

# BRIN-Q Beamer Seminar Template

QuMaT Group Meeting 20260119

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# Outline

# Typography & Colors

This template uses **Helvetica** for text and *Euler* for math.

We can use the custom color palette defined in the preamble:

- ▶ Normal text is Dark Grey (cw).
- ▶ Important keywords can be **Purple (cp)**.
- ▶ Alerts are naturally **Red (cr)**.
- ▶ Comments or secondary info are *Orange (co)*.

*"Design is intelligence made visible."*

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- 3 Third point appears last.
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  - ▶ They fit strictly within the layout.

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**Transitions are smooth and clear!**

# Theorems & Blocks

## Theorem 1 (Pythagoras)

In a right-angled triangle, the square of the hypotenuse  $c$  is equal to the sum of squares of the other two sides:

$$a^2 + b^2 = c^2$$

## Example: Circle Area

If the radius is  $r = 10$ , then the area is:

$$A = \pi r^2 = 100\pi$$



# Euler Math Font Capabilities

The `eulervm` package gives a distinct "handwritten" look.

▶ **Greek Letters:**  $\alpha, \beta, \Gamma, \Delta, \Omega, \xi, \varphi$

▶ **Calculus:**

$$\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}$$

▶ **Set Theory:**

$$\forall x \in \mathbb{R}, \exists y > x \text{ such that } y \in \mathcal{S}$$

# Handling Long Equations

For complex derivations, use the `align*` environment:

$$\begin{aligned} f(x) &= \sum_{n=0}^{\infty} \frac{f^{(n)}(a)}{n!} (x-a)^n \\ &= f(a) + f'(a)(x-a) + \frac{f''(a)}{2!} (x-a)^2 + \dots \\ &\approx \underbrace{1 + x + \frac{x^2}{2}}_{\text{Approximation for } e^x} \end{aligned}$$

Note how the math font blends well with the comic style text.

# Split Layout (Left/Right)

## Concept Description

This image demonstrates the core principle of the algorithm.

- ▶ Input processing
- ▶ Feature extraction
- ▶ Final classification



## 2 × 1 Figure Layout

Comparing two results side-by-side:



Result A



Result B

## 3 × 1 Figure Layout

Evolution of the dataset over time:



$t = 0$

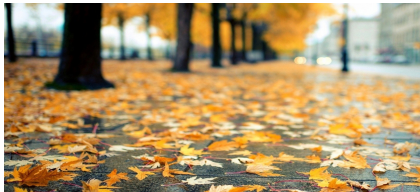


$t = 10$



$t = 100$

## 2 × 2 Figure Layout



## Source Code (Minted)

Here is a Python function using our custom colors:

<MINTED>

The frame color is gray, and keywords are highlighted.

# Algorithmic Pseudocode

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## Algorithm 1 Euclidean Distance

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```
1: Input: Points  $P$  and  $Q$ 
2:  $sum \leftarrow 0$ 
3: for  $i = 1$  to  $n$  do
4:    $diff \leftarrow P_i - Q_i$ 
5:    $sum \leftarrow sum + diff^2$ 
6: end for
7: return  $\sqrt{sum}$ 
```

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# Critical Information

Sometimes we need to draw attention to warnings.

## Warning: Convergence

The algorithm may not converge if the learning rate  $\eta > 0.1$ . Please ensure normalization is applied first.

**IMPORTANT!**

# Summary

- ▶ **Style:** Comic look + Serious Math.
- ▶ **Structure:** Clear hierarchy with Headers/Footers.
- ▶ **Visuals:** Flexible Grid Layouts.

# Thank You!

Any Questions?