

# SOSCON

## rLottie

---

### Lottie Animation을 이용한 모션 그래픽스 활용 사례

Samsung | Platform Team | 최준수

2019. 10. 16





**Choi Jun-su**

**Samsung Software Membership / 2013 ~ 2015**

**Samsung Research.Platform Team.Tizen Platform Lab.UIFW / 2016 ~**

**EFL (Enlightenment Foundation Libraries) Committer / 2019**

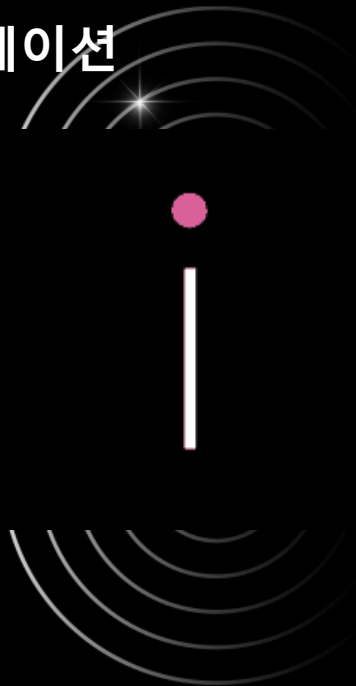


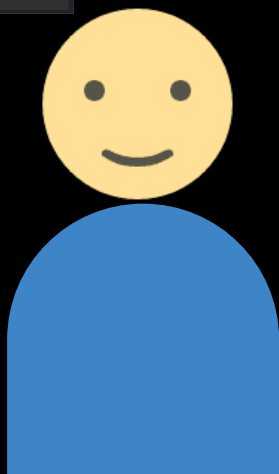
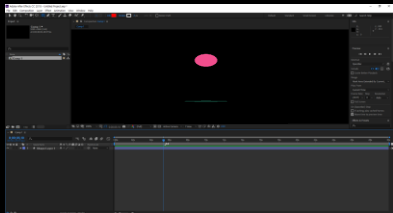
- Motion Graphics? / Body Movin? / Lottie ?
- rLottie? / with Tizen ?
- Use case
- What we can do?



**Motion**으로 이루어진 **Graphics** / 영상 기법 중의 하나

움직임, 크기의 변형, 색의 변형 등으로 이루어진 영상 or 애니메이션

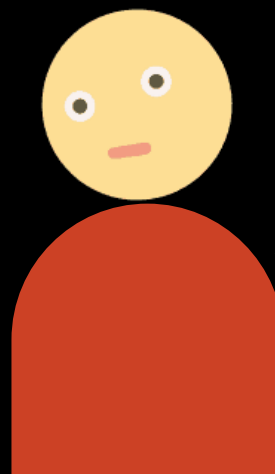




디자이너



디자인 요청



개발자

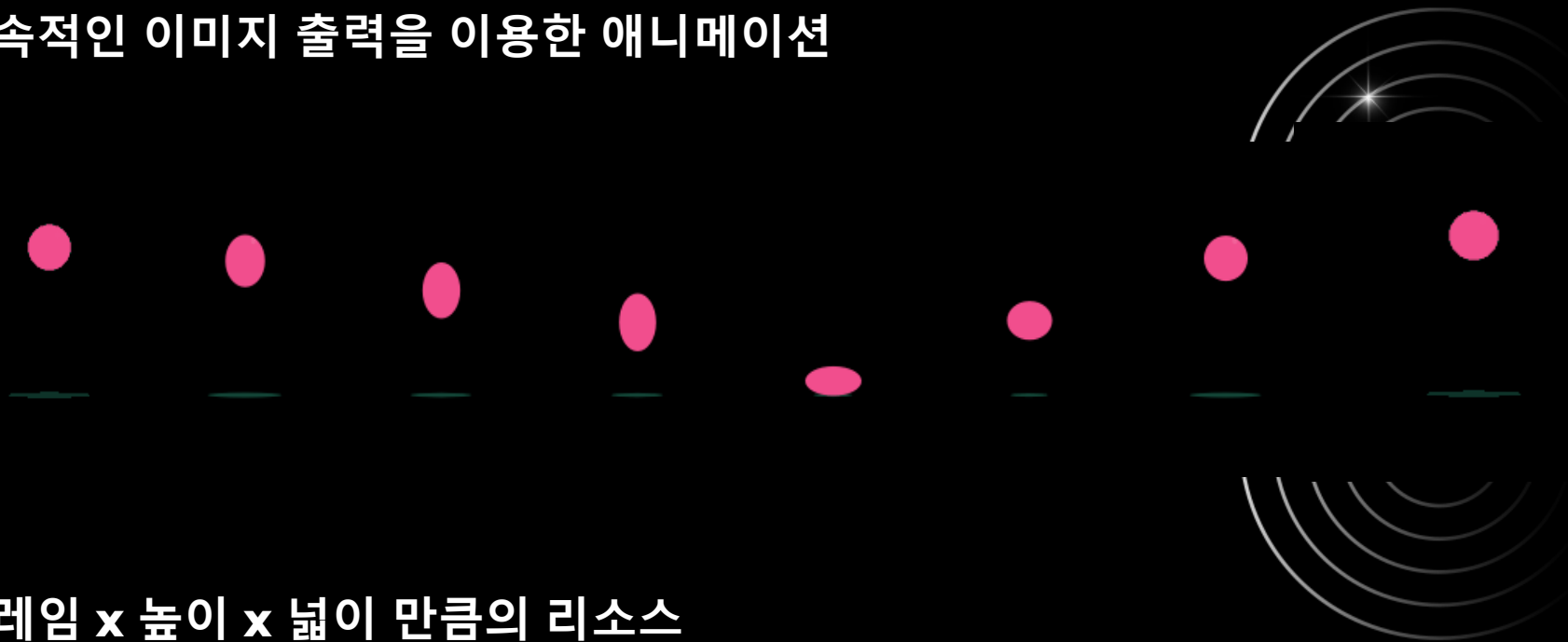
## 생각중...

이걸.. 어떻게.. 구현하면 될까..  
구현이 되긴 될까..



## Image Animation

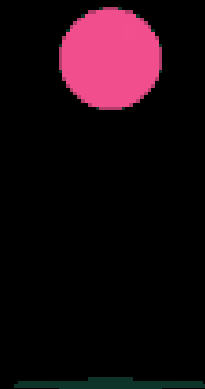
연속적인 이미지 출력을 이용한 애니메이션



프레임 x 높이 x 넓이 만큼의 리소스

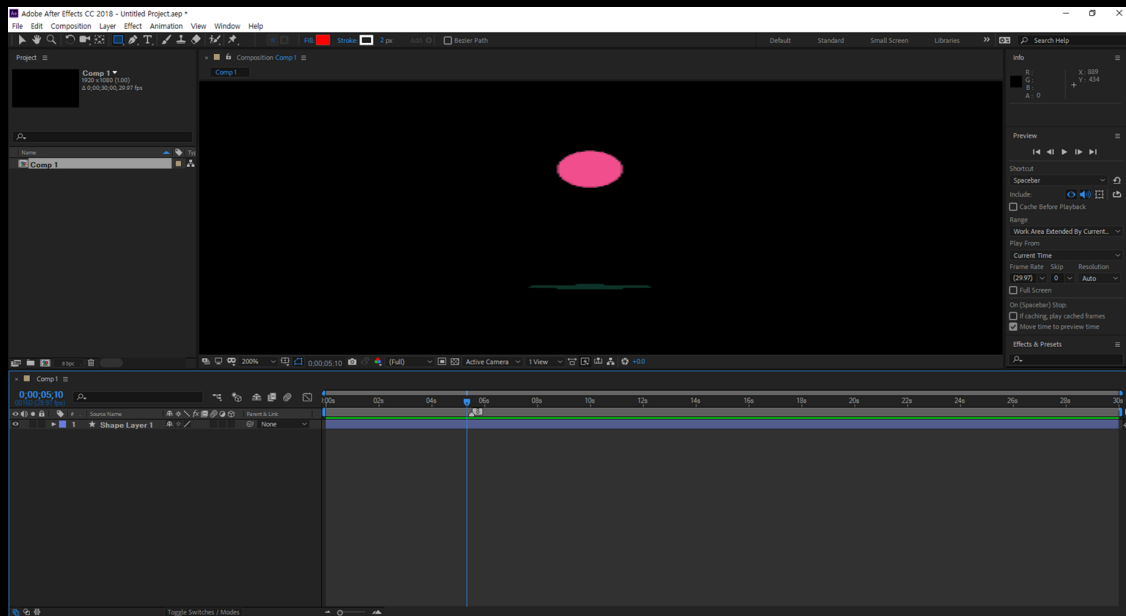
## Hard coding

```
func Every_frame (frame, x, y)
  if (object.pos.y == bound.y)
    dir = -1;
  else if (object.pos.y == 0)
    dir = 1;
  object.pos.y = y - (frame * gravity * dir);
  object.width += (frame * 0.1 * dir)
  object.drawcircle(objectpos, width, height);
  blah blah
  blah blah....
```



섬세한 표현 X, 복잡도  $\pi$ , 유지관리  $\pi\pi$

## Adobe After Effect - 동적 애니메이션 제작 가능한 영상 편집 툴



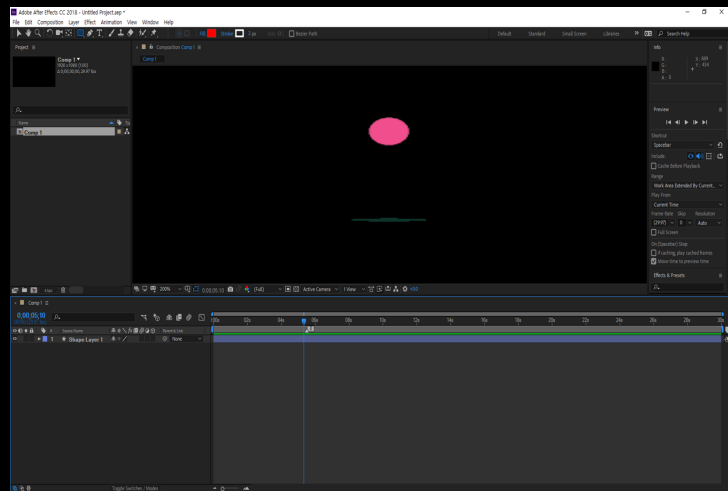


# Body Movin?

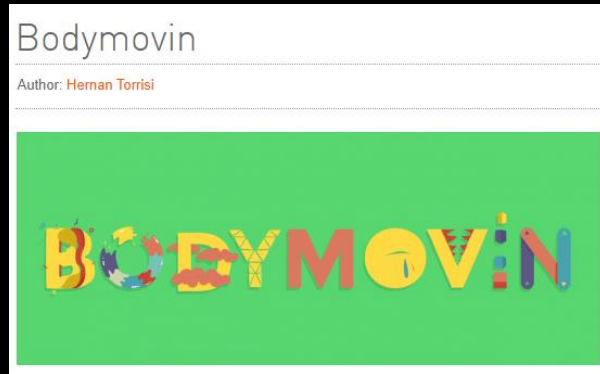
SOSCON 2019

## Herman Torrison 가 제작한 AfterEffect(Adobe)의 Json exporter plug-in

<https://aescripts.com/bodymovin/>



Bodymovin →



[bouncing\_ball.json]

```
{
  "v": "4.5.7",
  "fr": 30,
  "ip": 0,
  "op": 30,
  "w": 800,
  "h": 600,
  "ddd": 0,
  "assets": [
    {
      "id": "comp_1",
      "layers": [
        {
          "ddd": 0,
          "ind": 0,
          "ty": 4,
          "nm": "Shape Layer 4",
```



## Airbnb의 Salih Abdul-Karim, Brandon Withrow, Gabriel Peal, Leland Richardson

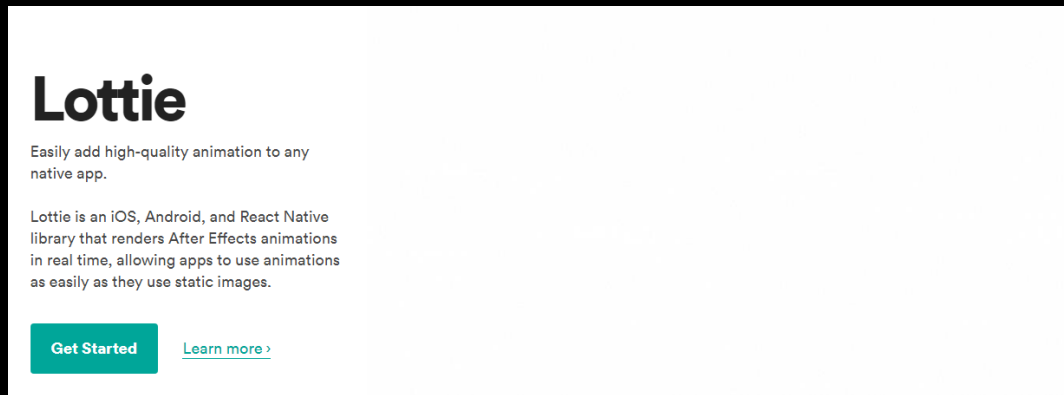
여러 플랫폼에서 Airbnb를 이용하는 고객들에게 Flexible 한 animation을 보여주길 원함.

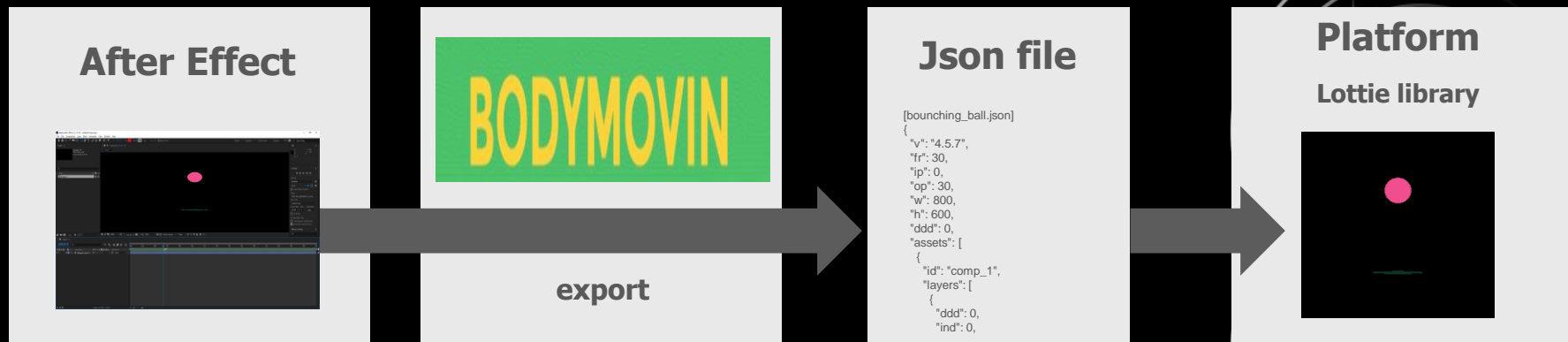
Facebook의 keyframe의 경우 AfterEffect의 필수 기능만 지원.

Marcus Eckert의 Squall은 IOS만 지원함.

여러 플랫폼을 지원하면서 AfterEffect의 많은 기능을 지원하는 라이브러리를 원함.

BodyMovin 프로젝트에서 영감





<a href="#">airbnb / lottie-android</a>	Watch 829	Star 27k	Fork 4.3k	
<a href="#">airbnb / lottie-ios</a>	Used by 62.2k	Watch 460	Star 18.3k	Fork 2.6k
<a href="#">react-native-community / lottie-react-native</a>	Used by 62.9k	Watch 250	Star 12k	Fork 1.2k

## IOS, Android, Native React 그리고..

Xamarin

NativeScript

Axway Appcelerator

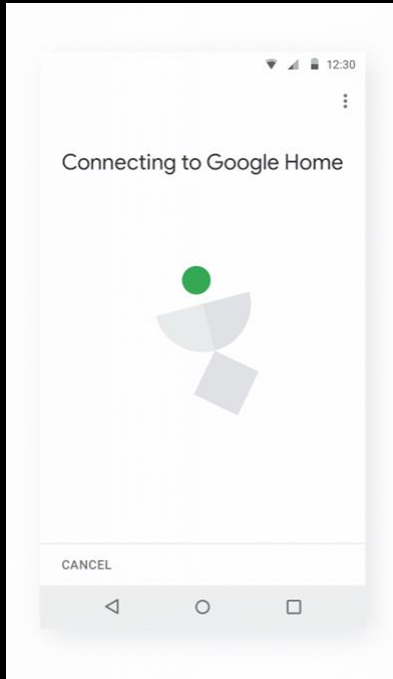
ReactXP

Flutter

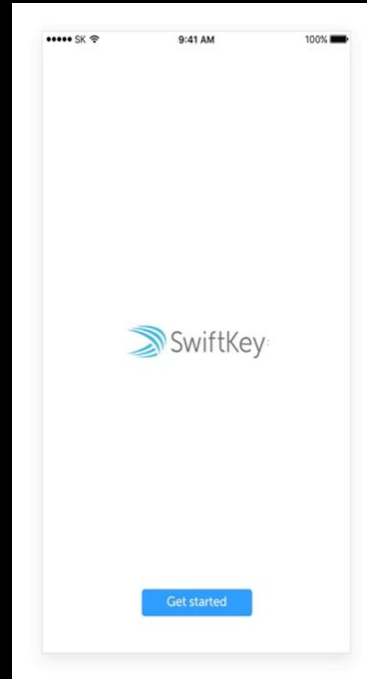


<https://airbnb.io/lottie/#/community-showcase>

## Google Home



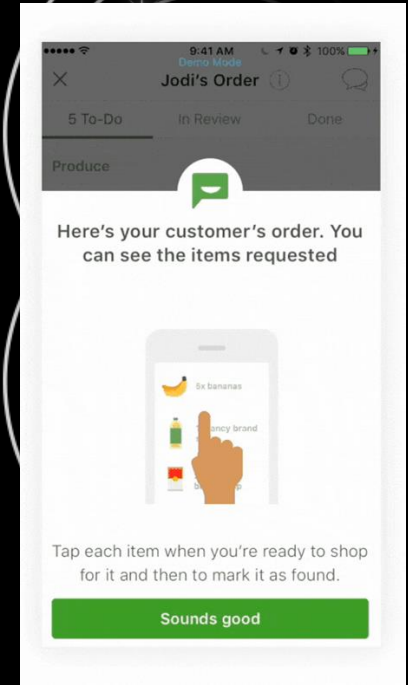
## SwiftKey



## Uber Eats



## Instacart



그렇다면 Tizen 에서는...?



# rLottie

---



SOSCON 2019

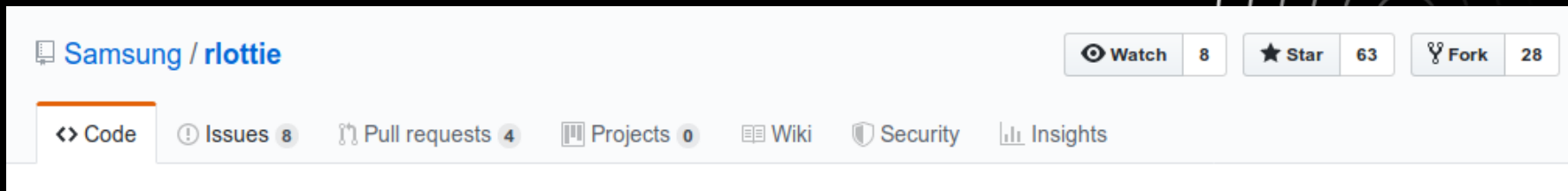
SAMSUNG OPEN SOURCE CONFERENCE 2019

Tizen 플랫폼을 위한 Lottie animation player 필요

Lottie-player 프로젝트 생성

자체 rasterizer 내장

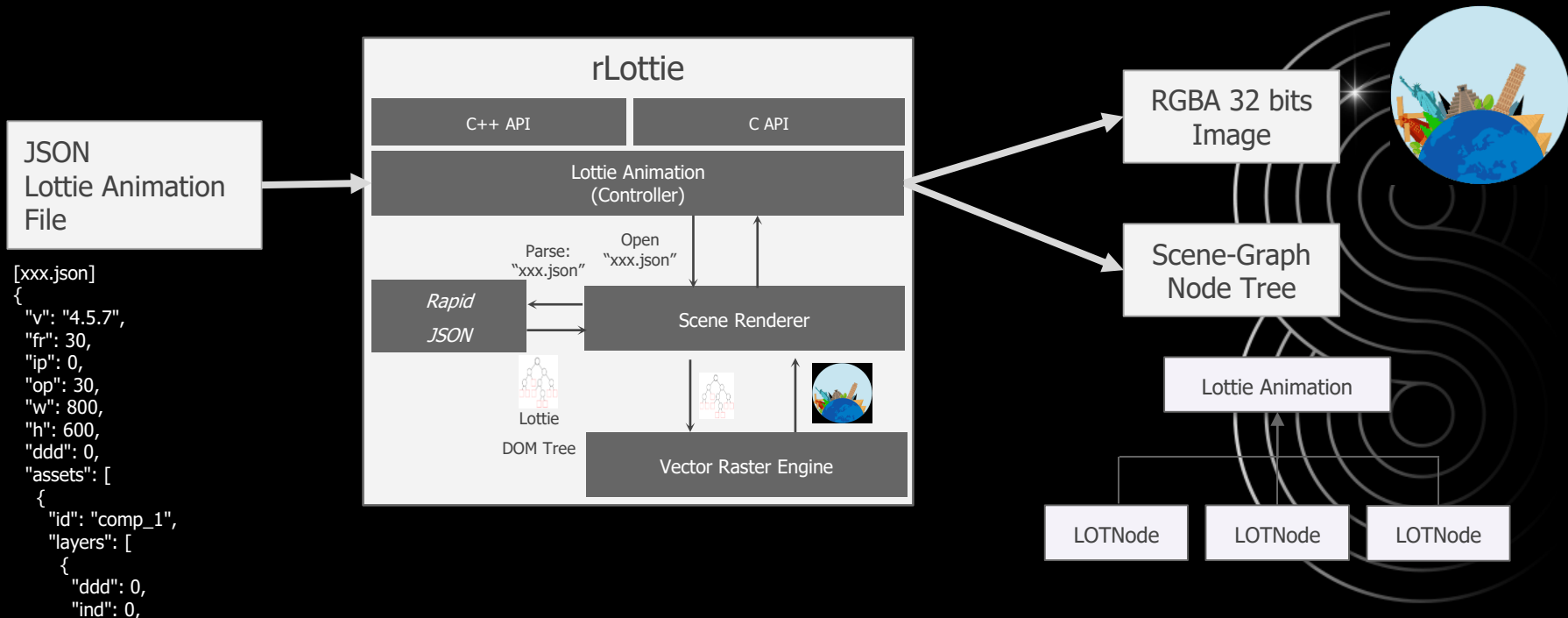
rlottie 프로젝트 생성 -> github.com 오픈





## Platform Independent vector based Animation Library

Lottie animation을 로드해서 RGBA 32Bit Buffer Data 혹은 Scene-Graph Node tree 를 제공 하는 Library



**Multi-Threading Rendering**

**Vector Rasterization**

**Dynamic Property 등의 Lottie 기술 지원**

**json2gif 기능 제공**

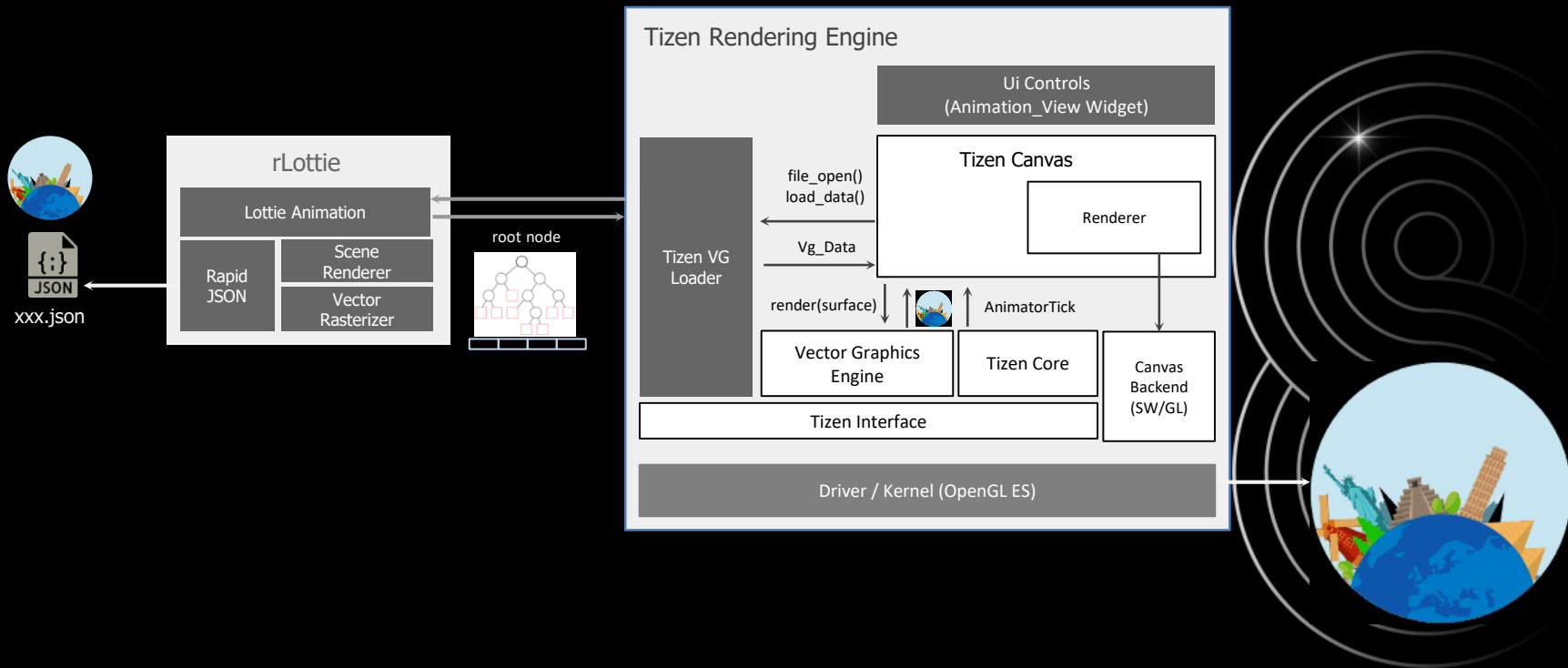


Supported / **Not supported**

- **Shape**
  - Shape, Ellipse, Rectangle, Rounded Rectangle, Polystar, Group, Trim Path
- **Renderable**
  - Fill, Stroke, Radial Gradient, Linear Gradient, Gradient Stroke
- **Transforms**
  - Position, Position (separated X/Y), Scale, , Rotation, Anchor Point, Opacity, Parenting, Auto Orient
  - **Skew**
- **Interpolation**
  - Linear Interpolation, Bezier Interpolation, Hold Interpolation, Spatial Bezier Interpolation, Rove Across Time
- **Mask**
  - Mask Path, Mask Opacity, Add, Subtract, Intersect
  - **Lighten, Darken, Difference, Expansion, Feather**
- **Mattes**
  - Alpha Matte, Alpha Inverted Matte, Luma Matte, Luma Inverted Matte
- **Text, Merge Paths, Layer Effect, Expressions**
- **Images, Precomps, Time Stretch, Time remap, Markers**



Table Link : <https://github.com/Samsung/rlottie#supported-after-effects-features>



## Tizen School (<http://tizenappschool.org/tutorial/151/contents/1>)

```
//Object Create  
Evas_Object *anim_view = elm_animation_view_add(Parent);  
elm_animation_view_file_set(anim_view, /* FILE PATH/like.json */, NULL);
```

Event



```
elm_animation_view_play(anim_view);
```

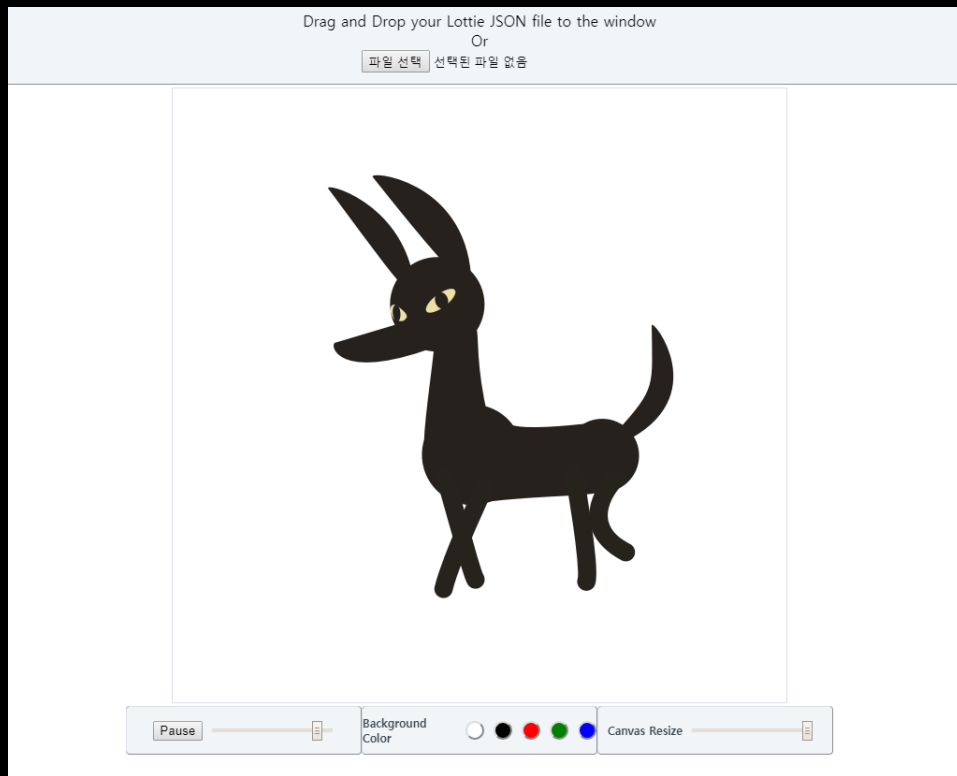
OR

```
elm_animation_view_play_back(anim_view);
```



The screenshot shows a mobile browser interface for the Tizen School website. At the top, there is a logo for 'TIZEN SCHOOL' and a search icon. The main heading is 'How to use a Lottie animation' in orange. Below the heading, the text reads: 'Tizen supports Lottie animation. You can play Lottie animation using Native APIs.' It also shows the article was created on 2019/08/19 and modified on 2019/08/20. A navigation bar shows '1/5' with back and forward arrows. Below that is a 'Table of content' dropdown menu. The first section is 'I. Introduction' with a sub-section '1. Lottie animation'. The text in this section describes modern UX and micro-interactions, mentioning Lottie as a practical method for visual shapes and animation metadata. At the bottom right, there is a small code block with some text.

## rlottie 기반, lottie animation 테스트 가능



# Use case

---

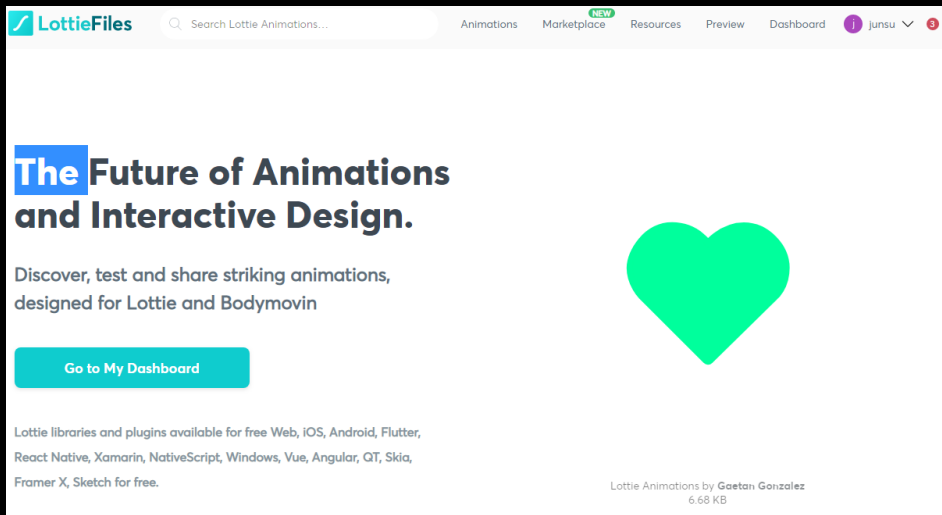


SOSCON 2019

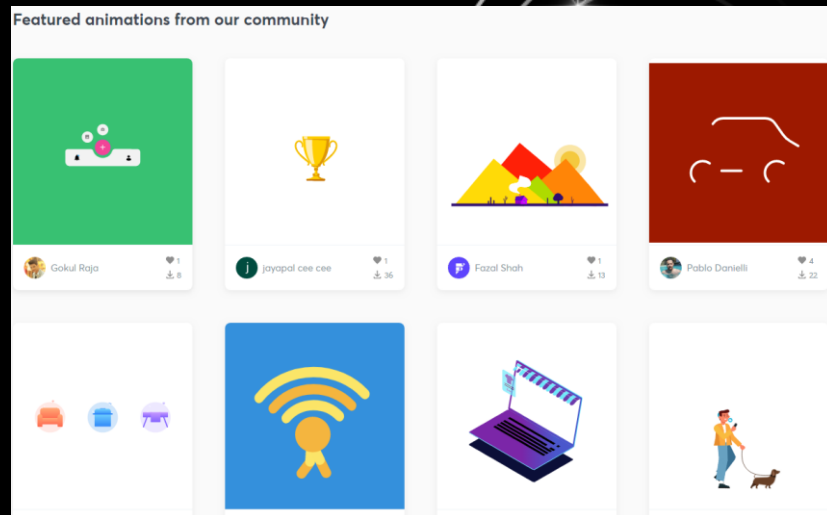
SAMSUNG OPEN SOURCE CONFERENCE 2019

## Lottie Animation 공유 사이트

www.lottiefiles.com

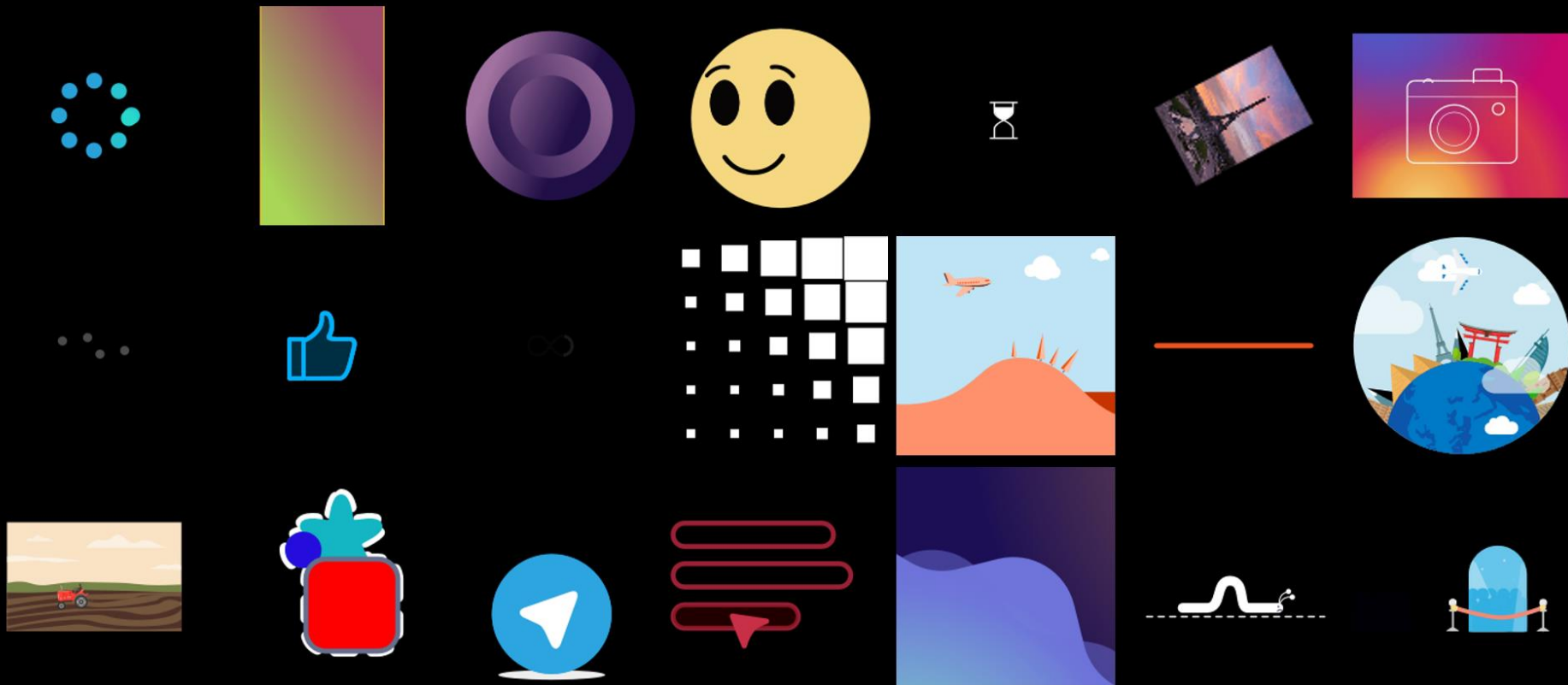


The screenshot shows the LottieFiles website homepage. At the top, there is a navigation bar with the LottieFiles logo, a search bar, and links for Animations, Marketplace (marked as NEW), Resources, Preview, and Dashboard. The user's name 'junsu' is visible in the top right. The main content area features a large blue heart icon and the text 'The Future of Animations and Interactive Design.' Below this, it says 'Discover, test and share striking animations, designed for Lottie and Bodymovin'. A blue button labeled 'Go to My Dashboard' is present. At the bottom, there is a list of supported platforms: Web, iOS, Android, Flutter, React Native, Xamarin, NativeScript, Windows, Vue, Angular, QT, Skia, Frammer X, and Sketch for free. A specific animation is highlighted: 'Lottie Animations by Gaetan Gonzalez' with a size of 6.68 KB.



The screenshot shows a section of the LottieFiles website titled 'Featured animations from our community'. It displays a grid of eight animation thumbnails. Each thumbnail includes a preview image, the creator's name, a heart icon for likes, and a share icon. The featured animations are: 1. A green background with a white bar and three dots. 2. A yellow trophy on a white background. 3. A colorful mountain range with a sun. 4. A red background with white curved lines. 5. A white background with three small icons (a car, a briefcase, and a person). 6. A blue background with a yellow Wi-Fi symbol. 7. A purple laptop with a blue screen. 8. A white background with a person walking a dog.



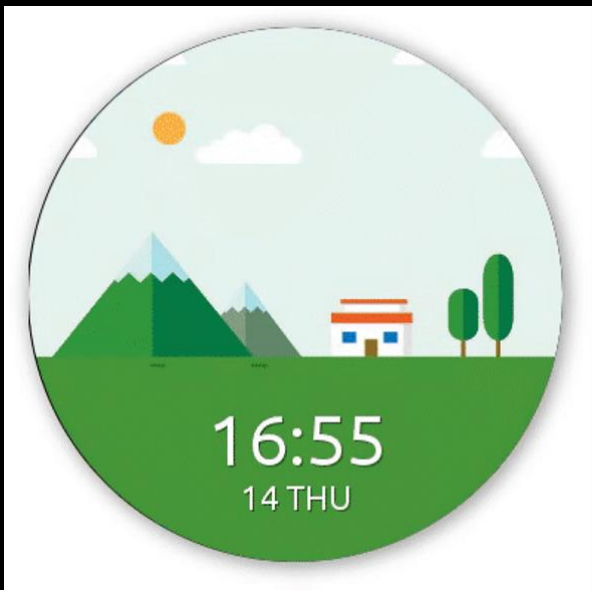


# SOSCON 2019

SAMSUNG OPEN SOURCE CONFERENCE 2019

## Galaxy Active 모델

+ 기존의 SVG 스펙 대체 가능



## 2019.7.6 - Animated Sticker 기능 추가

Animated Stickers Done Right



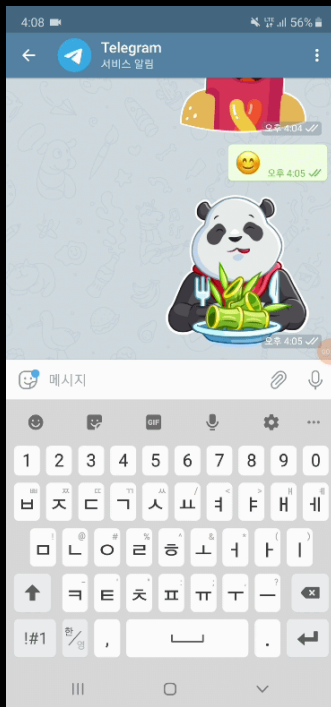
We launched stickers back in January 2015. Since then, the Telegram sticker format has been adopted by other apps to reach a total of 2 billion people. Today we're introducing a new format for animated stickers.

The illustration depicts a whimsical sticker factory. A man in a white shirt and grey vest is operating a large, ornate machine that produces stickers. A woman in a blue dress is standing next to him, and another woman in a white dress is sitting in a green armchair, holding a glass of wine. A golden retriever dog is sitting on the floor in the foreground. In the background, there are framed pictures of various animals on the wall. A large, glowing pink apple sticker with a smiling face is displayed in a golden frame on the right side of the scene.



## Lottie base / 자체 스티커 포맷

텍스트 입력 -> 이모티콘 -> Sticker 매칭



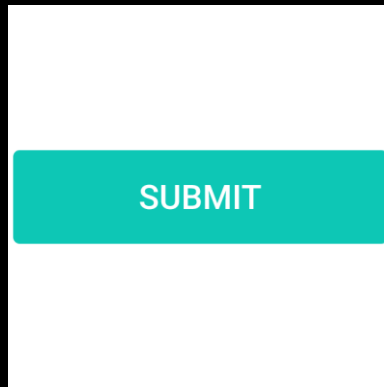
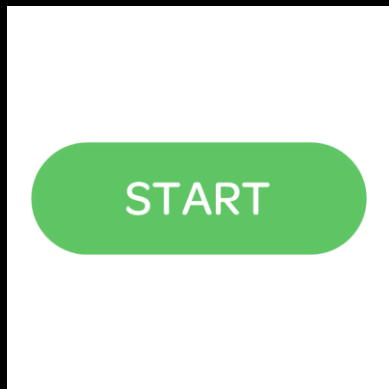
# What can we do?

---



SOSCON 2019

SAMSUNG OPEN SOURCE CONFERENCE 2019



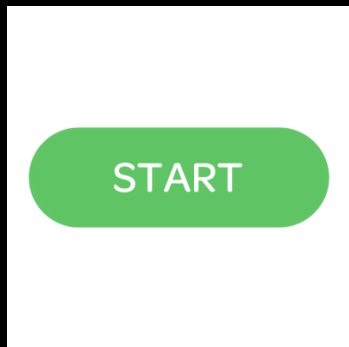
애의 정체는 뭘까요? **Button? Progress?**

**Button? Checkbox? Progress?**

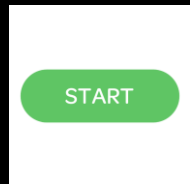
**User Application**에서는 어떻게 구현할 수 있을까요?



Original  
1 Frame ~ 30 Frame



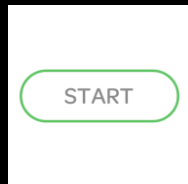
Click Event



1 Frame



2 Frame



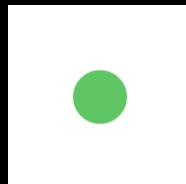
>



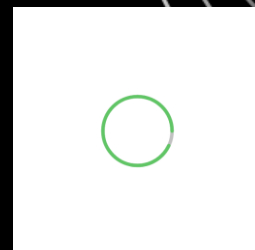
>



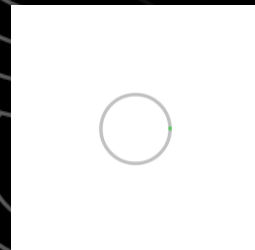
Timeline



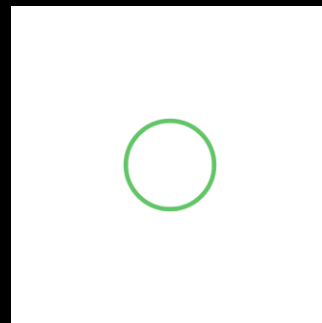
18 Frame



19 Frame



30 Frame



더 복잡한 케이스를 다룰 수 있을까요?

중요한것은 디자인 그 자체가 결과물이 되는 과정





## rottie

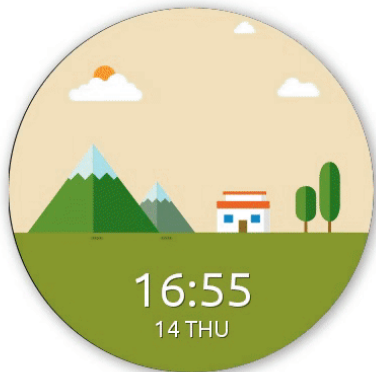
build passing windows - passing

rottie is a platform independent standalone c++ library for rendering vector based animations and art in realtime.

Lottie loads and renders animations and vectors exported in the bodymovin JSON format. Bodymovin JSON can be created and exported from After Effects with [bodymovin](#), Sketch with [Lottie Sketch Export](#), and from [Haiku](#).

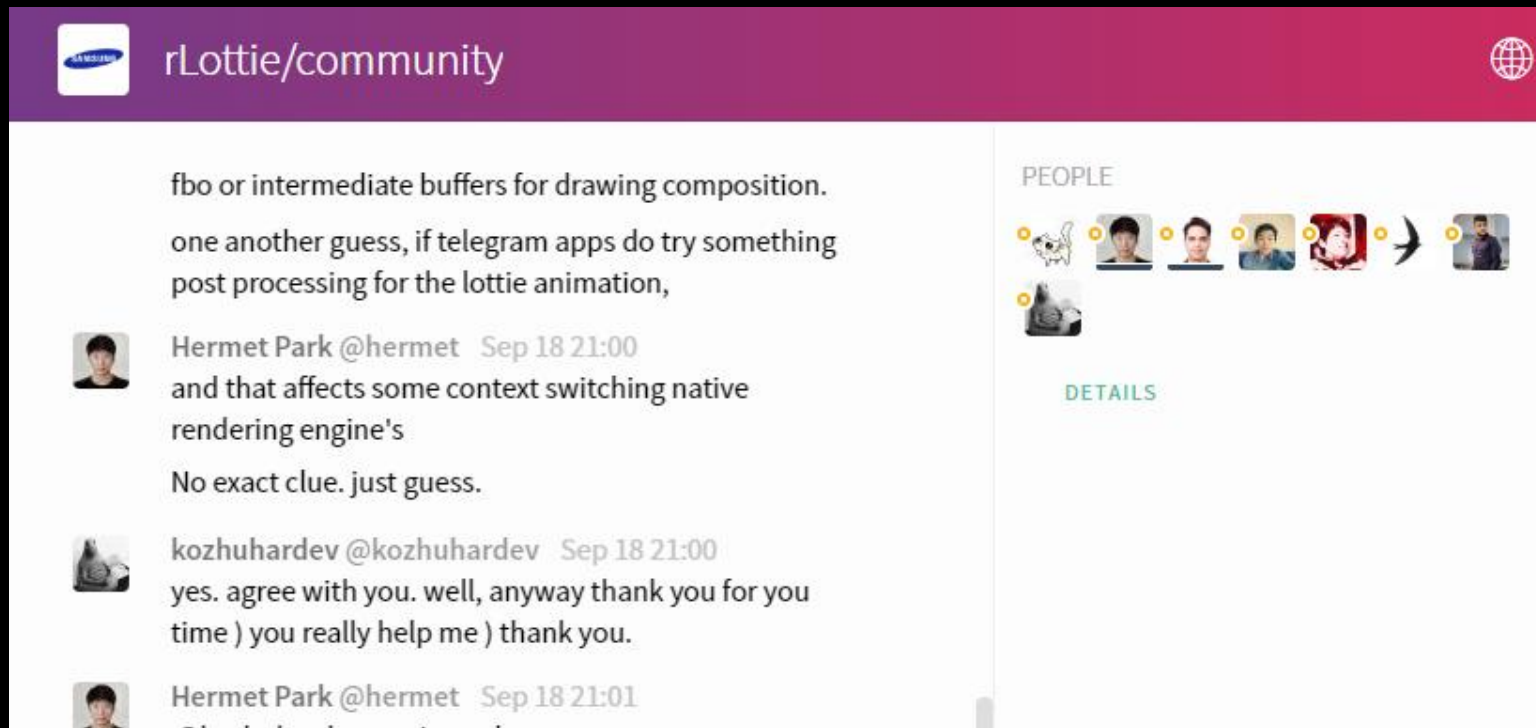
For the first time, designers can create and ship beautiful animations without an engineer painstakingly recreating it by hand. Since the animation is backed by JSON they are extremely small in size but can be large in complexity!

Here are small samples of the power of Lottie.



## Pull request





The screenshot shows a Gitter chat interface for the community `rLottie-dev`. The header is purple with the community name and a globe icon. The chat area contains three messages:

- A message from an unnamed user: "fbo or intermediate buffers for drawing composition. one another guess, if telegram apps do try something post processing for the lottie animation,"
- A message from `@hermet` (Hermet Park) at 21:00: "and that affects some context switching native rendering engine's No exact clue. just guess."
- A message from `@kozhardev` (kozhardev) at 21:00: "yes. agree with you. well, anyway thank you for you time ) you really help me ) thank you."
- A message from `@hermet` (Hermet Park) at 21:01: "Ok, I'll try to find a way to..."

On the right side, there is a "PEOPLE" section showing a row of user avatars with a plus sign to the left of each. Below it is a "DETAILS" section.

# QnA

---



SOSCON 2019

SAMSUNG OPEN SOURCE CONFERENCE 2019

THANK YOU

SOSCON 2019

SAMSUNG OPEN SOURCE CONFERENCE 2019

