Kodi v18 features and improvements

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KODI®

v18.0 - Leia

v18
codename "Leia"

Work started around november 2016
Released 29 January 2019

v18

Goals

Focus on architecture and improve implementation
what we already have

The long wanted cleanup release we always talked
about..
at least that how it now looks like

Coding goals

Improving existing code quality (quite some legacy code left from early days)

Upgrade code to current C++11 standard

Remove duplicated code

Remove obsolete libraries

Move to a single well maintained library (FFmpeg)

Dropping unmaintained code/feature parts

Try upstreaming the patches we carry as much as possible

Coding goals

Move non core functions towards binary add-ons
- Audio encoders / decoders
- Visualisations / screensavers
- PVR/DVR
- Archive support
- Peripherals
- Input streams (DRM, DASH)
- Picture decoding
- Distributed file systems (currently WIP)

Someday we will be able to update them between releases (and we finally succeeded)

Don't maintain code you don't need in the end

Some stats

v18 final

- > 3,000 Pull Requests

- > 10,000 commits

- > 36 contributors

- > 9,000 changed files

- Lots of line changes

User base

- No idea as we don't track users

Planned changes

We never promise anything
although we will try to get some things done

Here's what is done though….

Return of the XBOX

Realizing a dream of becoming once again available on the device that started it all

and we succeeded….

XBOX One

Started out with moving towards Kodi 64bit Windows version

June 2016 the work started on using Windows Centennial Bridge for getting to Windows Store

December 2016 the initial work started towards a full UWP version of Kodi

July 2017 the first runtime test could be done on a very bare version

December 2017 the official announcement was made and made available through XBOX and Windows Store

Still not fully featured to this day due to platform limitations

VideoPlayer

Continues work on further improving our core VideoPlayer

VideoPlayer - The past

A lot of legacy code was still around dating back to XBOX days

Code grew over time when adding new platforms with no real grand design in mind

Not written platform agnostic

Not as efficient as it should be

Huge entanglement of code across the codebase

Current state was holding back features

VideoPlayer - The benefits

Maintainable code

Can't stress enough about maintainable code

Platform agnostic and platform specific are split

More efficient way of doing playback

Adding new features should be less of a hassle

VideoPlayer - Possible features

DONE:

Large part of the cleanup

Speed-up or slow down playback speed

Futureproof towards higher bitrate and resolution videos

Additional shaders and renderers

Playing DRM protected streams using InputStream framework

FUTURE:

Act as transcoder towards other players

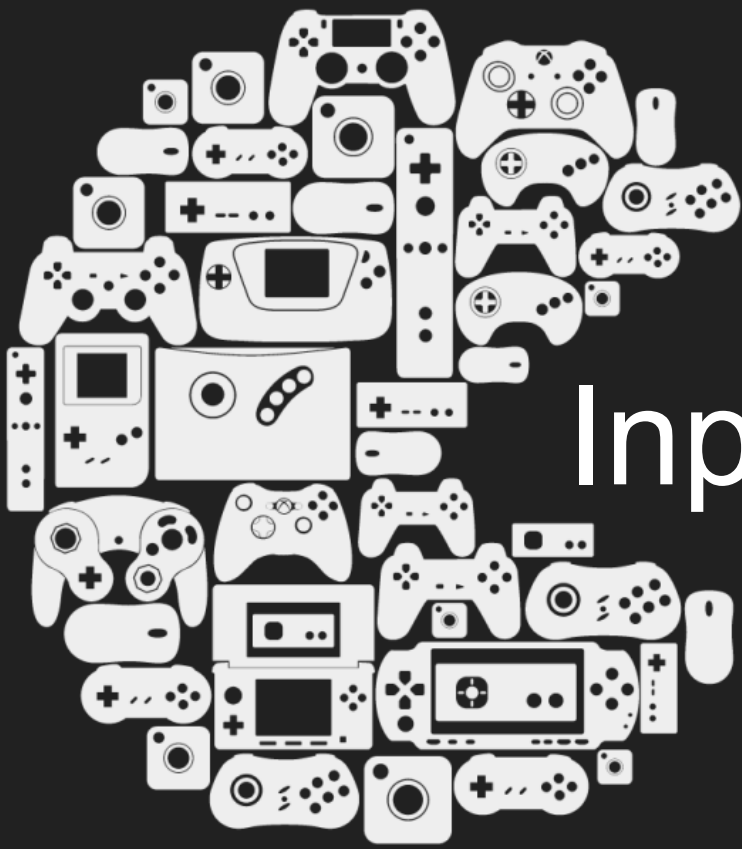Next up is splitting playback and user interface into their own process

Headless mode which makes Kodi a possible server component

Picture-In-Picture

Screenshots….

No idea what I would show here as you might as well just try yourself

Input handling

Complete rework of how input is handled
and split it off into controller add-ons

RetroPlayer

Allows you to play console ROM's the easy way without the hassle of installing and configuring emulators

Retroplayer

Playing old games is so much fun (with friends)

Easy controller setup without caring for brand
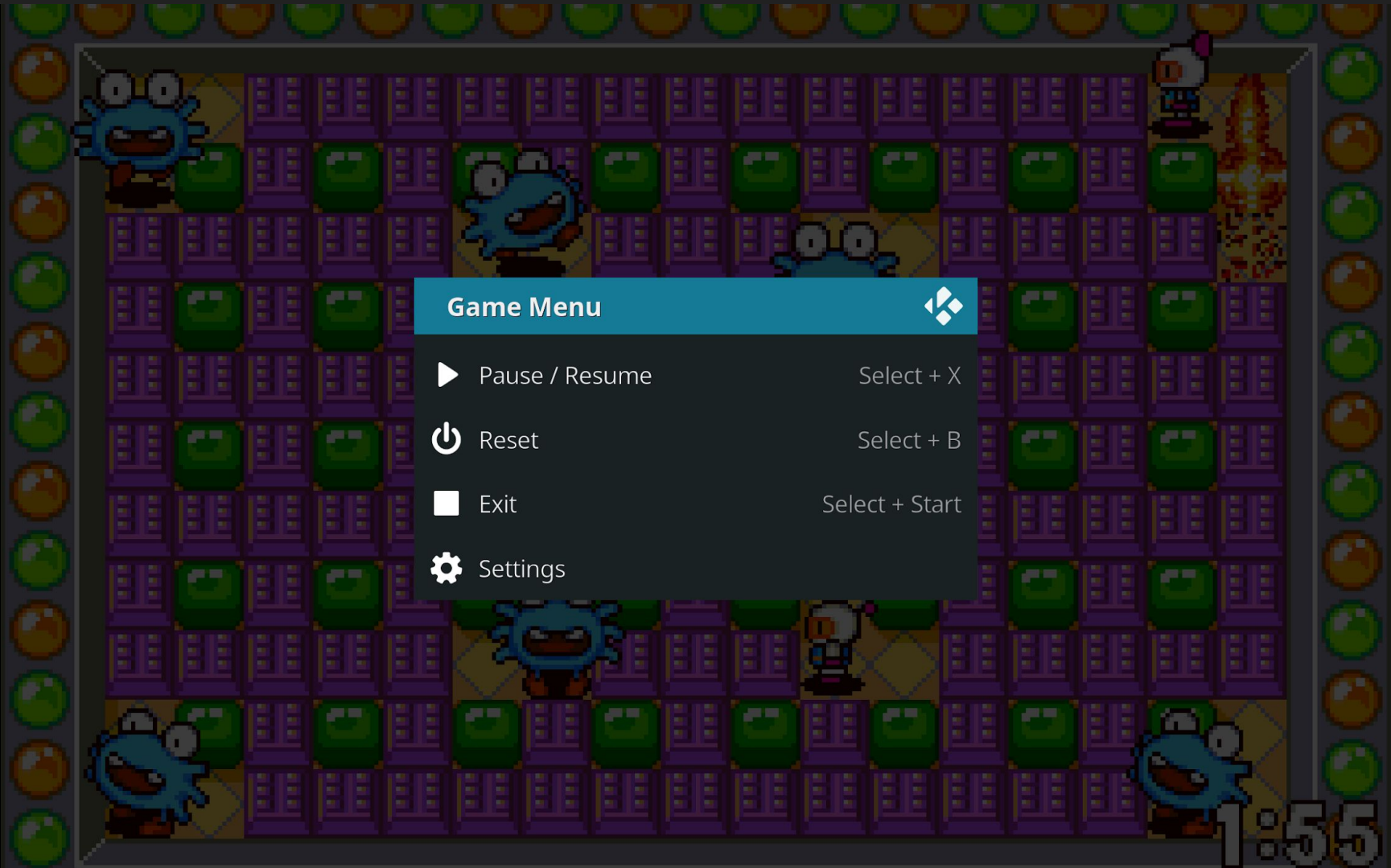
Auto handling of emulators

Never have to leave Kodi for playing games

A single library for all retro games (future work)

Save, pause, rewind and play again

We upstream as much code as possible to not need to carry patches

Retroplayer

Game Menu

▶ Pause / Resume   Select + X

⏻ Reset   Select + B

◻ Exit   Select + Start

⚙ Settings

1:55

Retroplayer

Nearest neighbour
Pixelate

Bilinear
Smooth

Shows the game's pixels without any modifications.

Input handling - Controller setup

Input handling - Controller setup

v18 Leia - what else was done

Android platform only uses standard Android API functions

Windows now also as 64bit version

Wayland support added (again)

Direct Rendering Manager (generic DRM/KMS implementation using GBM)

Almost entirely using CMake buildsystem

A binary add-on repository for almost all platforms

v18 Leia - what else was done

DASH support

DRM (Digital Rights Management) using Widevine

PVR improvements

Music library organisation improved

Improved Bluray support

Video library can scan embedded tags

An massive amount more but too much to mention……

> Visit our wiki for a semi complete changelog

v18

Biggest release day issues

- Windows bridged to UWP migration seemed to mismatch, users started clean install
  - Expected was the SMB v1/2/3 issues
- DVD playback on Android doesn't really work

V18.1 already in the works to solve some issues

v19
codename "M******"

Work after v18 has already started

v19 M***** - Python 3

- Python 2 is End Of Life in 2020
- Python 3 is mature enough and more and more Python libraries either convert their codebase to Python 3-compatible or drop Python 2 support completely (Django is the most notable example).
- Most current Python books, tutorials and courses are focused on Python 3
- Python 2 is not actively developed. It receives only security patches while
- Python 3 gets all the cool new features with every minor version

Planning:
- Only Python 2 & 3 compatible add-ons will be accepted in v18
- Only Python 3 compatible add-ons will be accepted in v19
- Kodi v18 builds with Python3 will be made available for testing purpose

- Showing 57 changed files with 663 additions and 659 deletions.

v19 M***** - Possible other features

- Google Summer of Code projects
- Reworked database layer that allows easier switching of database backends
- …...

It's not just Kodi

We do need to maintain a much bigger whole

What else to maintain

- Forum
- Website
- Wiki
- Distributed mirror server system
  - \> 25TB/Day traffic
  - Average 3k req/s
- An array of python and binary add-ons
- iOS and Android remote controls
- Needed libraries
- Code upstreaming
- Company contacts
- Your own personal life
- ……..

Thank you for listening

All information and development can be found on

https://github.com/xbmc/xbmc
https://kodi.tv/
https://forum.kodi.tv/
http://kodi.wiki/