# Animations

# Minulé cviko

❓ Otázky?

👷 Semestrálky

# Animation

Portayal of UI over a period of time

Configurable, usually very brief

The point of animation is to make user experience less abrupt

Draws the attention to things that are changing

# What can be animated?

Changes to the `View`s in cotainers that are already on screen

Appearance/disapperance of `Views`

Changes to the arguments to `Animatable` view modifiers of `Views`

Changes to the arguments to the creation of `Shapes`

# Types of animations

Implicit - using view modifier `.animation(Animation)`

Explicit - by wrapping `withAnimation(Animation) { }` around code

# Implicit animations

Using view modifier `.animation(Animation)`

"Automatic animation" - marks a `View` so that all modifiers arguments will always be animated

Changes are animated with specified `duration` and `curve`

```
Text("❤️")
    .opacity(isVisible ? 1 : 0)
    .animation(.easeInOut(duration: 1))
```

# Animation curve

`.linear` - consistent rate throughout

`.easeIn` - animation starts quickly, then slows at the end

`.easeOut` - opposite of `.easeIn`

`.easeInOut` - starts out slowly, picks up speed, then slows at the end

`.spring` - provides a bounce to the animation

# Explicit animations

By wrapping `withAnimation(Animation) { }` around code

Changes made as a result of executing block of code are animated together

Changes are animated with specified `duration` and `curve`

# Transitions

Specifies how to animate arrival/departure of `View`s using `.transition()`

Transition is a pair of `ViewModifier`s - "before" and "after" modifications

Defines what transition to use, not causing transition to occur

Transitions only work on explicit animations, not the implicit ones!

# .onAppear

Transitions only work on `View`s already on screen

`.onAppear { }` can be used on `View` to cause a change that results in a transition

There's also `.onDisappear { }` 😉

# AnimatableModifier

Used to create custom modifier with animation

Specified using `var animatableData: Type`

`Type` has to implement `VectorArithmetic` - usually a floating point number

`Type` can also be a pair - `AnimatablePair`

Let's animate something! 💫

# Lottie

JSON-based animation file format

Enables designers to ship animations on any platform easily as assets

Easy to integrate into your app

# Summary

Types of animations (implicit, explicit)

Transitions

```
.onAppear { }, .onDisappear { }
```

```
AnimatableModifier
```

Lottie

# Questions ❓

# Thank you very much!