Apple Developer Academy ✦ POA

#Foundations2025

Swift

A new way to code

Felipe Elsner, Dev Mentor

Where to start a project?

Where to start a project?

Integrated Development Environment

Where to start a project?

Integrated Development Environment

also known as **IDE**

Xcode

How to create a Command Line project?

How to create a Command Line project?

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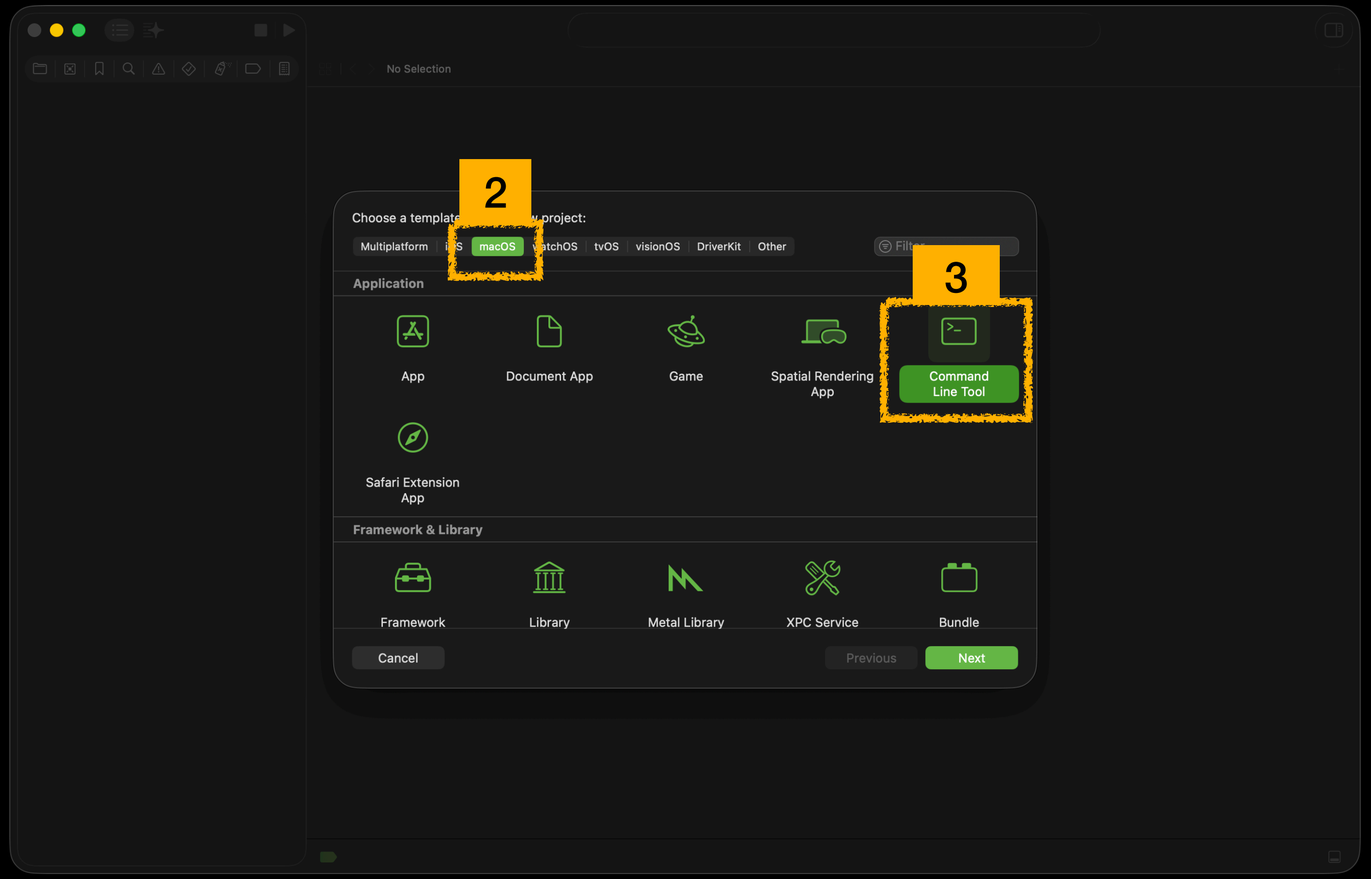

How to create a Command Line project?

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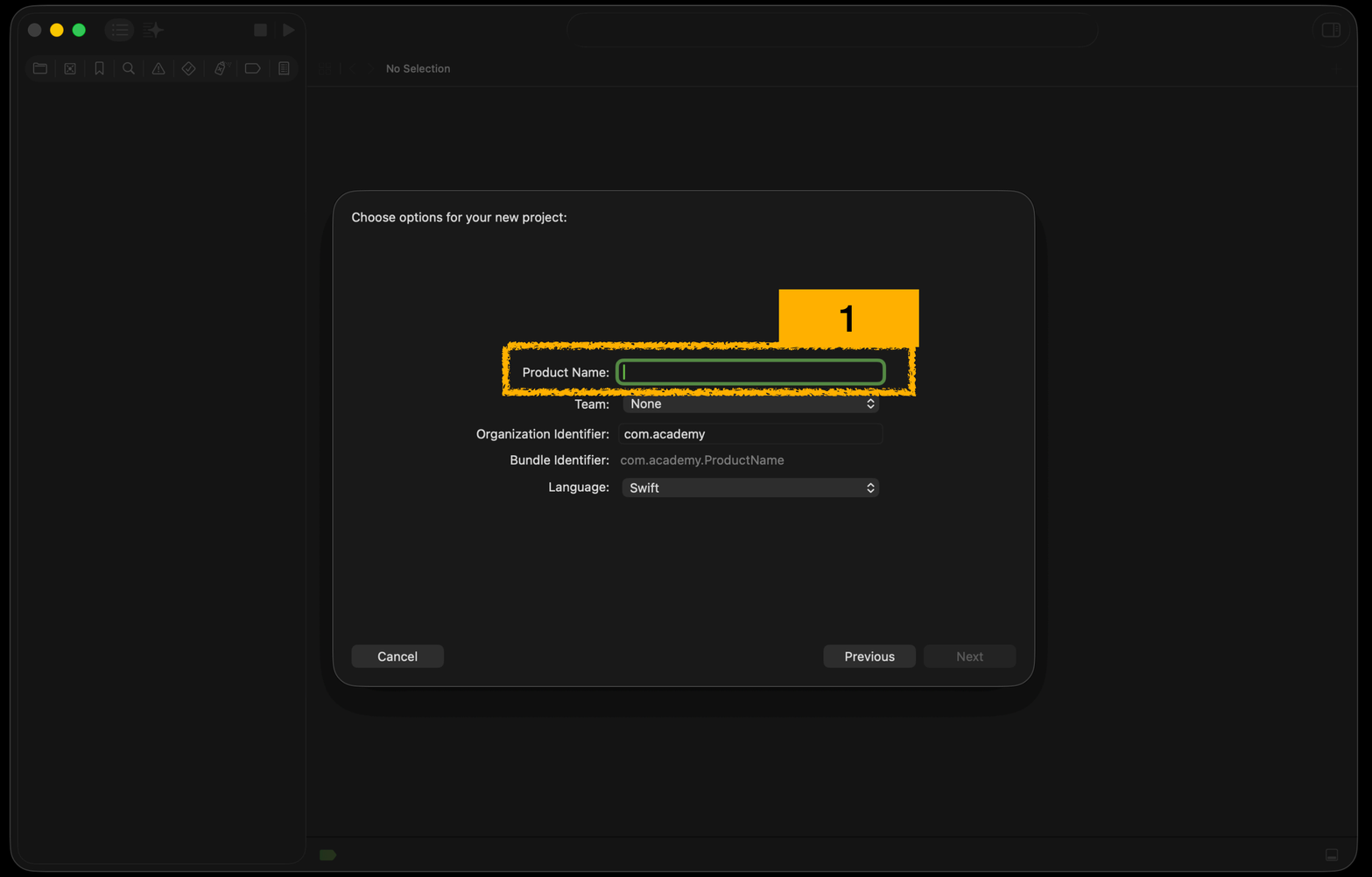

How to create a Command Line project?

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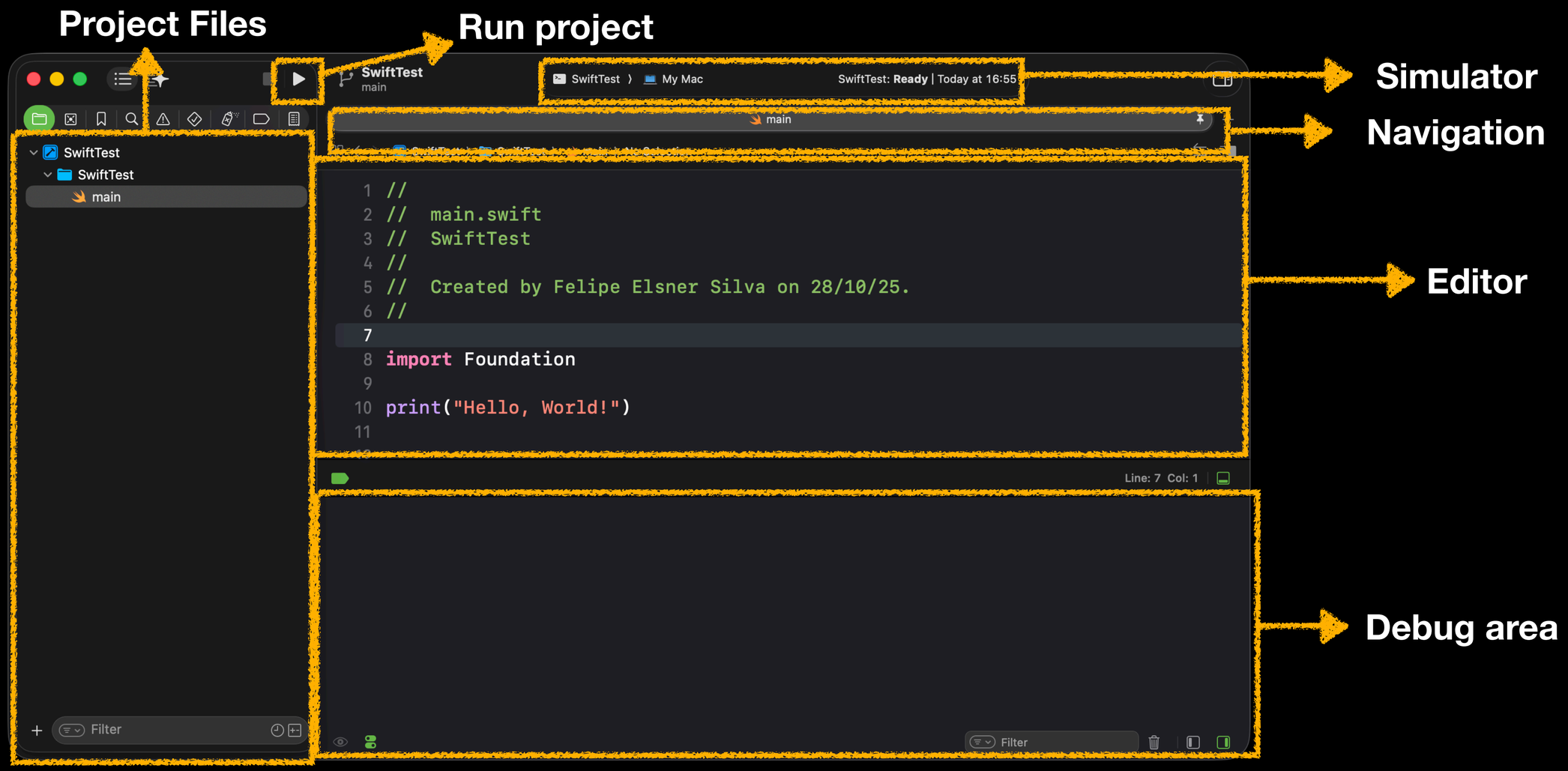

Swift Content

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Agenda

1. Constants and Variables
2. Basic Types
3. Decision Making
4. Collections
5. Loops
6. Functions
7. Classes, Structs and Enums
8. Optionals

Constants and Variables

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Constants

- Keyword: let
- Value: cannot be changed
- Reassignment: not allowed

Variables

- Keyword: var
- Value: can be changed
- Reassignment: allowed

Constants and Variables

Comments

- Documentation
- Code Explanation
- Warnings
- Stress Relief

```
// Single line comment

/*
Multi line
comment
*/
```

Basic Types

Type Inference

```
let name = “Elsner"          // String
var age = 23                 // Int
let kmTraveled = 12.5        // Double or Float
var canRideABike = true // Bool
```

Basic Types

Type Declaration

```
let name: String = “Elsner"
var age: Int = 23
let kmTraveled: Float = 12.5
var canRideABike: Bool = true
```

Decision Making

Basic Operators

Operation	Operator
Sum	+
Multiply	*
Subtract	-
Divide	/
Modulus	%

```
var sum = 1 + 3
var multiply = 4 * 2
var subtract = 4 - 5
var divide = 10 / 3
var modulus = 10 % 4
```

Decision Making

Attribution Operators

Operation	Operator
Sum	+=
Multiply	*=
Subtract	-=
Divide	/=
Modulus	%=

```
var value = 1
value += 1      //1 + 1 = 2
value *= 4      //2 * 4 = 8
value -= 2      //8 - 2 = 6
value /= 3      //6 / 3 = 2
value %= 5      //2 % 5 = 1
```

Decision Making

Comparison Operators

Operation	Operator
Equal to	==
Different from	!=
Greater than	>
Greater or equal to	>=
Less than	<
Less or equal to	<=

```
1 == 2          //false
1 != 2          //true
1 > 2           //false
1 >= 2          //false
1 < 2           //true
1 <= 2          //true
```

Decision Making

Logical Operators

Operation	Operator
And	&&
Or	||
Not	!

```
true && false   //false
true || false   //true
!true           //false
```

Decision Making

Swift Conditionals

1. If-Else
2. Switch
3. Ternary Operator

Swift Conditionals

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If-Else:

```
if CONDITION {
(...)
}
else {
(...)
}
```

EXEMPLE:

```
if num % 2 == 0 {
    print(“Num is Even")
}
else {
    print(“Num is Odd”)
}
```

Swift Conditionals

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If-Else:

```
if CONDITION {
(...)
}
else if CONDITION {
(...)
}
else {(...)}
```

EXEMPLE:

```
if num % 2 == 0 {
    print(“Num is Even")
}
else if num % 2 != 0 {
    print(“Num is Odd”)
}
else { print(“Not a Number")}
```

Swift Conditionals

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Switch:

```
switch VALUE {
case value1: (...)
case value2: (...)
default: (...)
}
```

EXEMPLE:

```
switch num {
case 1: print(“Num is 1")
case 2: print(“Num is 2")
default: print(“Num is other
value")
}
```

Swift Conditionals

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Ternary Operator:

```
var ternary = CONDITION ? (...) : (...)
```

EXEMPLE:

```
var ternary = num % 2 == 0 ? "Even" : "Odd"
```

Collections

1. Arrays -> List of elements of same value

```
var array: [Type] = ["Value1", "Value2", “Value3”]
```

2. Dictionaries -> List of pair (key, value)

```
var dict: [Type: Type] = [key1: value1, key2: value2]
```

Collections

1. Arrays -> List of elements of same value

```
var array: [String] = ["Dharana", "Igor", “Riboli”]
array[1] //Result is Igor
```

2. Dictionaries -> List of pair (key, value)

```
var dict: [String: Int] = [“One”: 1, “Two”: 2]
dict[“Two”] //Result is 2
```

Loops

1. For
2. While
3. Repeat-While

Loops

For:

```
for index in range {
(...)
}
```

EXEMPLE:

```
for num in 1..<10 {
  print(“Current Index: \(num)”)
}
/* Current Index: 1
   Current Index: 2 ...
   Current Index: 10 */
```

Loops


```
var mentors: [String] = ["Dharana", "Igor", “Riboli”]
```

For:

```
for index in list {
(...)
}
```

EXEMPLE:

```
for mentor in mentors {
  print(“Mentor \(mentor) is cool”)
}
/* Mentor Dharana is cool
   Mentor Igor is cool
   Mentor Riboli is cool */
```

Loops

While:

```
while CONDITION {
(...)
}
```

EXEMPLE:

```
var count = 0
while count < 3 {
  print("Count is: \(count)")
  count += 1
}
/* Count is: 0
   Count is: 1
   Count is: 2 */
```

Loops

While:

```
while CONDITION {
(...)
}
```

EXEMPLE:

```
var count = 0
while true {
  print("Count is: \(count)")
  count += 1
}
/* Count is: 0
   Count is: 1
   Count is: 2 ... INFINITY */
```

Loops

While:

```
while CONDITION {
(...)
}
```

EXEMPLE:

```
var count = 0
while false {
  print("Count is: \(count)")
  count += 1
}
/*


*/
```

Loops

Repeat-While:

```
repeat {
(...)
} while CONDITION
```

EXEMPLE:

```
repeat {
  print(“Running...”)
} while false
/*
   Running...
*/
```

Loops


```
var numbers: [String] = [10, 20, 30, 40, 50]
```

Continue:

- Skips the current interaction.
- The code will continue in the loop.

Break:

- Stop the loop immediately.
- The code will skip all the loop.

Loops


```
var numbers: [Int] = [10, 20, 30, 40, 50]
```

Continue:

```
for number in numbers {
    if number != 20 {
        print("This is not number 20")
        continue
    }
    print(“\(number)”)
}
/*This is not number 20

20

This is not number 20

This is not number 20

This is not number 20*/
```

Break:

```
for number in numbers {
    if number != 20 {
        print("This is not number 20")
        break
    }
    print(“\(number)”)
}
/*

  This is not number 20

*/
```

Swift Content

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Agenda

1. Constants and Variables ✅
2. Basic Types ✅
3. Decision Making ✅
4. Collections ✅
5. Loops ✅
6. Functions
7. Classes, Structs and Enums
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Challenge

- Download the material and the activity (Swift File):
- Do the activity proposed.
- Upload a Command Line Tool (zipped) with the activity done:
  - https://iosda.link/FoundationsSwift
  - Name your .zip archive like this:
    - 11-14 - Swift Basics - <Your Name>.zip
      - (Ex: 11-14 - Swift Basics - Felipe_Elsner.zip)
- Due to: 14/11 at 12:00.

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