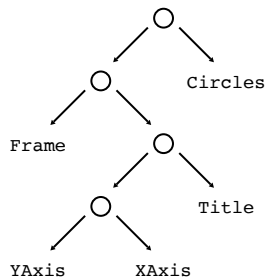


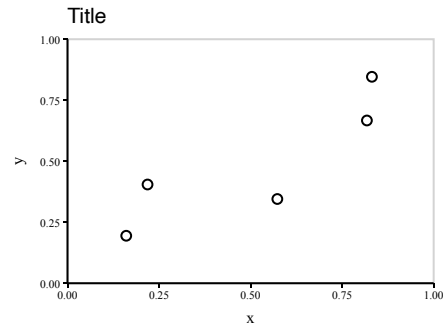
Specification

```
Plot(
  data = df,
  encodings=(
    x=(field=:col_1,datatype=:q),
    y=(field=:col_2,datatype=:q),
    color=(field=:col_2,datatype=:n),
  ),
  ...
)
```

Assembly



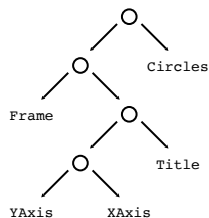
Display



Graphic Expression

```
Σ(row-> begin
  S(:fill=>row[:color])*
  T(row[:x],row[:y])*Circle()
end)
```

Graphic $\equiv \mathbb{T}$ Mark



Marks $\equiv (\text{Type}, \theta)$

```
(XAxis, θ)

struct XAxis <: Mark
  axis_ticks
  axis_title
  axis_length
  ...
end

θ(x::XAxis)::T[Prim] = ...
```

Diagram Tree $\equiv \mathbb{T}[\text{Prim}]$

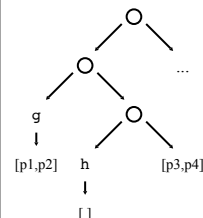


Diagram $\equiv [\text{Prim}]$

[g(p1), g(p2), p3, p4...]

Render [Prim] with SVG

```
Circle(r=1) → <center r="1"/>
Circle(r=2) → <center r="2"/>
Line( ... ) → <polyline .../>
...
```

section 8

section 7

section 6

section 5

section 4