LVGL

Renesas Ready Ecosystem Partner Solution

LVGL Embedded UI Library

RENESAS PARTNER NETWORK READY

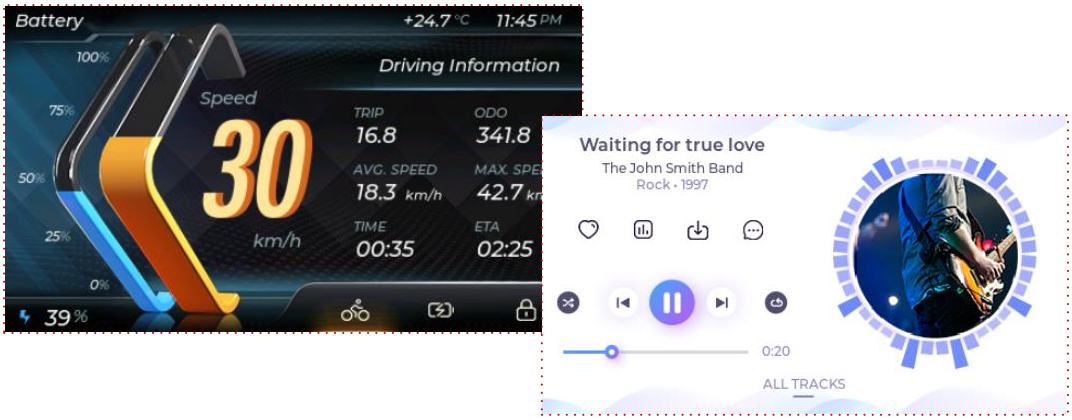
Solution Summary

Light and Versatile Graphics Library (LVGL) is the most popular free and open-source embedded graphics library to create beautiful User Interfaces (UIs) for any MCU, MPU and display type. It makes UI development easier with 30+ built-in widgets, anti-aliasing, animations, multi-language, including Arabic and Persian text, encoder, and keypad usage and more. LVGL provides built-in support for Renesas graphics accelerator and drawing engines, offloading the MCU/MPU during rendering. Support is available for the RA8P1, RA8D1, RA6M3, RX72N MCUs and the RZ/G2L, RZ/G2UL, RZ/A3M MPU evaluation kits and expanding to suitable RA, RX MCU Families and RZ MPU Family.

Features/Benefits

- Full featured – 30+ built-in widgets, powerful style and layout system, typography support for many languages
- Free and Popular – Distributed under MIT license and free for commercial projects, is downloaded every minute from GitHub
- Any device, OS, display – For any microcontroller, processor and (RT)OS to drive OLED, ePaper, and TFT displays or monitors
- Services – Worry-free UI development via consulting, design and implementation services

Diagrams/Graphics



Target Markets and Applications

- Internet of Things (IoT) devices
- Wearable technology
- Home automation and smart devices
- Medical and healthcare applications
- Industrial control systems
- Consumer electronics
- Point-of-sale (POS) terminals
- Kiosks

http://www.lvgl.io/boards

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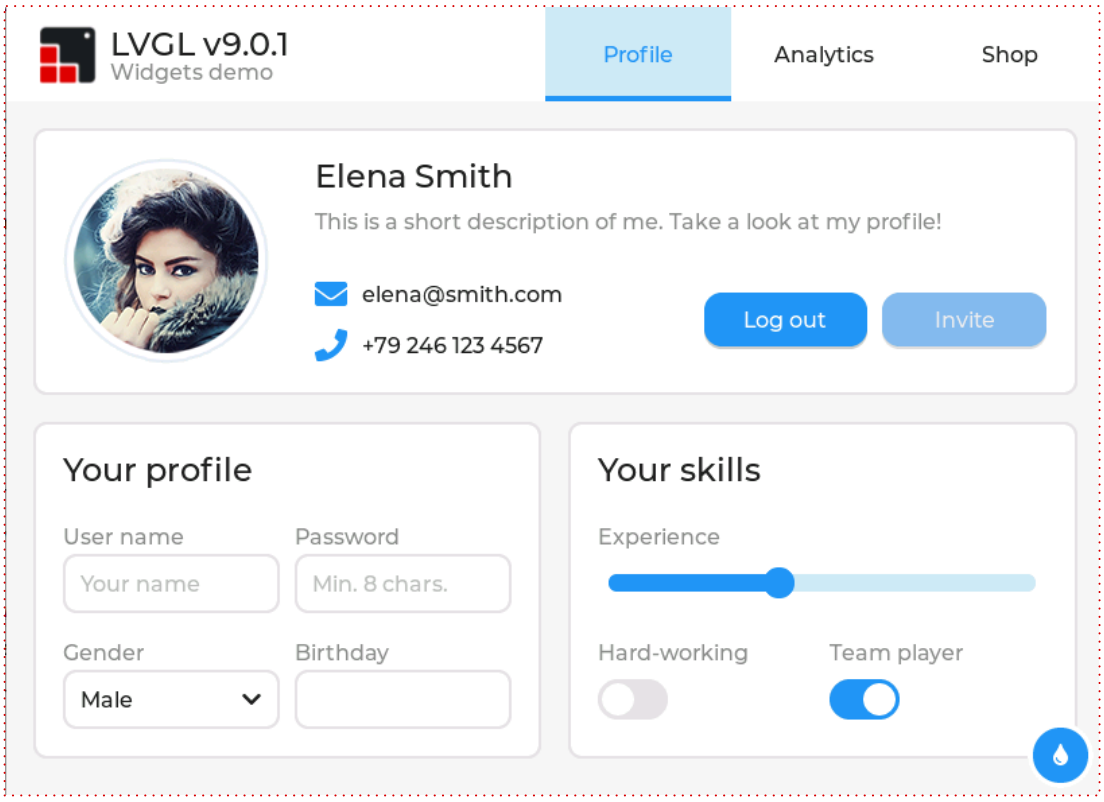
LVGL

- **Many Widgets** LVGL comes with 30+ built in widgets, such as Arc, Bar, Calendar, Chart, Checkbox, Drop-down list, Keyboard, Meter, Message box, Switch, Table, Tabview, Text area.
- **Rendering features:** LVGL comes with powerful software render engine which can draw anti-aliased widgets, and vector graphics using minimal resources. The GPUs can work together effectively with software rendering.
- **Powerful styles**: Choose from 100+ CSS inspired style properties to style the widgets run-time, change theme, or animate the style properties.
- **Responsive layouts**: Use web inspired Flexbox and Grid layout engines to position the widgets automatically in a responsive way.
- **Fonts and texts:** By supporting UTF-8 encoding, Right-to-Left writing systems, and translations, localizing the UI is not an issue.



Minimal requirements

- **Clock speed**: > 64MHz
- **RAM**: 4kB + 150byte / widget (~48kB for a UI with a few screens)
- **Flash**: ~100kB for LVGL (depends on the enabled features)
- **Draw buffer**: > 1/10 screen size buffer for rendering
- **Frame buffer**: at least 1 frame buffer in a display controller, internal- or external RAM
- **Compiler**: C99 or higher
- **Build system**: LVGL has no external dependencies. Just copy it into your project and compile it with the other files of your project