

# COS333 Practical 1

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## **1 Research Questions**

## **2 Implementation Questions**

### **3 Research Questions**

1. A computer programming language designed to experiment with weird ideas. They may be difficult to program in and are often created with a specific goal in mind (As a joke, to explore concepts, to be 'artistic', etc.)
2. Useful contributions of esoteric programming languages:
  - Test the boundaries and possibilities of a programming concept
  - Acts as a challenge for programmers
  - Can teach programming concepts minimally (like Turing completeness)
  - Exploring language design and minimalism
3. CHOSEN ESOTERIC LANGUAGES (WHITESPACE, INTERCAL)

Hello world in Whitespace (The following source code is for a Whitespace "Hello, world!" program. For clarity, it is annotated with S, T and L before each space, tab, and linefeed.)

```
S S S T S S T S S S L:Push_+1001000=72='H'_onto_the_stack
T L
S S :Output_-'H';_S S S T T S S T S T L:Push_+1100101=101='e'_onto_the_stack
T L
S S :Output_-'e';_S S S T T S T T S S L:+1101100=108='l'
T L
S S S S S T T S T T S S L:+1101100=108='l'
T L
S S S S S T T S T T T T L:+1101111=111='o'
T L
S S S S S T S T T S S L:+101100=44=','
T L
S S S S S T S S S S S L:+100000=32=Space
T L
S S S S S T T T S T T T L:+1110111=119='w'
T L
S S S S S T T S T T T T L:+1101111=111='o'
T L
S S S S S T T T S S T S L:+1110010=114='r'
T L
S S S S S T T S T T S S L:+1101100=108='l'
T L
S S S S S T T S S T S S L:+1100100=100='d'
T L
S S S S S T S S S S T L:+100001=33='!'
T L
S S :Output_-'!';_L
L
L:End_the_program
```

The following is a "Hello, world!" program in INTERCAL.

```
DO ,1 <- #13
PLEASE DO ,1 SUB #1 <- #238
DO ,1 SUB #2 <- #108
DO ,1 SUB #3 <- #112
DO ,1 SUB #4 <- #0
DO ,1 SUB #5 <- #64
DO ,1 SUB #6 <- #194
DO ,1 SUB #7 <- #48
PLEASE DO ,1 SUB #8 <- #22
DO ,1 SUB #9 <- #248
DO ,1 SUB #10 <- #168
DO ,1 SUB #11 <- #24
DO ,1 SUB #12 <- #16
DO ,1 SUB #13 <- #162
PLEASE READ OUT ,1
PLEASE GIVE UP
```

## 4 Implementation Questions

### References

- [1] Jeremy Singer and Steve Draper. Let's Take Esoteric Programming Languages Seriously. In *Proceedings of Onward! '25*, 2025. <https://dl.acm.org/doi/10.1145/3759429.3762632>
- [2] Daniel Temkin. *Forty-Four Esolangs: The Art of Esoteric Code*. MIT Press, 2025. <https://mitpress.mit.edu/9780262553087/forty-four-esolangs/>
- [3] Daniel Temkin. Esoteric Programming Languages: A Unique Challenge. IEEE Spectrum, September 2025. <https://spectrum.ieee.org/esoteric-programming-languages-daniel-temkin>  
[https://en.wikipedia.org/wiki/Whitespace\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/Whitespace_(programming_language)) <https://en.wikipedia.org/wiki/INTERCAL>