



# MULTILINGUAL SOFTWARE ANALYSIS

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MLSA Research group

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Partially supported by grant DL-47359-15016 from Bloomberg L.P.

## MOTIVATION

Companies with a large software base:

- Have to manage software architectures and libraries
- By different developers (in & out house)
- Over many decades
- In different languages

## PROBLEM

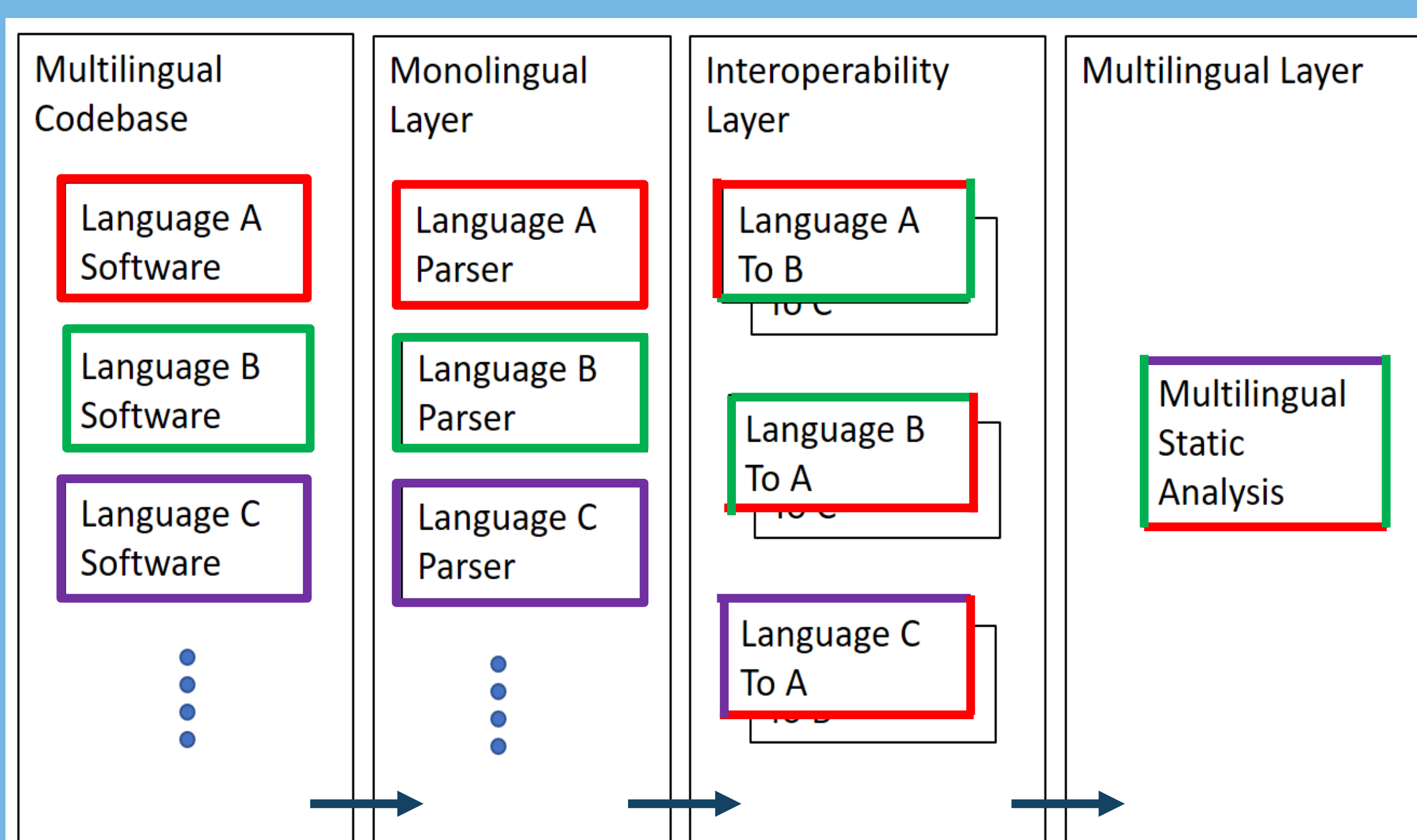
A multilingual codebase gives rise to many software engineering issues at **language boundaries**, including

- Redundancy
- Debugging complexity
- Security issues

**BUT Multilingual will always be with us!**

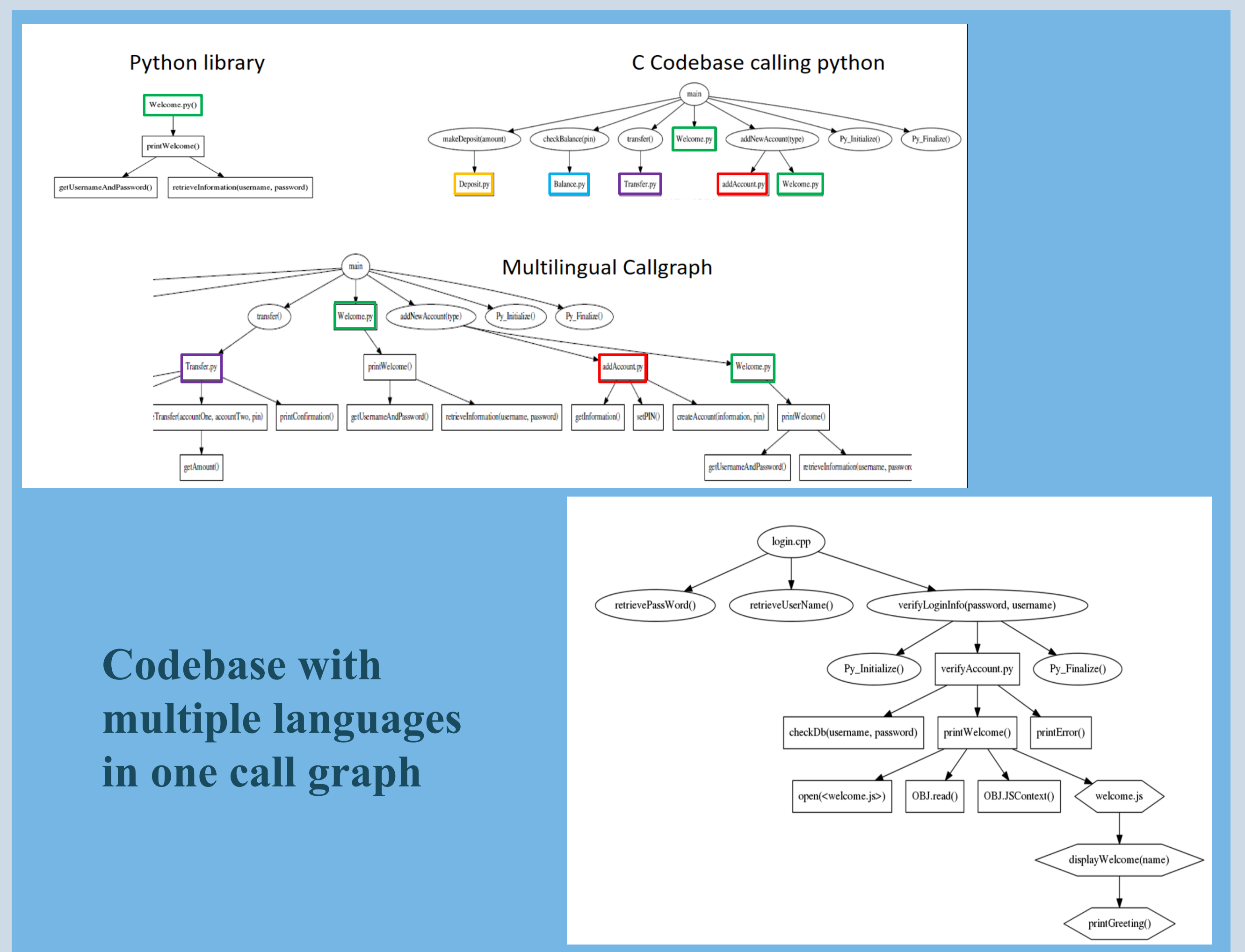
MLSA Research Group: 

Develop lightweight tools to process multilingual codebase into **unified common representations** such as call graphs, flowgraphs, etc.



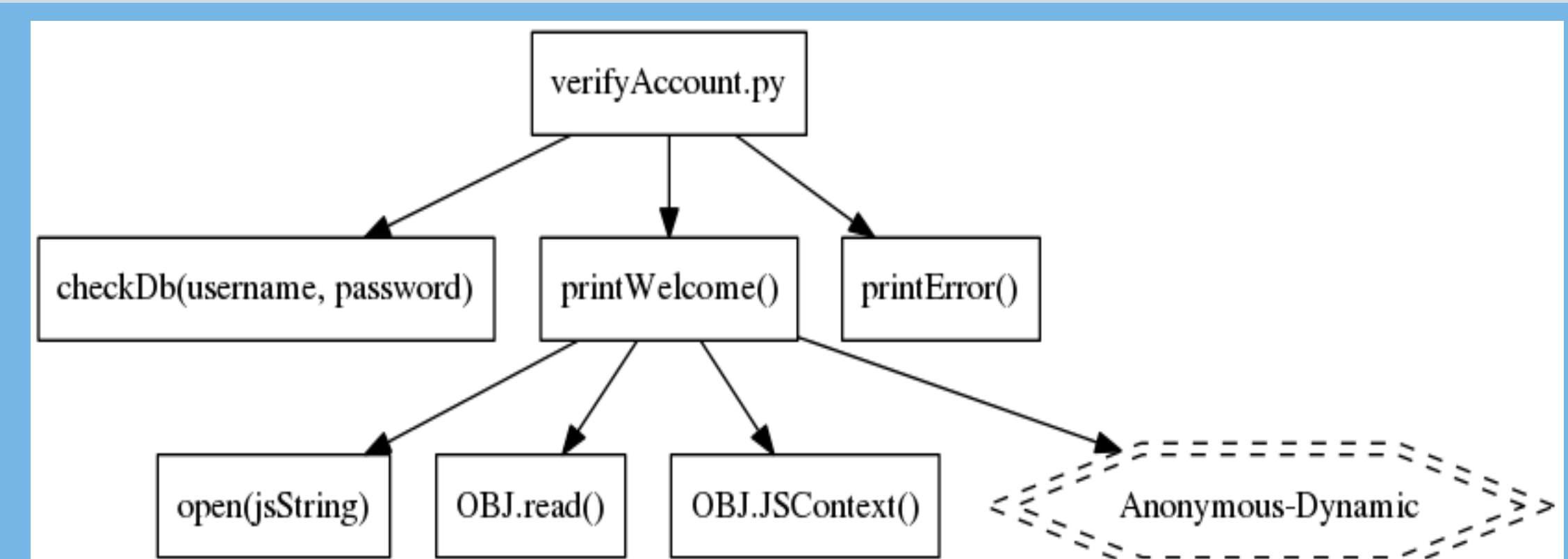
Open Source, Lightweight Architecture  
For Multilingual Software Analysis

## EXAMPLE

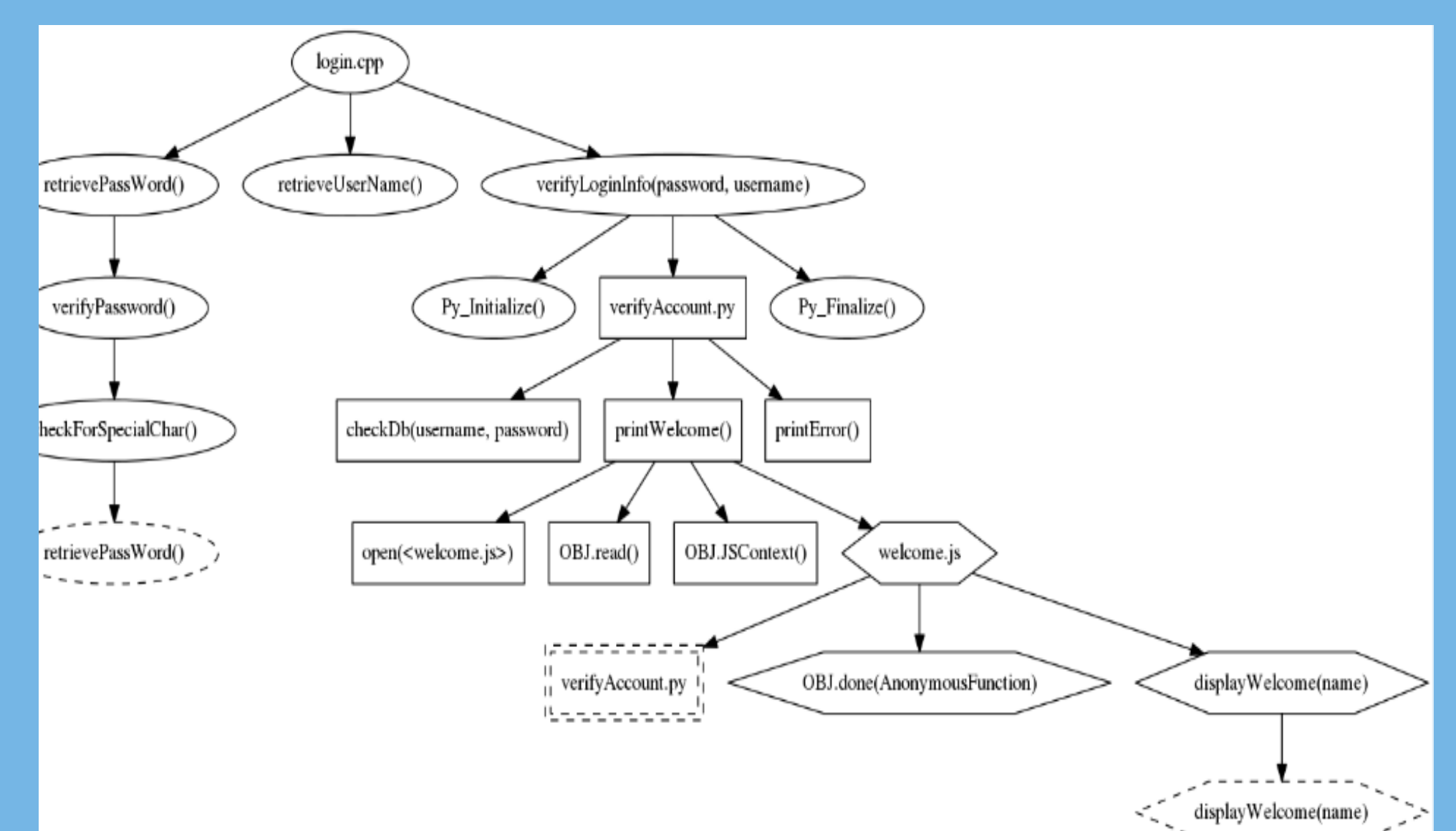


Codebase with  
multiple languages  
in one call graph

## Identifying Security Issues



Statically unresolved call from Python to JavaScript



Multilingual Call Graph with Circularity

## CONTACT

Looking for open-source collaboration

GitHub: <https://git.io/MLSA>

Email: [multilingualSA@gmail.com](mailto:multilingualSA@gmail.com)

Twiki: <https://goo.gl/6mvyNS>

YouTube: <https://goo.gl/g8ra15>