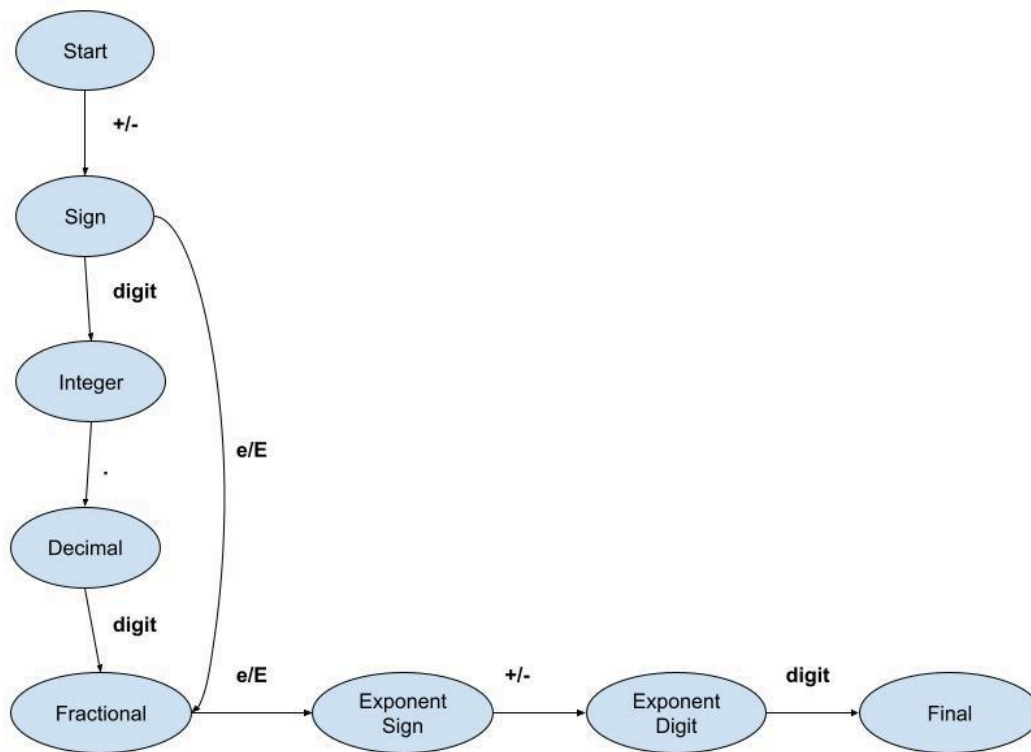Adam Zabloudil
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HW 2

5.1 - Component based is when the system is loosely coupled components that provide services to each other. Service oriented is when the pieces are instead implemented as services, services being self contained programs that run on their own and provide a service for its clients.

5.2 - Event driven architecture could be used as the application would react to user inputs. Also component based architecture because the app could be structured as a collection of components that have certain functionality, like board, score tracker, ai opponent.

5.4 - Client server architecture because the client would be on the users device and the server would manage the game logic and synchronize the two players.

5.6 - The classy draw application would want to use file storing as its database to save drawings since it uses a simple monolithic architecture. This would mean that there wouldn't have to be any maintenance on the database since everything is saved on the user's device rather than on an external database.

5.8 -

A state diagram for parsing a number. States (ellipses): Start, Sign, Integer, Decimal, Fractional, Exponent Sign, Exponent Digit, Final.

Transitions:
- Start → Sign: +/-
- Sign → Integer: digit
- Integer → Decimal: .
- Decimal → Fractional: digit
- Sign → Exponent Sign: e/E
- Fractional → Exponent Sign: e/E
- Exponent Sign → Exponent Digit: +/-
- Exponent Digit → Final: digit

6.1 -
They share properties like being selectable, movable, and deletable. They don;t share shape specific properties since they depend on the individual characteristics of each shape. Properties like rotation or fill may be shared by several but not all classes. Shared properties can be implemented in a parent class, and non shared properties can be implemented in each individual shape class.

6.2 -

**Drawable**

- position
- isSelected
- color
- objectIsAt
- moveTo
- Select
- delete
- draw

**Line**

- draw

**Rectangle**

- width
- height
- draw

**Ellipse**

- radius
- draw

**Text**

- Font
- textContent
- draw