

IS 543 Fall 2023

Mobile Platform Development

Project 2 Q&A

Local Notifications

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Today's Devotional

- Campus Christmas Devotional
Come to the Marriott Center at 11:05!

Today

- Project 2 questions
What are your questions?
- Local notifications

Project 2 Questions

- Let's first address your Project 2 questions

Local Notifications

- Use `UserNotifications` framework to schedule a local notification

A “local” notification stands in contrast to a “remote” notification that has to be pushed from a server somewhere

- Set up `UNUserNotificationCenter` singleton

Ask for permission from the user

The things you can ask for are to send alerts, play sounds, and use icon badges

If permission is granted, then schedule a notification

If permission is denied, remember to ask for permission again in the future when the user tries to use the feature that requires their permission

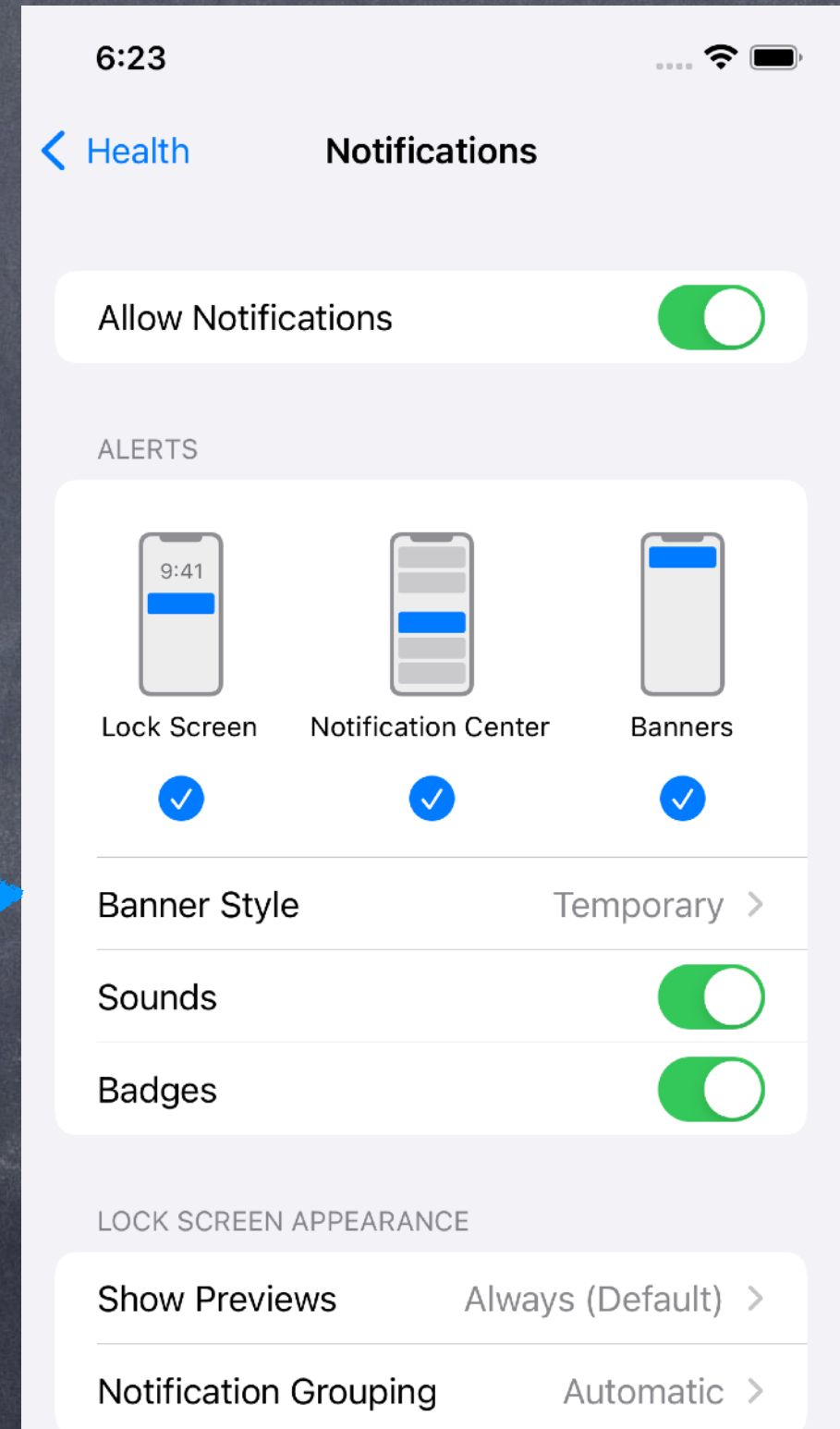
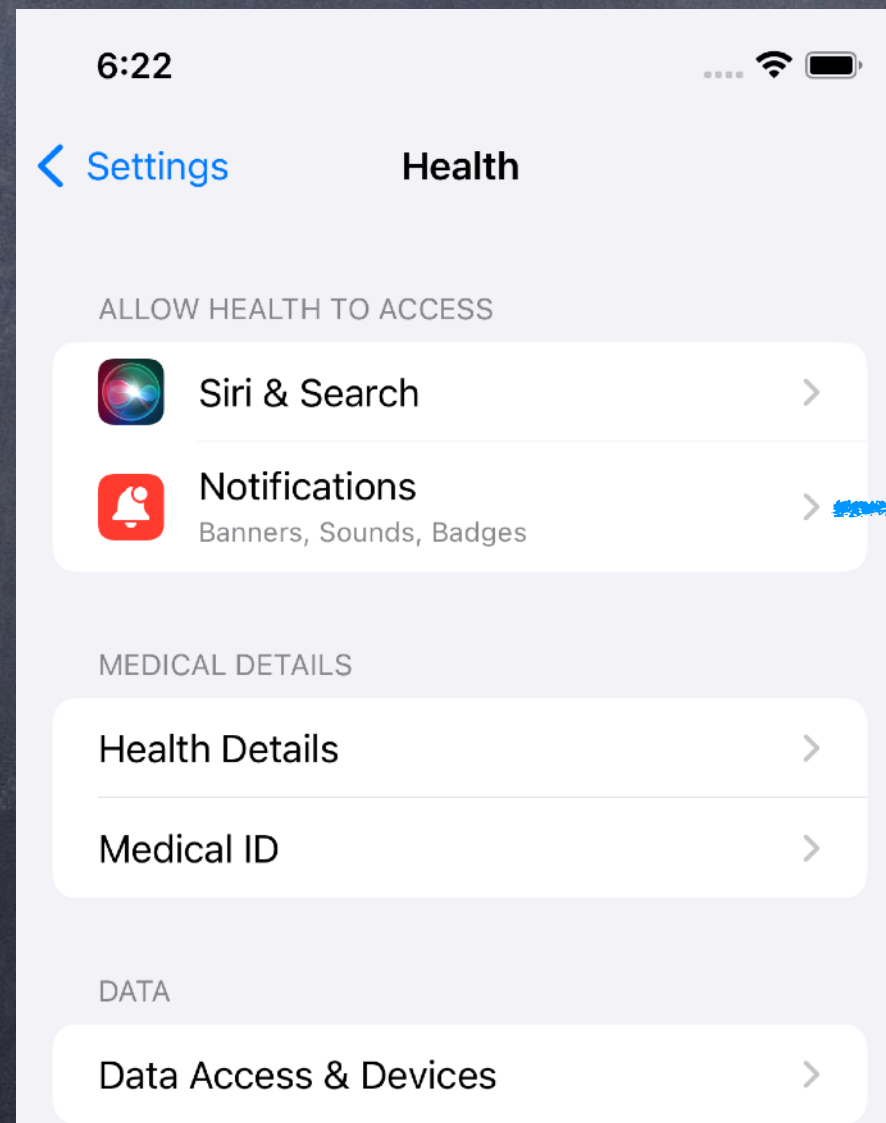
Remember: don't ask permission too early, only when they're going to use the feature that requires their permission

You can ask for provisional permission and then send trial notifications if you wish

Also remember that the user can revoke permission at any time in the system Settings app

Local Notifications

- Settings for an app that uses notifications
Apple gives the user fine-grained control over notification permissions (which is great for users)



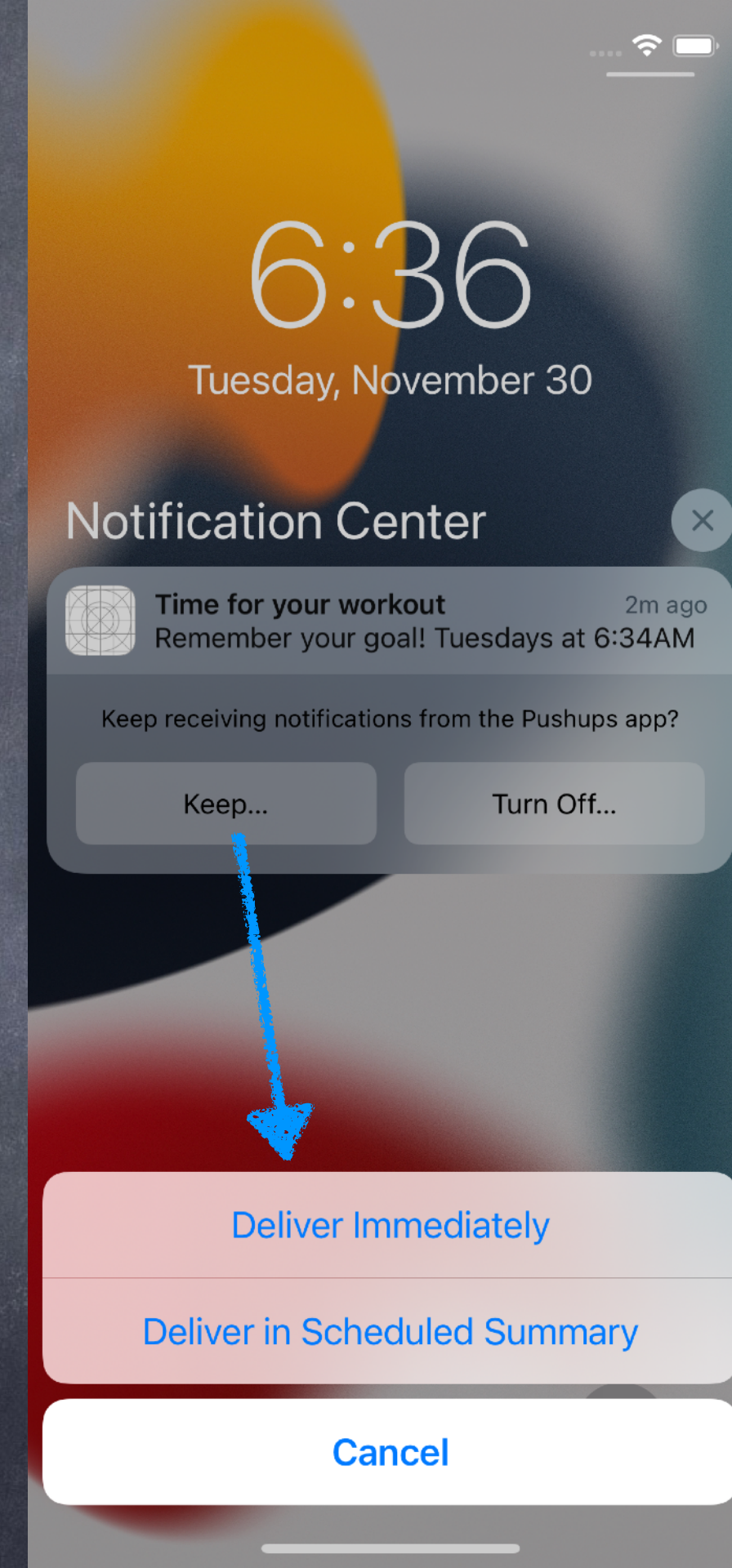
Local Notifications

- You can request provisional authorization

iOS grants provisional authorization automatically

Lets you send a trial notification that shows the user the value of granting permission, in context

Trial notifications are delivered “quietly” without interrupting the user



Permission to Use Notifications

- How to request permission:

```
@State private var notificationsEnabled = false
```

```
UNUserNotificationCenter.current()  
    .requestAuthorization(options: [.alert, .sound, .provisional])  
{ success, error in  
    if success {  
        notificationsEnabled = true  
    } else if let error = error {  
        print(error.localizedDescription)  
    }  
}
```

Now you can add request if permission granted (i.e. `notificationsEnabled` state var is true)

Scheduling a Notification

- Three aspects to a notification:

- Content of the notification

- A trigger that causes the notification to appear

- A request that has a **UUID** along with notification content and trigger

```
let content = UNMutableNotificationContent()
content.title = "Time for your workout"
content.subtitle = "Remember your goal! No pain, no gain."
content.sound = UNNotificationSound.default

let trigger = ... // Build the appropriate kind of trigger

let request = UNNotificationRequest(identifier: UUID().uuidString, content: content,
                                   trigger: trigger)

UNUserNotificationCenter.current().add(request)
```


Building a Notification Trigger

- Types of notification trigger

`UNTimeIntervalNotificationTrigger`

Based on a time interval (X seconds from now or Y minutes from now)

`UNCalendarNotificationTrigger`

Based on a date/time

`UNLocationNotificationTrigger`

Based on geofence

`UNPushNotificationTrigger`

Based on push notification sent by a server

- Triggers can either be one-time or repeating

Trigger Based on Day of Week

- Use `UNCalendarNotificationTrigger`

Repeat this for each weekday you want to trigger the alarm

(So if you have three workout days, arm three notification requests)

```
var date = DateComponents()
```

```
date.hour = 8
```

```
date.minute = 30
```

```
date.weekday = 2    // For Monday
```

```
let mondayTrigger = UNCalendarNotificationTrigger(dateMatching: date, repeats: true)
```


Coming Up

- Last day of classes on Thursday

We'll do a semester review and have time for more Q&A on Project 2

- Also note HW 10

Do the student evaluation for IS 543 before the last day of class (actually, I think you can complete this up through the end of our final exam preparation day, Friday, but please do this by Thursday 12/8 at midnight)

- Final exam Thursday, Dec. 21, 7-10am

Here in our classroom, 284 TNRB

This is the time I recommend that you take the exam because (1) I'm planning to make pretzels for you, (2) you can ask me questions during the exam, for instance if you get stuck on something, and (3) it's when we have dedicated space and time just for us.

Final Exam Options

- If you really can't come on Thursday, Dec. 21:

You may take the final Monday through Wednesday

You will do it remotely

I will likely not be available to answer questions

DM me on Slack to let me know when you'd like to take it and to receive the final exam early

I will send it via DM on Slack

You'll be on your honor to follow the exam rules