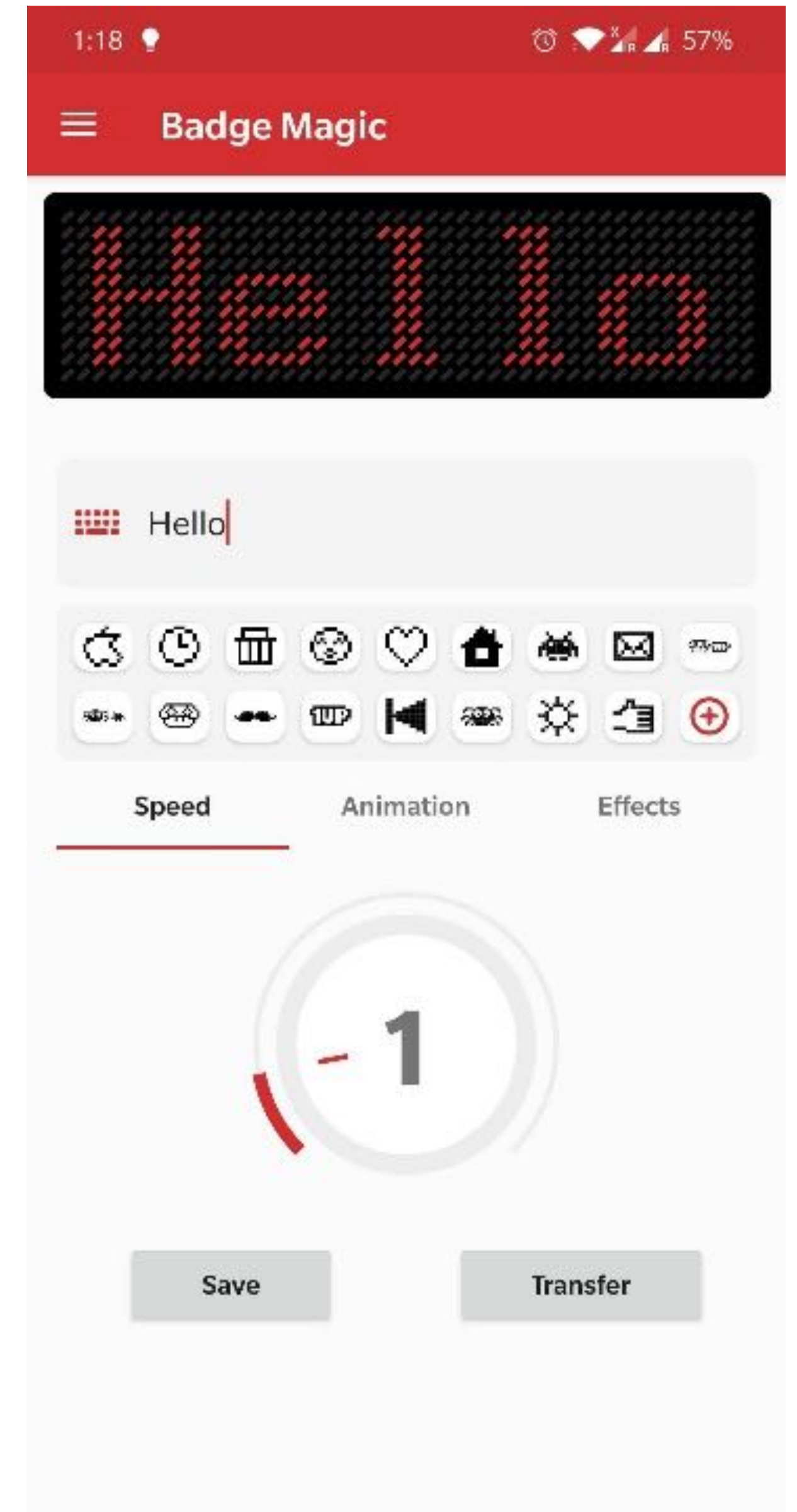


Idea

BadgeMagic for LinuxMobile

- App for Linux Mobile
- Program LED Name Badges via Bluetooth
- Template: BadgeMagic (Android)



BitBlink

Bluetooth

BitBlink

1. Get Bluetooth adapter
2. Scan for devices
3. Connect Badge (name contains "LSLED")
4. Discover Services
5. Find the right Service by the characteristics UUID
6. Send 32 hexadecimal figures per write request
7. Disconnect badge
8. Smile 😊

Bluetooth

BitBlink

Package Start

```
77616E670000010108000000000000000000000000  
000500000000000000000000000000000000000000  
00000000000002307010938310000000000000000  
000000000000000000000000000000000000000000  
00386CC6C6FEC6C6C6C6C6000000000000000000
```

Bluetooth

BitBlink

Flashing

[illegible]

Bluetooth

BitBlink

Marquee

[illegible]

BitBlink

[illegible]

Bluetooth

BitBlink

Size

77616E6700000101080000000000000000

00050000000000000000000000000000

0000000000000230701093831000000000

00

00386CC6C6FEC6C6C6C60000000000000000

Bluetooth

BitBlink

Timestamp

77616E6700000101080000000000000000

00050000000000000000000000000000

000000000000002307010938310000000000

00000000000000000000000000000000

00386CC6C6FEC6C6C6C60000000000000000

Bluetooth

BitBlink

Separator

77616E6700000101080000000000000000

00050000000000000000000000000000

0000000000000230701093831000000000

0000000000000000000000000000

00386CC6C6FEC6C6C6C60000000000000000

Bluetooth

BitBlink

Text + Inversion

77616E6700000101080000000000000000

000500

0000000000000230701093831000000000

00

00386CC6C6FEC6C6C6C6C600000000000000

Bluetooth

BitBlink

Text + Inversion

| | | |
|-------|----------|----------------------------|
| 0x00: | 00000000 | 00000000 |
| 0x38: | 00111000 | 00 111 000 |
| 0x6C: | 01101100 | 0 11 0 11 00 |
| 0xC6: | 11000110 | 11 000 11 0 |
| 0xC6: | 11000110 | 11 000 11 0 |
| 0xFE: | 11111110 | 1111111 0 |
| 0xC6: | 11000110 | 11 000 11 0 |
| 0xC6: | 11000110 | 11 000 11 0 |
| 0xC6: | 11000110 | 11 000 11 0 |
| 0xC6: | 11000110 | 11 000 11 0 |
| 0x00: | 00000000 | 00000000 |

77616E67000001010800000000000000
00050000000000000000000000000000
00000000000023070109383100000000
00000000000000000000000000000000
00386CC6C6FEC6C6C6C6000000000000

Bluetooth

BitBlink

```
pub fn letter_to_hex(c: char) -> &'static str {  
    let b : &str = match c {  
        '0' => "007CC6CEDEF6E6C6C67C00",  
        '1' => "0018387818181818187E00",  
        '2' => "007CC6060C183060C6FE00",  
        '3' => "007CC606063C0606C67C00",  
        '4' => "000C1C3C6CCCFE0C0C1E00",  
        '5' => "00FEC0C0FC060606C67C00",  
        '6' => "007CC6C0C0FCC6C6C67C00",  
        '7' => "00FEC6060C183030303000",  
        '8' => "007CC6C6C67CC6C6C67C00",  
        '9' => "007CC6C6C67E0606C67C00",  
  
        'a' => "00000000780C7CCCCC7600",  
        'b' => "00E060607C666666667C00",  
        'c' => "000000007CC6C0C0C67C00",  
        'd' => "001C0C0C7CCCCCCCCC7600",  
        'e' => "000000007CC6FEC0C67C00",  
        'f' => "001C363078303030307800",  
        'g' => "00000076CCCCCC7C0CCC78",  
        'h' => "00E060606C76666666E600",  
        'i' => "0018180038181818183C00",  
        'j' => "0C0C001C0C0C0C0CCCCC78",  
        'k' => "00E06060666C78786CE600",
```

Bluetooth

BitBlink

Padding

[illegible]

Storage

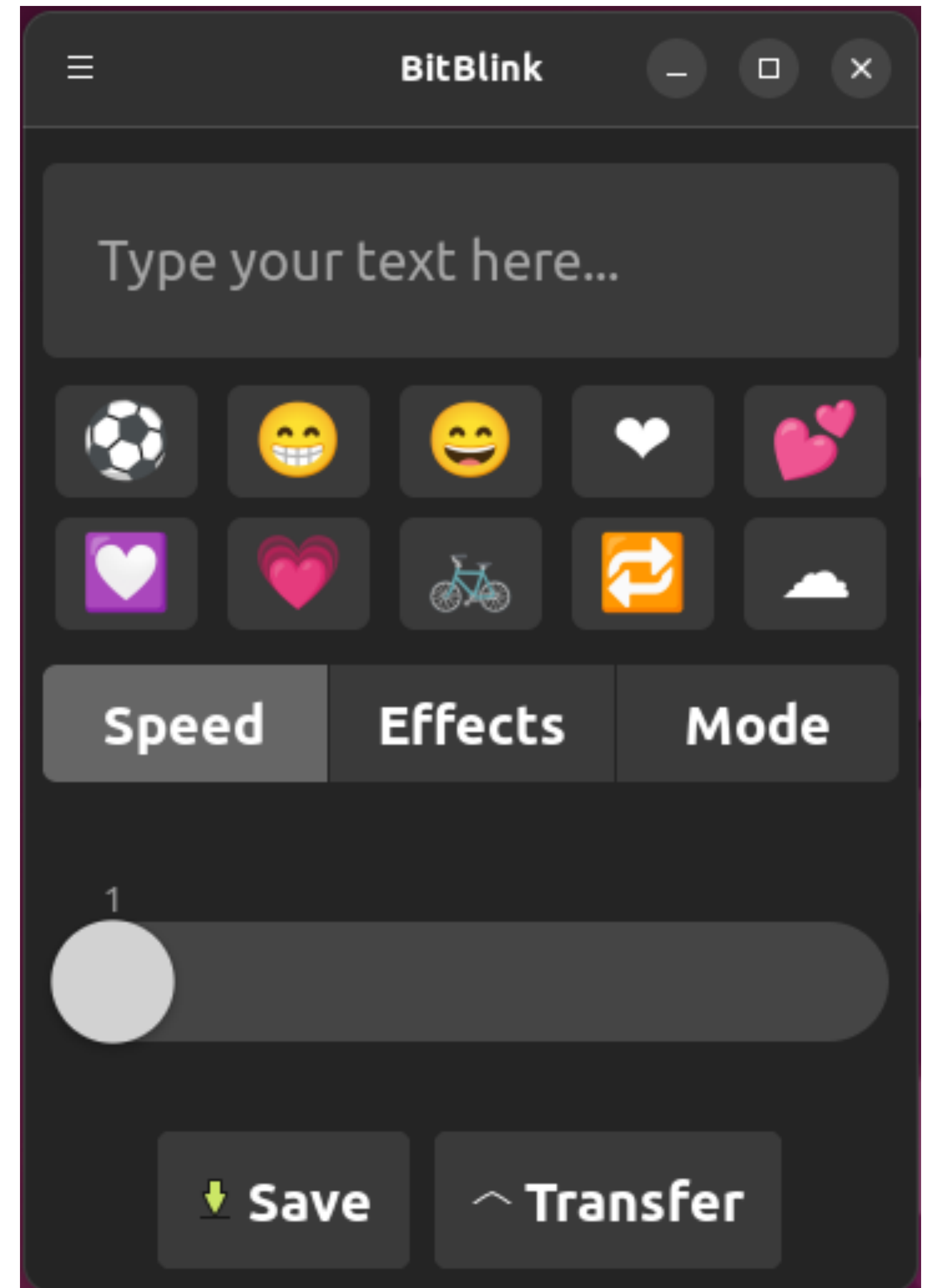
BitBlink

- Save already designed messages in subdirectory
- Save as JSON using ***serde*** crate
- Stored as hex-string

User Interface

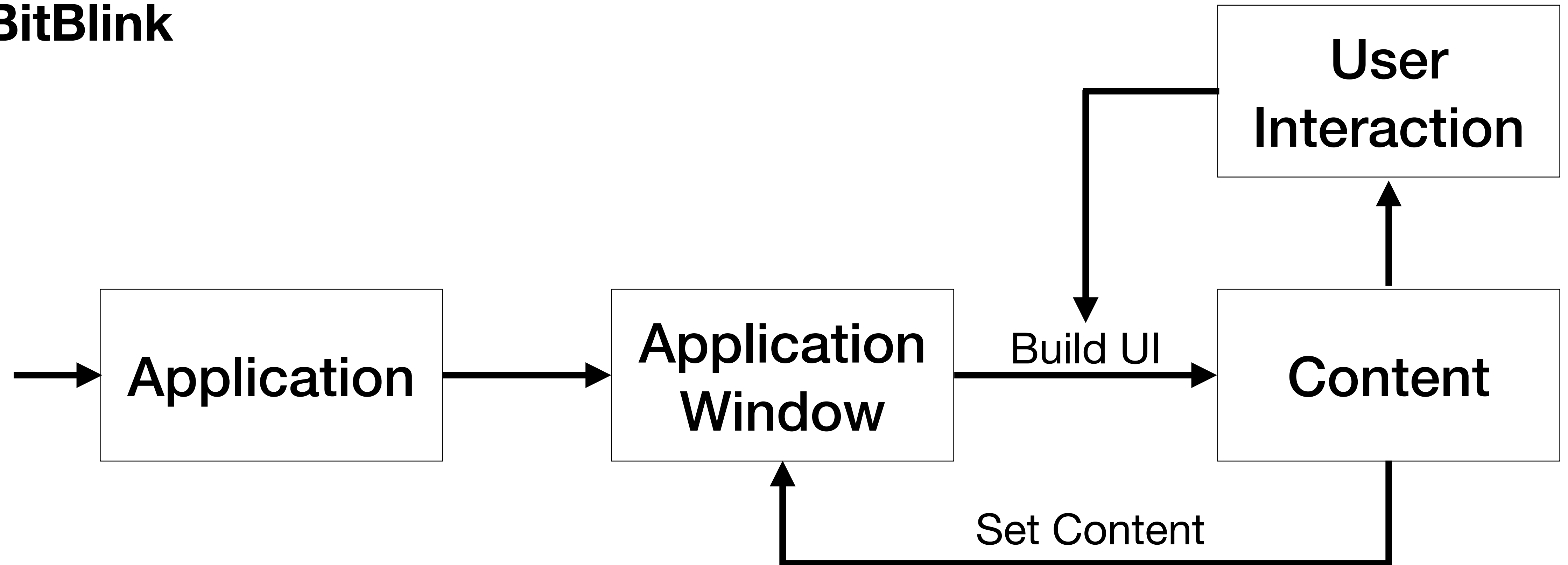
BitBlink

- GTK4 with Rust Binding (Gtk-rs)
- Libadwaita as design language
- CSS for styling



User Interface

BitBlink



User Interface

BitBlink

```
#[tokio::main]
async fn main() {
    gtk::init().expect(msg: "Failed to initialize");
    let application : Application = Application::builder()
        .application_id("com.bit_blink") : ApplicationBuilder
        .build();
    application.connect_startup(|_| ui::load_css());
    application.connect_activate(f: show_window);
    application.run();
}

fn show_window(application: &Application) {
    let app_window : Box<ApplicationWindow> = boxed::Box::from(t: window::create_window(app: &application));
    ui::build_ui(
        app_window: Box::<ApplicationWindow>::leak(b: app_window),
        message: None);
}
```

User Interface

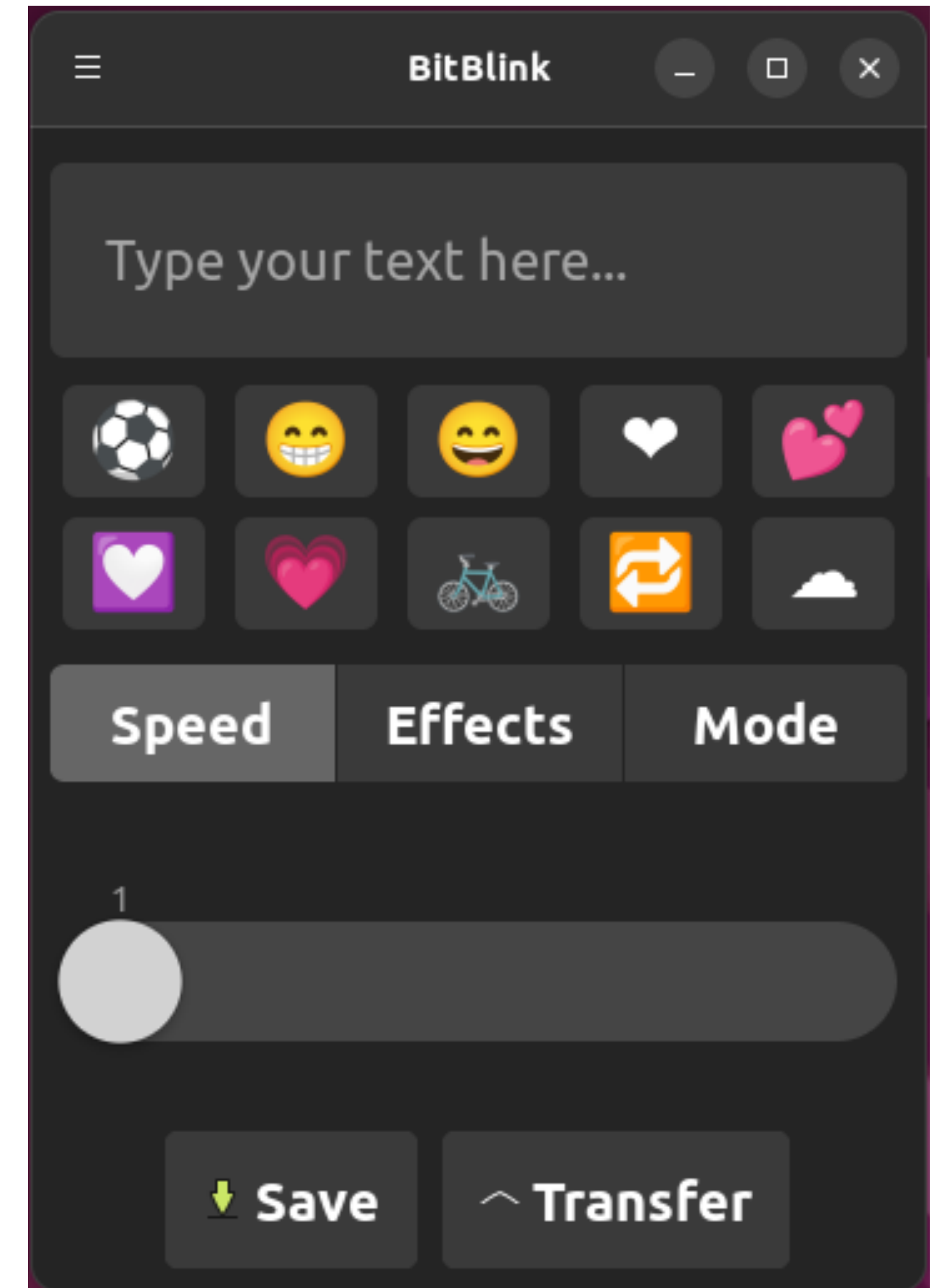
BitBlink

```
for button : &Button in delete_buttons {  
    let storage : Storage = build_storage();  
    button.connect_clicked(move |button : &Button| {  
        storage.delete_badge( f_name: &button.css_classes().last().unwrap().to_string());  
        build_ui(app_window, message: None);  
    });  
}  
  
app_window.set_content(Some(&content));  
app_window.show();
```

Feature Roadmap

BitBlink

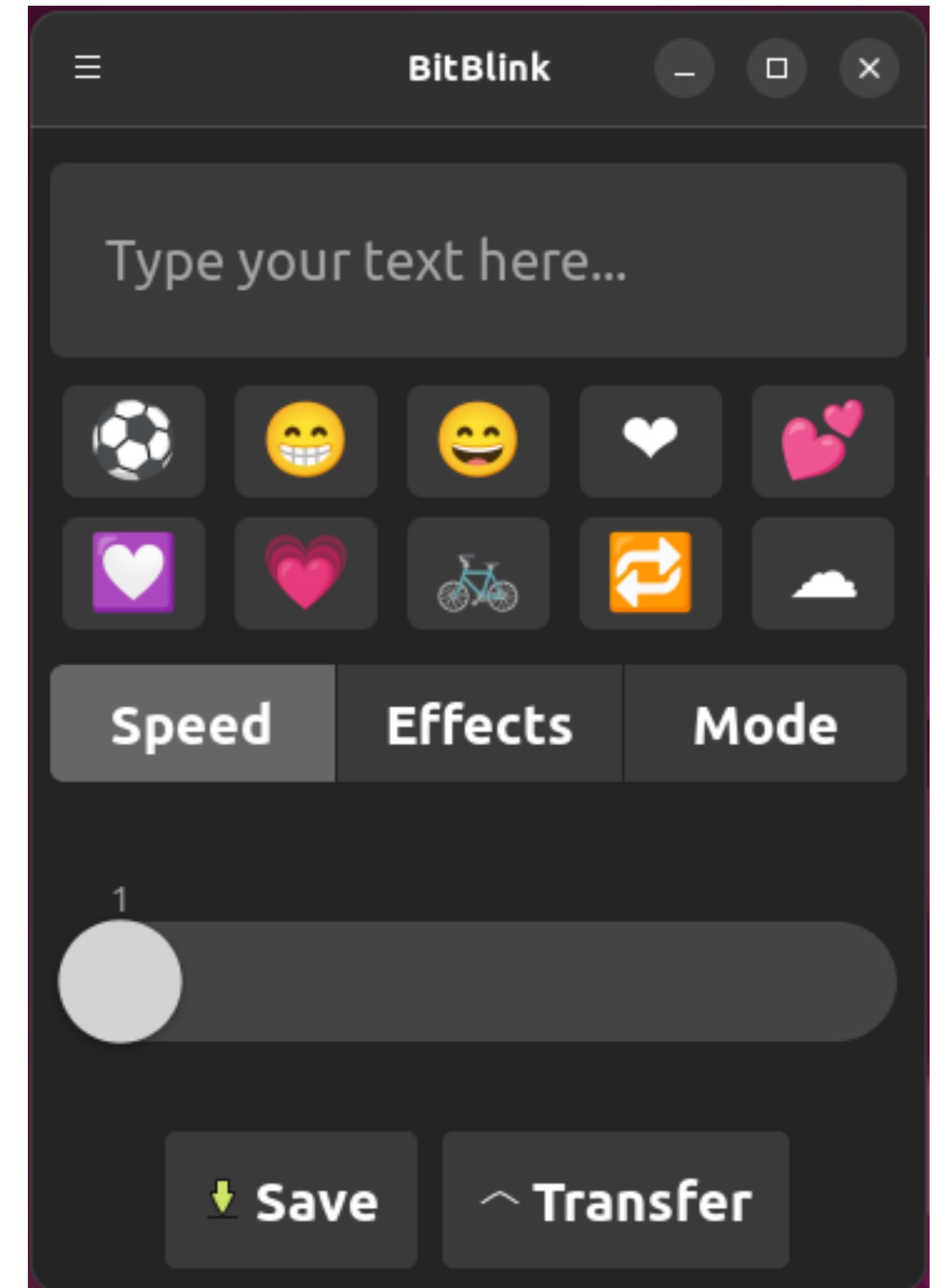
- ❑ Tier 0 (Must Have): Send Text via Bluetooth, Adjust Speed etc., save banners
- ❑ Tier 1: Add predefined images to banner
- ❑ Tier 2: Extend functionality to USB, make the App cross-platform: macOS, Windows
- ❑ Tier 3: Add custom clipart, convert images
- ❑ Tier 4: Share your banners, UI Improvements Animations



Feature Roadmap

BitBlink

- ☒ Tier 0 (Must Have): Send Text via Bluetooth, Adjust Speed etc., Save Banners
- ☐ Tier 0.5: Send multiple messages (COMING SOON!)
- ☒ Tier 2: Make the App cross-platform: macOS



Other TO-DOs

BitBlink

- ☒ Basic Packaging and Transfer with pmbootstrap
- ☐ Improve Packaging (e.g. with Flatpak)
- ☐ Display as „real“ App with Icon
- ☐ Share on <https://linuxphoneapps.org>

**Feel free to
contribute 🤔**

https://github.com/JoGehring/bit_blink.git