Computer Science Team Week 9

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Fun coding problems

Theme: LISP!

Problem Negativity

Problem Negativity LISP has a function called `NEG` which checks if a number is less than zero. Implement this function from scratch.

```python
def neg(
    num: float
) bool
```

Example

```
assert neg(
    1
) == False
```

Problem List Lists in LISP are written inside parentheses. A single parenthetical represents a single element. Given a LISP list, return its length.

```python
def list_length(
    list: str
) -> int
```

Example

```
assert xor(
    '(1 (easy peezy) lemon 32)'
) = 4
```

Problem caddadaar The two most famous LISP functions are CAR and CDR (pronounced: could-er), named after registers of a now long-forgotten IBM machine on which LISP was first developed. The function (CAR x) returns the first item of the list x (and x must be a list or an error will occur); (CDR x) returns the list without its first element (again, x must be a list). (CAADDAR x) is a shorthand for (CAR (CAR (CDR (CDR (CAR x)))).

```
def caddadaar(
    func: str,
    list: str
) -> list[str]
```

Example

```
assert caddadaar(
    'CADR',
    '(1 (easy peezy) lemon 32)'
) == '(easy peezy)'
```

The End

Questions? Comments? Remarks?
Considerations? Confusions?