSize="17" translatesAutoresizingMaskIntoConstraints="NO" id="41e-q3-yUx">**

**<rect key="frame" x="147" y="367" width="97" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<nil key="textColor"/>**

**<fontDescription key="fontDescription" type="system" pointSize="14"/>**

**<textInputTraits key="textInputTraits"/>**

**</textField>**

**<textField opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="left" contentVerticalAlignment="center" text="0" borderStyle="roundedRect" textAlignment="center" minimumFontSize="17" translatesAutoresizingMaskIntoConstraints="NO" id="JeC-qF-aEe">**

**<rect key="frame" x="106" y="143" width="97" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<nil key="textColor"/>**

**<fontDescription key="fontDescription" type="system" pointSize="14"/>**

**<textInputTraits key="textInputTraits"/>**

**</textField>**

**<textField opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="left" contentVerticalAlignment="center" text="0" borderStyle="roundedRect" textAlignment="natural" minimumFontSize="17" translatesAutoresizingMaskIntoConstraints="NO" id="JtC-lo-3T6">**

**<rect key="frame" x="78" y="143" width="30" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<nil key="textColor"/>**

**<fontDescription key="fontDescription" type="system" pointSize="14"/>**

**<textInputTraits key="textInputTraits"/>**

**</textField>**

**<textField opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="left" contentVerticalAlignment="center" text="0" borderStyle="roundedRect" textAlignment="natural" minimumFontSize="17" translatesAutoresizingMaskIntoConstraints="NO" id="d3K-SM-s9s">**

**<rect key="frame" x="118" y="367" width="30" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<nil key="textColor"/>**

**<fontDescription key="fontDescription" type="system" pointSize="14"/>**

**<textInputTraits key="textInputTraits"/>**

**</textField>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="d5g-mR-Bz1">**

**<rect key="frame" x="139" y="97" width="31" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="清零"/>**

**<connections>**

**<action selector="clearall:" destination="BYZ-38-t0r" eventType="touchUpInside" id="vi6-PB-CgD"/>**

**</connections>**

**</button>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="Jdm-Oi-w1w">**

**<rect key="frame" x="61" y="416" width="87" height="49"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="A得分"/>**

**<connections>**

**<action selector="add\_a:" destination="BYZ-38-t0r" eventType="touchUpInside" id="vP8-vR-Kii"/>**

**</connections>**

**</button>**

**<textField opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="left" contentVerticalAlignment="center" borderStyle="roundedRect" textAlignment="natural" minimumFontSize="17" translatesAutoresizingMaskIntoConstraints="NO" id="5Aa-KF-zaq">**

**<rect key="frame" x="99" y="471" width="97" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<nil key="textColor"/>**

**<fontDescription key="fontDescription" type="system" pointSize="14"/>**

**<textInputTraits key="textInputTraits"/>**

**</textField>**

**<textField opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="left" contentVerticalAlignment="center" borderStyle="roundedRect" textAlignment="natural" minimumFontSize="17" translatesAutoresizingMaskIntoConstraints="NO" id="CqC-W0-blD">**

**<rect key="frame" x="99" y="509" width="97" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<nil key="textColor"/>**

**<fontDescription key="fontDescription" type="system" pointSize="14"/>**

**<textInputTraits key="textInputTraits"/>**

**</textField>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="Bmo-mf-BVf">**

**<rect key="frame" x="156" y="417" width="87" height="46"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="B得分"/>**

**<connections>**

**<action selector="add\_b:" destination="BYZ-38-t0r" eventType="touchUpInside" id="FZZ-zd-gsh"/>**

**</connections>**

**</button>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="8sv-Uk-94V">**

**<rect key="frame" x="11" y="425" width="47" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="UndoA">**

**<color key="titleColor" red="1" green="0.021322741374148357" blue="0.083980777749827928" alpha="1" colorSpace="calibratedRGB"/>**

**</state>**

**<connections>**

**<action selector="undo\_a:" destination="BYZ-38-t0r" eventType="touchUpInside" id="LNX-Ja-s9E"/>**

**</connections>**

**</button>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="d51-PG-ha2">**

**<rect key="frame" x="251" y="426" width="47" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="UndoB">**

**<color key="titleColor" red="1" green="0.021322741369999999" blue="0.083980777749999999" alpha="1" colorSpace="calibratedRGB"/>**

**</state>**

**<connections>**

**<action selector="undo\_b:" destination="BYZ-38-t0r" eventType="touchUpInside" id="wpH-ZQ-0Ie"/>**

**</connections>**

**</button>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="lUC-Mc-wbg">**

**<rect key="frame" x="16" y="518" width="62" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="上传照片"/>**

**<connections>**

**<segue destination="Z5U-gI-MEj" kind="show" id="54W-6O-pTn"/>**

**</connections>**

**</button>**

**<imageView userInteractionEnabled="NO" contentMode="scaleToFill" horizontalHuggingPriority="251" verticalHuggingPriority="251" fixedFrame="YES" translatesAutoresizingMaskIntoConstraints="NO" id="hSL-SJ-jmo">**

**<rect key="frame" x="156" y="271" width="88" height="95"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**</imageView>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="24g-Rj-nih">**

**<rect key="frame" x="265" y="255" width="32" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="start"/>**

**<connections>**

**<action selector="start:" destination="BYZ-38-t0r" eventType="touchUpInside" id="vfR-RJ-PRY"/>**

**</connections>**

**</button>**

**<imageView userInteractionEnabled="NO" contentMode="scaleToFill" horizontalHuggingPriority="251" verticalHuggingPriority="251" fixedFrame="YES" translatesAutoresizingMaskIntoConstraints="NO" id="lUG-49-rjJ">**

**<rect key="frame" x="68" y="175" width="88" height="94"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**</imageView>**

**</subviews>**

**<color key="backgroundColor" red="1" green="1" blue="1" alpha="1" colorSpace="custom" customColorSpace="sRGB"/>**

**</view>**

**<connections>**

**<outlet property="image\_a" destination="lUG-49-rjJ" id="Zi0-N6-2xp"/>**

**<outlet property="image\_b" destination="hSL-SJ-jmo" id="Sdu-9D-5K5"/>**

**<outlet property="result\_a" destination="5Aa-KF-zaq" id="j8N-R9-x4T"/>**

**<outlet property="result\_b" destination="CqC-W0-blD" id="Mm6-Dh-VCr"/>**

**<outlet property="score\_a" destination="JeC-qF-aEe" id="Fum-Dq-gxP"/>**

**<outlet property="score\_b" destination="41e-q3-yUx" id="W5V-rS-8Mp"/>**

**<outlet property="total\_a" destination="JtC-lo-3T6" id="2nx-04-d7I"/>**

**<outlet property="total\_b" destination="d3K-SM-s9s" id="QYg-HK-Tot"/>**

**</connections>**

**</viewController>**

**<placeholder placeholderIdentifier="IBFirstResponder" id="dkx-z0-nzr" sceneMemberID="firstResponder"/>**

**</objects>**

**<point key="canvasLocation" x="56.25" y="35.91549295774648"/>**

**</scene>**

**<!--View Controller-->**

**<scene sceneID="Oov-0s-H4q">**

**<objects>**

**<viewController id="Z5U-gI-MEj" customClass="ViewController" customModule="tabel\_tennis" customModuleProvider="target" sceneMemberID="viewController">**

**<layoutGuides>**

**<viewControllerLayoutGuide type="top" id="Cik-mT-yLM"/>**

**<viewControllerLayoutGuide type="bottom" id="Fyn-7i-AHk"/>**

**</layoutGuides>**

**<view key="view" contentMode="scaleToFill" id="GL1-Gg-Nh1">**

**<rect key="frame" x="0.0" y="0.0" width="320" height="568"/>**

**<autoresizingMask key="autoresizingMask" widthSizable="YES" heightSizable="YES"/>**

**<subviews>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="57P-AY-rWx">**

**<rect key="frame" x="16" y="518" width="62" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="返回记分"/>**

**<connections>**

**<segue destination="BYZ-38-t0r" kind="show" id="vhH-mn-95s"/>**

**</connections>**

**</button>**

**<imageView userInteractionEnabled="NO" contentMode="scaleToFill" horizontalHuggingPriority="251" verticalHuggingPriority="251" fixedFrame="YES" translatesAutoresizingMaskIntoConstraints="NO" id="nNK-Hf-g8Z">**

**<rect key="frame" x="180" y="57" width="100" height="100"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**</imageView>**

**<imageView userInteractionEnabled="NO" contentMode="scaleToFill" horizontalHuggingPriority="251" verticalHuggingPriority="251" fixedFrame="YES" translatesAutoresizingMaskIntoConstraints="NO" id="aAt-kp-xHV">**

**<rect key="frame" x="23" y="57" width="100" height="100"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**</imageView>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="oid-O6-T9G">**

**<rect key="frame" x="50" y="196" width="46" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="Button"/>**

**<connections>**

**<action selector="uploada:" destination="Z5U-gI-MEj" eventType="touchUpInside" id="5s8-C9-hHv"/>**

**</connections>**

**</button>**

**<button opaque="NO" contentMode="scaleToFill" fixedFrame="YES" contentHorizontalAlignment="center" contentVerticalAlignment="center" buttonType="roundedRect" lineBreakMode="middleTruncation" translatesAutoresizingMaskIntoConstraints="NO" id="EGa-ou-ekq">**

**<rect key="frame" x="207" y="196" width="46" height="30"/>**

**<autoresizingMask key="autoresizingMask" flexibleMaxX="YES" flexibleMaxY="YES"/>**

**<state key="normal" title="Button"/>**

**<connections>**

**<action selector="uploadb:" destination="Z5U-gI-MEj" eventType="touchUpInside" id="lgX-Th-tDf"/>**

**</connections>**

**</button>**

**</subviews>**

**<color key="backgroundColor" white="1" alpha="1" colorSpace="calibratedWhite"/>**

**</view>**

**<navigationItem key="navigationItem" id="pDv-vQ-Ya2"/>**

**<connections>**

**<outlet property="imagea" destination="aAt-kp-xHV" id="J02-bm-J58"/>**

**<outlet property="imageb" destination="nNK-Hf-g8Z" id="HIO-tO-Pq5"/>**

**</connections>**

**</viewController>**

**<placeholder placeholderIdentifier="IBFirstResponder" id="caL-QT-OJk" userLabel="First Responder" sceneMemberID="firstResponder"/>**

**</objects>**

**<point key="canvasLocation" x="825" y="35.91549295774648"/>**

**</scene>**

**</scenes>**

**<resources>**

**<image name="球桌.jpg" width="683" height="920"/>**

**</resources>**

**</document>**

**二．课程设计小结**

**在操作中学会了使用.storyboard 和 .swift文件之间的连接，**

**参考文献：**

**[1] 严蔚敏,吴伟民.数据结构（C语言版）.北京：清华大学出版社，2007**

**[2] 百度百科**

**[3] CSDN知识库 csdn.net/?ref=toolbar**

**[4] C语言中文网 http://c.biancheng.net/cpp/**