

Sign Up

This study is part of a research project to understand how users interact with LiquidHaskell, the most mature implementation of Liquid Types, and what are the barriers people find in using them. Liquid Types extend the type system of a programming language with logical predicates that are verified at compile-time to improve software reliability. In LiquidHaskell, the predicates are introduced to the Haskell type system. However, Liquid Types are still not widely popular which leads us to believe that there might be several barriers to learning and using them. In this project, we aim understand what these barriers are, to find ways to mitigate them and improve the usability of Liquid Types not just in Haskell but also in other target languages.

The study is being conducted by a joint team from Carnegie Mellon University and University of Lisbon. If you have any questions or concerns, you can contact the study's principal investigator Catarina Gamboa (cgamboa@andrew.cmu.edu).

All responses to this questionnaire will be anonymized, and the treatment of the information obtained will be used only and exclusively in the context of the referred research.

* Indicates required question

1. In which category do you fit in? *

Mark only one oval.

☐ I am currently using LiquidHaskell in a non-confidential project.

Skip to question 2

☐ I have used LiquidHaskell in the past but do not use it anymore.

Skip to question 5

☐ I am familiar with Haskell but not with LiquidHaskell. *Skip to question 7*

Current Users - Currently using LiquidHaskell

This section aims to inform you of the study contents and procedure before you sign-up for it.

Study Configuration

In this study, you will be able to share your insights and work on LiquidHaskell in one of your current non-confidential LiquidHaskell projects.

During the session we will ask you to show a project you are currently working on and, during the session develop a feature you are currently implementing while thinking aloud and answering clarification questions the interviewer might ask while observing your process.

At the end, we will conduct a small interview with questions related to LiquidHaskell and liquid types in general.

This session should last about 1 hour and can be accomplished in person at CMU or over zoom. There is a 10\$ Amazon Gift Card compensation after completing the session.

2. Are you currently working on a project with LiquidHaskell that you can show for the study purposes?

Mark only one oval.

☐ Yes

☐ No

3. What is your current occupation?

Mark only one oval.

☐ Developer in Industry

☐ Faculty Member

☐ Graduate Student

☐ Undergraduate Student

☐ Other: _____

4. How long have you been using LiquidHaskell?

Mark only one oval.

- ☐ Less than 1 year
- ☐ 1-3 years
- ☐ More than 3 years

Skip to question 11

Former Users - Has used LiquidHaskell but does not use currently

This section aims to inform you of the study contents and procedure before you sign-up.

Study Configuration

In this study, you will be asked to participate in an interview and share your experiences with LiquidHaskell.

We will ask you to show previous non-confidential projects if you are able to, otherwise, we will ask you to just recall a previous project or exercise in which you used LiquidHaskell.

This session should last about 40 minutes and can be accomplished in person at CMU or over zoom. There is a 10\$ Amazon Gift Card compensation after completing the session.

5. Would you be able to share previous projects where you used LiquidHaskell during the interview?

Mark only one oval.

- ☐ Yes
- ☐ No

6. For background purposes, what is your current occupation?

Mark only one oval.

- ☐ Developer in Industry
- ☐ Faculty Member
- ☐ Graduate Student
- ☐ Undergraduate Student
- ☐ Other: _____

Skip to question 11

New Users - Familiar with Haskell but not with LiquidHaskell

This section aims to inform you of the study contents and procedure before you sign-up.

Study Configuration

In this study, you will be asked to complete a tutorial on LiquidHaskell, followed by the execution of exercises using the learned contents while you think aloud, and, finally, answer some interview questions.

The session should last around 2 hours and can be accomplished in person at CMU or over Zoom. There is a 20\$ Amazon Gift Card compensation after completing the session.

7. What is your current occupation?

Mark only one oval.

- ☐ Developer in Industry
- ☐ Faculty member
- ☐ Graduate Student
- ☐ Undergraduate Student
- ☐ Other: _____

8. How long have you been using Haskell?

Mark only one oval.

- ☐ Less than 1 year
- ☐ 1-3 years
- ☐ More than 3 years

For us to better understand your familiarity with Haskell, please answer the two coding questions below.

Aim to answer them without using any external resources (e.g., Google, ghci, ChatGPT). It is okay if you do not know the answer, you can just write your approach or leave it blank. Your answer will not exclude you from participating in the study.

9. Write below the type signature for ***reverse'***.

`reverse' [] = []`

`reverse' (x:xs) = reverse' xs ++ [x]`

10. Write a **data type** that represents a binary tree of any type.

Contact Information

This section aims to inform you of the study contents and procedure before you sign-up.

11. Name *

12. Email *

13. For data management purposes, what is your current location?

Mark only one oval.

☐ USA

☐ Outside of the USA

14. Location Preference *

Mark only one oval.

☐ In-Person (at CMU campus)

☐ Zoom

☐ Indifferent

15. **Insert two possible date/times for the study session between Sep 27th, and October 15th, 2024.**

*

Please include your timezone.

We will contact you by email to confirm the session schedule or propose a different time.

Therefore, you can expect a message from the PI (Catarina Gamboa: cgamboa@andrew.cmu.edu) sent to the address you provided above.

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