

Digital Solutions

Unit 1

Creating with Code

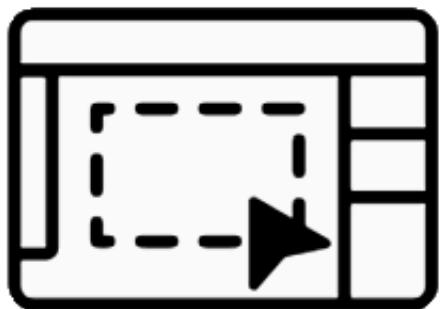
4. Generating user experiences and interfaces

- 4.1 Generating low-fidelity prototypes
- 4.2 Generating coded components

LEARNING GOALS

WALT	WILF	TIB
<ul style="list-style-type: none">▪ Generate a low-fidelity prototype of the user interface.▪ Convert pseudocode into swift code components	<ul style="list-style-type: none">▪ Whole class will create a keynote project that uses links to navigate through slides.▪ Students will convert simple pseudocode into correct swift code.	<ul style="list-style-type: none">▪ Technologies have been an integral part of society for as long as humans have had the desire to create solutions to improve their own and others' quality of life.▪ Technologies have an impact on people and societies by transforming, restoring and sustaining the world in which we live.

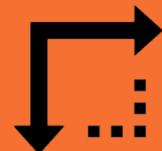
4.1 Generating low-fidelity prototypes



- Keynote
Using Links



- PowerPoint



- Screen Dimensions

WALT

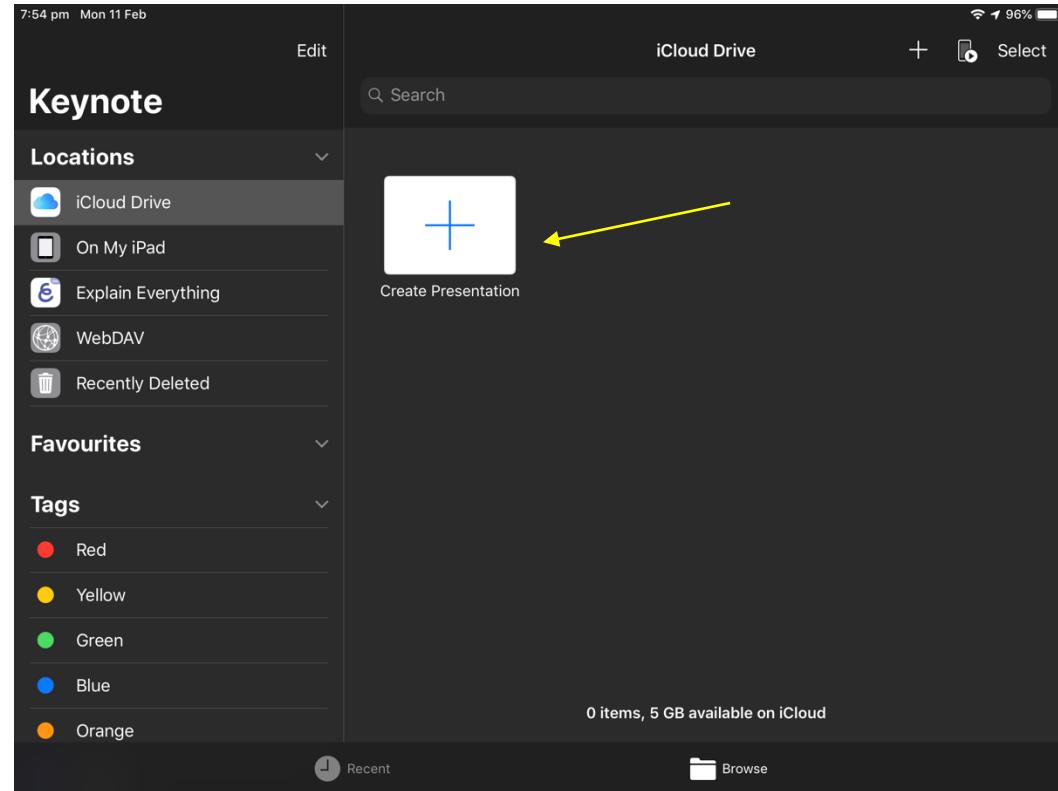
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Keynote – Using Links



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Presentations

App Prototype Example

Home

Creating a click through prototype

Cut Copy Delete Comment Link Animate

UI Sketches

Using Links

Select an object to use as a button

Home

UI Sketches

Using Links

Presentations

1

2

3

4

5

6

7

8

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WALT

- Generate a low-fidelity prototype of the user interface.
- Convert pseudocode into swift code components

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The image shows a Keynote presentation titled "App Prototype Example". The main slide is titled "Home" and features a large blue cartoon bear. On the left, there is a sidebar with thumbnails of 8 slides, numbered 1 to 8. Slide 1 shows a UI sketch with a blue character. Slides 2 through 7 show various UI sketches. Slide 8 shows a slide titled "Using Links" with two buttons: "UI Sketches" and "Using Links". A callout box from the "Using Links" button points to a "Link Settings" menu. The menu includes options like "Link to", "Link to Slide...", "Next Slide", "Previous Slide", "First Slide", "Last Slide", "Last Slide Viewed", "Exit Slideshow", and "Remove Link". A pink arrow points to the "Link to Slide..." option, which is checked. A pink text overlay says "Select link to slide". There are also two cartoon characters: one blue bear-like character on the right and one blue face with hands on the bottom right.

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Presentations

App Prototype Example

Home

UI Sketches

Using Links

Link Settings

Creating a click thro prototype

Link to

Link to Slide...

Next Slide

Previous Slide

First Slide

Last Slide

Last Slide Viewed

Exit Slideshow

Remove Link

Select link to slide

WALT

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Keynote – Using Links

Presentations

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App Prototype Example

Home

Select a slide to navigate to.

Creating a click thro prototype

UI Sketches

Using Links

Link Settings

Back

1

2

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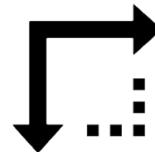
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WALT

- Generate a low-fidelity prototype of the user interface.
- Convert pseudocode into swift code components



Screen Dimensions

Unless your app is for iPad a low-fidelity prototype generated in keynote will not use the entire screen. Try to use the correct dimensions of the device the app is intended for. Use a simplistic black or white background.



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Activity 4.1 A – Café Loco App

Create a low fidelity prototype of the Café Loco app using Keynote or PowerPoint. Aim to include two or three key screens based on your annotated sketches.

A low fidelity prototype is usually not coded, the idea is to showcase your concept for the app and to simulate the expected user experience.

4.2 Generating coded components



- Converting pseudocode to Swift code

WALT

- Generate a low-fidelity prototype of the user interface.
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Converting Pseudocode to Swift

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Pseudocode -> Swift

Example 1

Pseudocode

```
IF grade >= 50 THEN  
    OUTPUT pass  
ELSE  
    OUTPUT fail  
END IF
```

Swift Code

```
if grade >= 50 {  
    print("pass")  
} else {  
    print("fail")  
}
```

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Pseudocode

```
WHILE userNum not equal 0  
    OUTPUT userNum  
    userNum = userNum - 1  
END WHILE
```

Swift Code

```
while userNum != 0 {  
    print(userNum)  
    userNum = userNum - 1  
}
```

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Pseudocode -> Swift

Example 3

Pseudocode

area = width x length

perimeter = 2 x (width + length)

REPEAT X 5

 OUTPUT area

 OUTPUT perimeter

END REPEAT

Swift Code

area = width * length

perimeter = 2 * (width + length)

for i in 1...5 {

 print(area)

 print(perimeter)

}

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Activity 4.2 A – Sample Swift Code

In some assignments you will be asked to provide a small sample of Swift code for an app concept and at other times you will provide a lot more. As a low-fidelity prototype is not generally coded (FIA1, IA1) you will need a tool to allow you to generate a few algorithms. The Playgrounds app on your iPad will allow you to do this.

- Choose one of the algorithms from the examples on the previous slides
- Generate the Swift code shown in playground
- You will need to declare variables and initialise them with a value to make sure the code runs
- Add a few annotations to your code that explain key parts