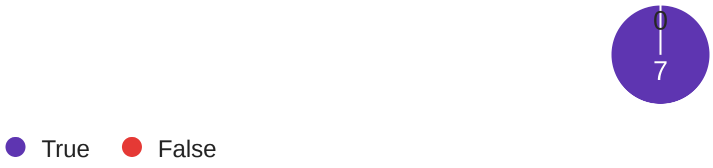
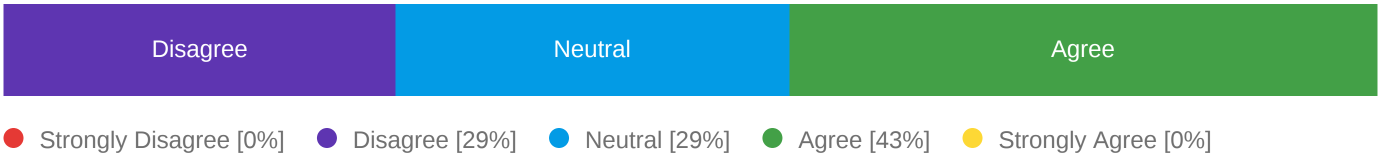
Partial AST

Finished Survey - 5 people

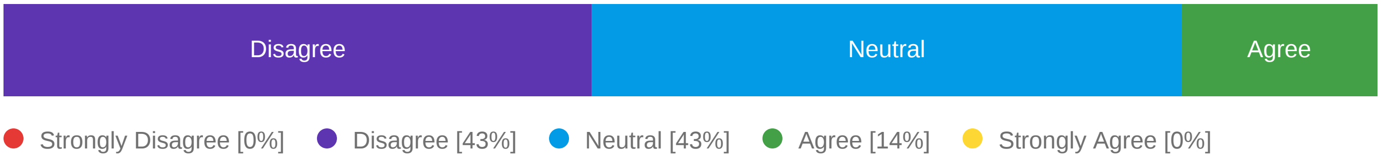


Visualization Usefulness

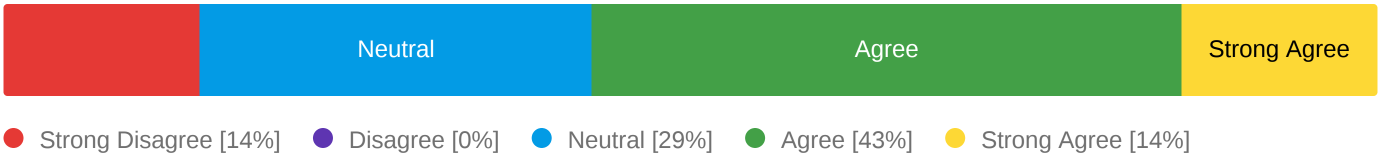
I think that I would like to use the visualization frequently.



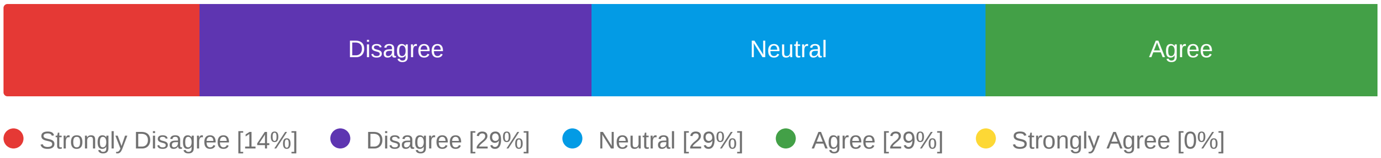
I found the visualization unnecessarily complex.



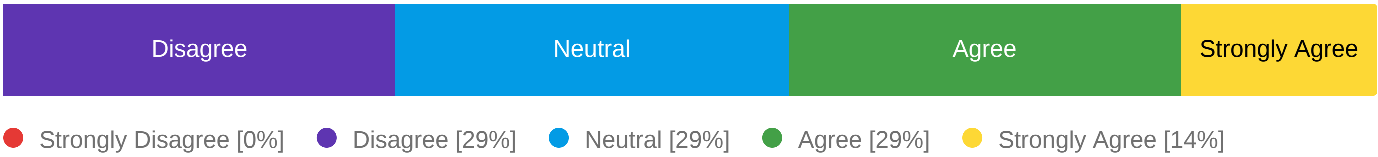
I thought the visualization was easy to read and use.



I thought the visualization was very cumbersome to read and use.

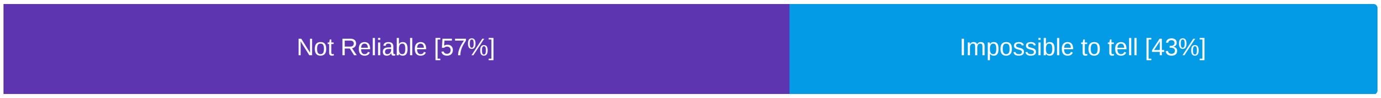


I thought the visualization was very useful for explaining the model's behavior.

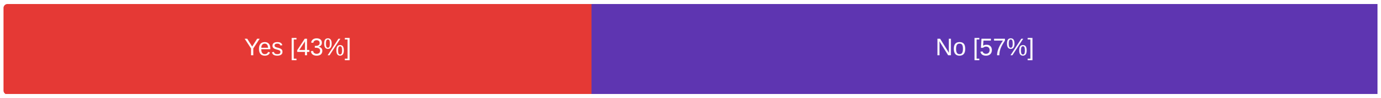


Model Performance

What is your perception of the reliability of the model in generating code?



Would you rely on the model to assist you in source code generation tasks?



Open Questions

What information from the visualization did you find useful in explaining the model's predictions?

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I mostly used the probabilities to inform which tokens were more unlikely to the model
being able to see the exact pattern of tokens for prediction was very useful for establishing the reliability of the model.
Seeing the confidence in the predictions could be a useful indicator of how strongly to trust given elements of the output, but not always.
Why the block of code is being predicted i.e., what led to the code being predicted.
The red/blue confidence coding was helpful. I really really wish I could go back and rewatch the explanation of how the visualization worked though, because I don't think I fully understand it (my bad for watching it with subtitles only) and I'm sure there's more helpful information encoded that I don't realize. Also the return blocks made sense.

In some specific cases, understanding what code element the model expected to see might help.

Sometimes the AST visualization gives some useful information on how the model predicts the next tokens. But in some cases I doubt it.

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Maybe some information on nearby tokens (i.e.: tokens with a slightly lower probability that the model also thought could come next)

n/a

The examples provided showed a large “block” of code as part of the structure of the prediction. In practice, I would want to look inside these blocks to view their internal elements.

Maybe alternative paths to with similar probability scores.

I'd like if the blocks with lots of tokens could be further broken down (since there's often structure within them, like if statements)

Not sure there any additional information would help.

I think better use some colors to make it easy to read. Eg. the Highest probability should be colour in Green while the least probability in red.

What elements of the visualization did you like most?

11. What elements of the visualization did you like most?

I liked the color scheme and spacing between objects

the token type pattern

The color-coded circles were particularly useful.

I think it was pretty neat. Would have been better if it was interactive.

Colors, and return statements (I understood those)

Probably the type of nodes associated with the text

Probability

What elements of the visualization did you like least?

12. What elements of the visualization did you like least?

This is probably because I have little familiarity with ASTs, but I didn't really get what got to be considered a token (sometimes ":" could be a token, sometimes a whole block could be a token--or maybe it was just abstracted into a block)

not much explanation for the block predictions

I felt that the screenshots provided still didn’t show me the whole picture, and I would likely need to spend time navigating these trees to find what I wanted unless some mechanism could help me find it.

No complaints.

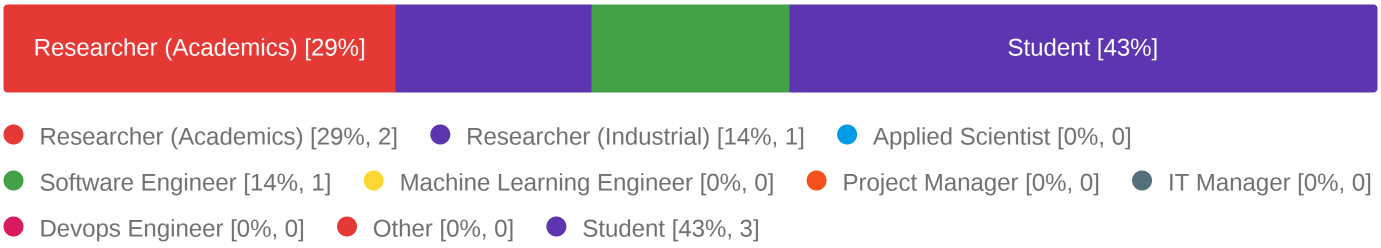
All the code crowded into one unanalyzed block

I have never actually used the probability

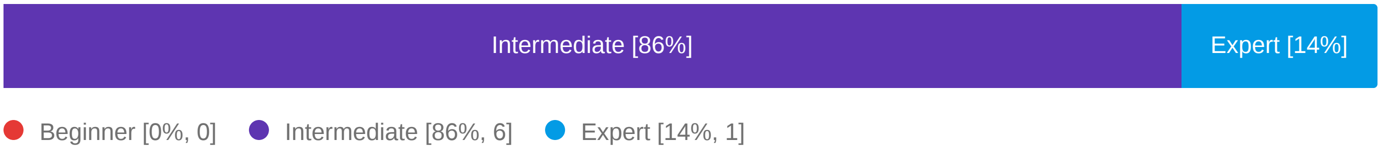
the font and the font size size

Demographics

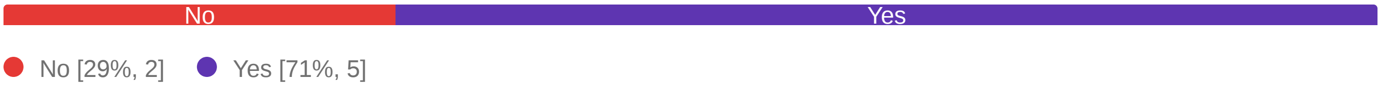
Q2 - demographics_02



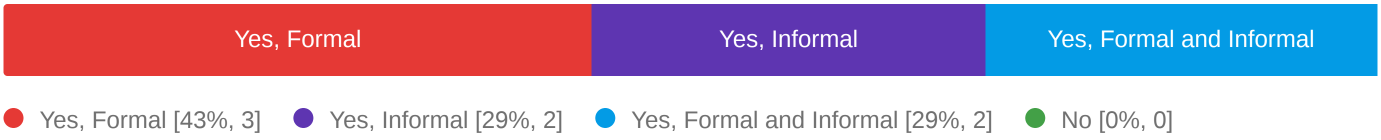
Q3 - 3. What is your level of expertise in python?



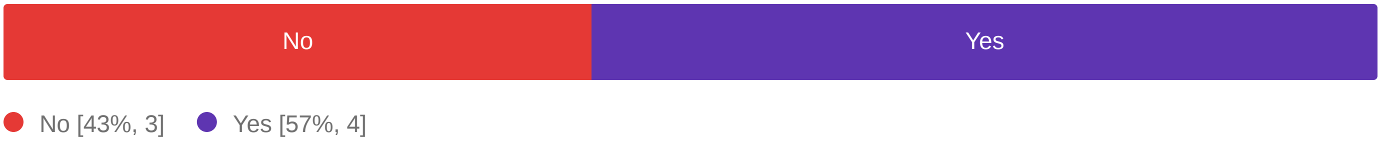
Q9 - 5. Are you familiar with Abstract Syntax Tree (AST) representations?



Q5 - 6. Do you have a background in machine learning? Formal (college classes, degree, certification) or informal (self-learning or other training)?



Q6 - 7. Have you used AI-assisted tools (e.g., Copilot or ChatGPT) or Large Language Models (e.g., CODEX or GPT) to aid in your programming?


No
Yes
● No [43%, 3]
● Yes [57%, 4]