MANDALA
Team

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Motivations

● Mandala is a geometric pattern
● Simple and intuitive code $\rightarrow$ complex and accurate geometric designs
  ○ Create symmetric accurate shapes very easily
  ○ Ensure that geometric patterns are mathematically accurate
● Easy language for users to learn, even without much prior computer science knowledge
  ○ Artists
  ○ Students
Language Building Blocks

Custom Types: Mandala, Layer, Shape

Primitives: Number, Geo

Built-In Functions: draw, addTo

Operators: = + - / *

Foreach

Functions
Language Features: Custom Types

- **Shape**
  - Geo
  - Size
  - Color
  - Rotation

- **Layer**
  - Radius
  - Shape
  - Count
  - Offset
  - AngularShift

- **Mandala**
  - addTo
  - draw

- Create - constructor for custom types
Shape

- Geo
- Size
- Color
- Rotation

![Shapes](image-url)
Layer

- Radius
- Shape
- Count
- Offset
- AngularShift
Sample Program

Mandala n = Create Mandala

Foreach i = 7.0 To 10.0:
    Number x = i * 10.0
    Shape shape1 = Create Shape:
        Geo square
        Size x
        Color cyan
        Rotation 45.0
    Layer layer1 = Create Layer:
        Radius x
        Shape shape1
        Count 12
        Offset 0.0
        AngularShift 1
        addTo:(n, layer1)

draw:(n)
Compiler Architecture
Demo!