Hare community meet-up

aka State of the Bunny Address

January 25, 2023

Where are we?

- **Website**: https://harelang.org
- **IRC**: #hare and #hare-dev on Libera Chat
- **Mailing lists**: https://sr.ht/~sircmpwn/hare/lists
- **Meatspace**: Literally in this room *right now*

State of affairs

- 80 contributors
- Language is relatively stable
- Standard library is getting there
- Extended library needs work
- Ecosystem needs work

Compiler work

Confirmed improvements ongoing or recently completed:

- Tagged union overhaul (led by Ember)
- Mutability overhaul (led by Sebastian)
- Type inference for globals
- @packed, @threadlocal, @inline
- ASan

Tagged union overhaul

- Match on pointers to tagged unions
- Better tagged union cast semantics
- Similar improvements to is, as, etc

Mutability overhaul

- Hot proposal fresh off the mailing list
- const $\rightarrow$ let, let $\rightarrow$ let mut
- Prepare to rewrite your code

Memory safety research

We *did* promise to research this issue :)

- Research and prototyping for linear types is underway
- ASan proof-of-concept works

Standard library

- New test driver
- Date/time improvements
- math::complex
- strings::template
- Many, many bug fixes and small improvements

Cryptography

- New stuff: big integers, RSA initial commit, HKDF, moar AES
- Next stuff: moar RSA, D-H, TLS
- Please help!
- Donate for a future independent audit:

https://opencollective.com/hare/projects/cryptography-audit

Ports

Works in progress:
- OpenBSD, NetBSD
- Helios
- Third-party macOS port

Help wanted:
- ppc64
- 32-bit platforms (x86, arm32, riscv32)

Extended library

Help needed for extlib projects in the following areas!

- Compression algorithms
- Image formats
- Network protocols: IRC, SSH, MQTT, etc
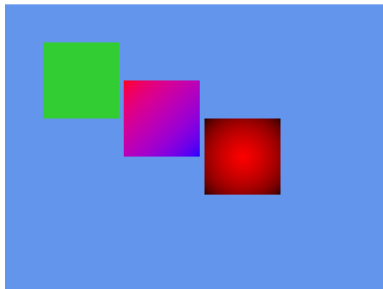- Email stack (SMTP, IMAP, message dec/encoder)
- SQL support

https://harelang.org/extended/

Project showcase: haredo

A build automation tool, similar to make(1) and redo(2), by Autumn.
https://sr.ht/~autumnull/haredo/

```
$ cat bin/haredo.do
if haredo ++ ../src/*
then
        $HARE build -o $3 ../src
fi
```

Project showcase: hare-vec

Vector graphics library for Hare, ala Cairo. First steps towards Hare-native GUI stack —
see also hare-wayland and pixbuf!


```
https://git.sr.ht/~sircmpwn/hare-vec
https://git.sr.ht/~sircmpwn/hare-wayland
https://git.sr.ht/~sircmpwn/pixbuf
```
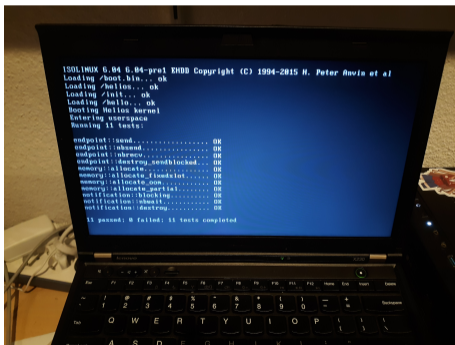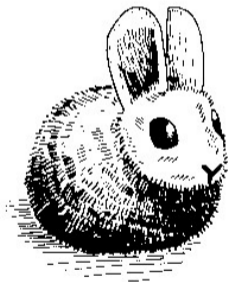
Project showcase: Helios

A micro-kernel written in Hare. Supports x86_64 and aarch64, with riscv64 coming soon.
Full-length Helios talk at 13:00 tomorrow in H.1308 (Rolin)

https://sr.ht/~sircmpwn/helios

Floor's open

What are your thoughts about Hare?

`https://harelang.org`