

Propositional Abstraction

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o.o Introduction

We take *propositional abstraction* to be the process of “wrapping” any statement in an n -order predicate logic where $n > 0$ or any *declarative expression* expressed in the *indicative mood* into a suitable data structure like JSON equipped with a truth-evaluation through a controlled semantics.

Propositional abstraction example implemented in JSON format:

```
var propAbstractExample = {
  'truth-value': true,
  'semantics': {
    'cat': 'hat',
    'silly': 'billy',
    'control': {
      'ignore': 'cat'
    }
  },
  'assertion': {
    'silly': 'billy'
  }
}
```

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The semantics can be contained internally with respect to the proposition so abstracted or it can reside externally.

Which of these are preferred depends on use-case. For example, if modularity and independence are required we can stick the semantics right into the data structure. This allows each proposition so abstracted to contain different semantics.

We can then extract the truth-values to perform basic logical operations - and between two or more semantics.

1.0 Appendix

Originally Posted at: <http://www.postlib.com/propositional-abstraction/>