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//
// ViewController.swift
// Calculator
//
// Created by Chelsea Irizarry on 10/18/16.
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//

import UIKit
import Foundation

class ViewController: UIViewController {

    @IBOutlet var output: UITextField!

    var out: Float = 0
    var number: Float = 0
    var result: Float = 0

    var operand: String = ""
    var arrayOperand: [String] = []

    var input: String = ""
    var arrayInput: [Float] = []

    var selected: Bool = false
    var rand: Bool = true

    //Get inputted numbers
    @IBAction func numberInput (sender: UIButton){
        input = input + (sender.titleLabel?.text)!
        output.text = ("\(input)")
        number = Float(input)!
        rand = true
        selected = true
    }

    //Operations
    @IBAction func operation (sender: UIButton) {
        //after equal set first element to results of previous
        calculation
        if (arrayInput.count == 0 && input == ""){
            number = result
            selected = true
        }

        //only enter if new number was inputed
        if (selected == true) {
            //Percent

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    if (sender.titleLabel?.text! == "%"){
        //if zero do nothing else negate
        if (number != 0){
            number = number / 100
            output.text = ("\(number)")
            rand = false
            selected = true
        }
    }
    //Negate
    else if (sender.titleLabel?.text! == "+/-"){
        //if zero do nothing else negate
        if (number != 0){
            number = -1 * number
            output.text = ("\(number)")
            rand = false
            selected = true
        }
    }
    //add to input and operand arrays
    else{
        operand = sender.titleLabel?.text! as String!
        arrayOperand.append(operand)
        arrayInput.append(number)

        number = 0
        input = ""
        selected = false
    }
}
//allow for change in operand
else {
    operand = sender.titleLabel?.text! as String!
    arrayOperand.removeLast()
    arrayOperand.append(operand)
}
}

//Calculate with Order of Operations
func calculate() -> Float {
    var x: Int = 0

    //do all multiplication and division
    if (arrayOperand.count > 0){
        for i in 0...arrayOperand.count-1 {
            if (arrayOperand[x] == "X") {
                arrayInput[x] = arrayInput[x] * arrayInput[x+1]
                arrayInput.remove(at: x+1)
                arrayOperand.remove(at: x)
            }
        }
    }
}

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        x = x-1
    }
    else if (arrayOperand[x] == "/") {
        arrayInput[x] = arrayInput[x] / arrayInput[x+1]
        arrayInput.remove(at: x+1)
        arrayOperand.remove(at: x)
        x = x-1
    }

    x += 1
}

x = 0
//do all addition and subtraction
if (arrayOperand.count > 0){
    for i in 0...arrayOperand.count-1 {
        if (arrayOperand[x] == "+") {
            arrayInput[x] = arrayInput[x] + arrayInput[x+1]
            arrayInput.remove(at: x+1)
            arrayOperand.remove(at: x)
            x = x-1
        }
        else if (arrayOperand[x] == "-") {
            arrayInput[x] = arrayInput[x] - arrayInput[x+1]
            arrayInput.remove(at: x+1)
            arrayOperand.remove(at: x)
            x = x-1
        }
    }

    x += 1
}

return arrayInput[0]
}

//Display output
@IBAction func equals (sender: UIButton) {
    //Get last number inputted
    if(input != ""){
        arrayInput.append(number)
        number = 0
        input = ""
    }

    //check if only one number has been inputted
    if (arrayInput.count == 1) {
        print(arrayInput[0])
    }
}

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        //if multiple numbers inputted then calculate
        else{
            result = calculate()
            output.text = ("\(result)")

            arrayInput.removeAll()
            arrayOperand.removeAll()
        }
    }

    //Clear
    @IBAction func clear (sender: AnyObject){
        input = ""
        operand = ""
        number = 0
        result = 0
        arrayOperand.removeAll()
        arrayInput.removeAll()
        output.text = ("\(number)")
    }

    //output number when application is opened
    override func viewDidLoad() {
        super.viewDidLoad()
        output.text = ("\(number)")
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
    }
}

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