

Forth and IDEs

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Integrated Development Environment (IDE)

- Editor (aka IDE) is the hub
 - Invokes compiler
 - Processes error messages
 - Runs program
 - Debugging interface
 - Crossreferencing
- Language-specific: Smalltalk-80, Turbo Pascal (1983), HolonForth (1989)
- No choice of editor
- Cross-language: Eclipse, IntelliJ IDEA, Visual Studio Code
- Gforth supports Emacs (and vi) as IDE

Language Server Protocol (LSP)

- Interface between language systems and IDEs
- Traditional development: $O(|\text{languages}| \times |\text{IDEs}|)$
- LSP development: $O(|\text{languages}| + |\text{IDEs}|)$
- Editor choice: any editor that supports LSP
- Future work: Add LSP support to Forth systems

Traditional Forth approach

- Forth command line is the hub
- Show source code of word
or edit it with *your favourite* editor
- Load program
- Run program
- Debugging
- Crossreferencing
- Documentation
- Show generated code
- Show other system state

Demo

Implementation Cost

64-bit Gforth right after startup

	size (KB)
dictionary	548
native code	751
locate	32
where	619
backtrace	548

Conclusion

- Many languages: editor as hub
- Forth: command line as hub
works with your favourite editor
- locate
where
backtrace
help
see
- also covers system code