Project Specification

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0.1 Minimal Formal Grammar

```
<expr> ::= <emotion> <animal> wearing <outfit> <shoes> and <accessory>

<emotion> ::= happy | neutral | sad | mad | tired

<animal> ::= <color> bunny
           | <color> cat
           | <color> frog
           | <color> bear

<outfit> ::= <top> and <bottom>
           | <color> suit
           | <color> dress

<top> ::= <color> shirt
        | <color> sweater
        | <color> hoodie

<bottom> ::= <color> pants
           | <color> shorts
           | <color> skirt

<shoes> ::= <color> sneakers
          | <color> cowboy boots
          | <color> combat boots
          | <color> heels
          | <color> slippers

<accessory> ::= <color> flower
              | <color> star
              | <color> glasses
              | <color> sunglasses
              | <color> scarf
              | <color> gloves

<color> ::= red | orange | yellow | green | blue | purple | pink |
            black | white | grey
```

0.2 Minimal Semantics

The combining forms in our language include any elements that are composed of ⟨color⟩ followed by a string (such as ⟨animal⟩, ⟨outfit⟩, ⟨top⟩, ⟨bottom⟩, ⟨shoes⟩, ⟨accessory⟩) as well as ⟨outfit⟩ when it is composed of ⟨top⟩ and ⟨bottom⟩. Each of these combined forms and each of the emotions will correspond to a separate PNG in our library of PNGs, and each of these PNGs will be stacked to form a final PNG, which will be returned to the program user. The ”meaning” of each of these combined forms and each of the emotions is the PNG that they correspond with.
Since we are working with strings, the associativity does not necessarily matter as much as if we were writing a mathematical program. All of our primitives and combining forms are of type string.