# LATEX TEMPLATE FOR GITHUB

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ABSTRACT. Your abstract here.

## 1. INTRODUCTION

Your introduction here. Include some references [1, 2, 3]. Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Figure example

**Figure 1.** Figure example.
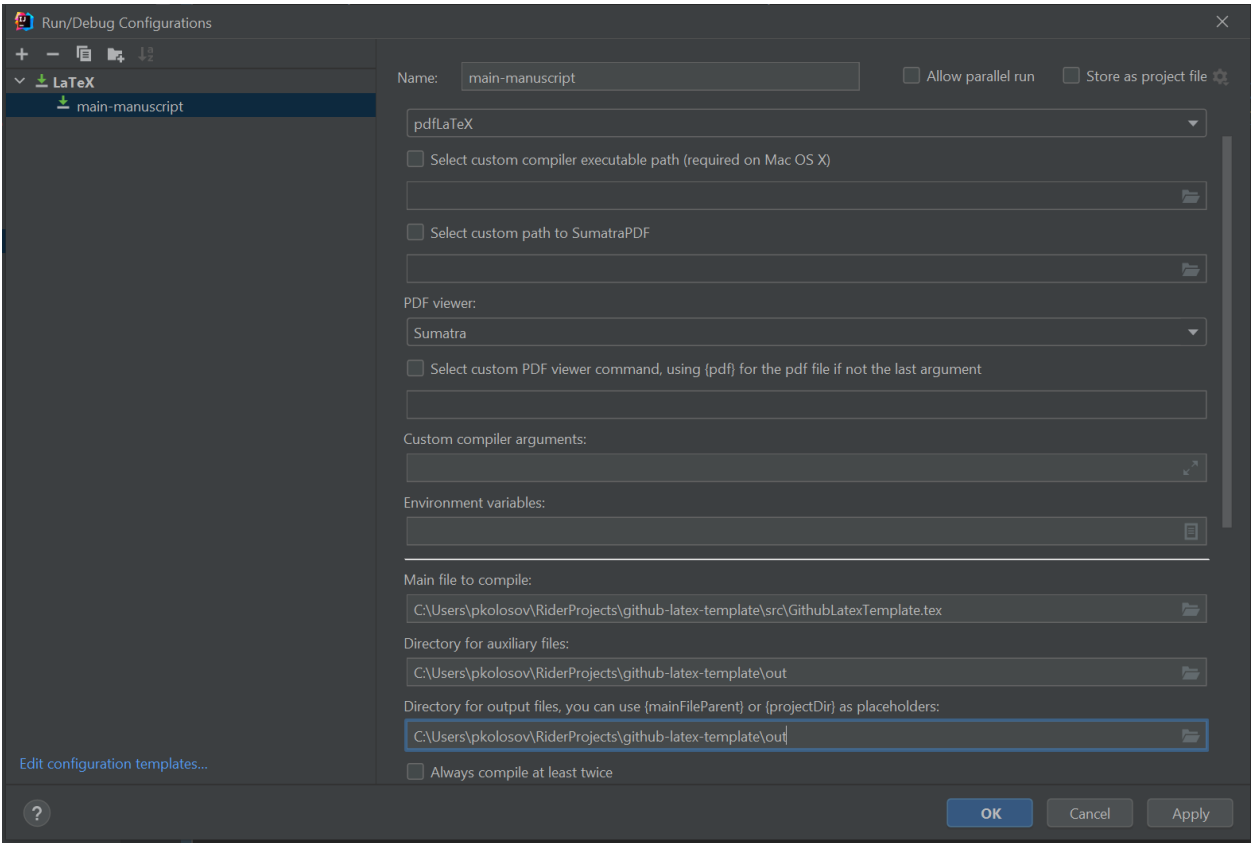
| $m/r$ | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 0 | 1 | | | | | | | |
| 1 | 1 | 6 | | | | | | |
| 2 | 1 | 0 | 30 | | | | | |
| 3 | 1 | -14 | 0 | 140 | | | | |
| 4 | 1 | -120 | 0 | 0 | 630 | | | |
| 5 | 1 | -1386 | 660 | 0 | 0 | 2772 | | |
| 6 | 1 | -21840 | 18018 | 0 | 0 | 0 | 12012 | |
| 7 | 1 | -450054 | 491400 | -60060 | 0 | 0 | 0 | 51480 |

**Table 1.** Coefficients $\mathbf{A}_{m,r}$. See OEIS sequences [4, 5].

$$\left\lVert \begin{matrix} a \\ b \end{matrix} \right\rVert_m$$

$$\left\|\begin{matrix} a \\ b \end{matrix}\right\|_m$$

And for any natural $m$ we have polynomial identity

$$x^m = \sum_{k=1}^{m} T(m,k) x^{[k]} \tag{1}$$

where $x^{[k]}$ denotes central factorial defined by

$$x^{[n]} = x \left( x + \frac{n}{2} - 1 \right)^{\underline{n-1}}$$

where $(n)^{\underline{k}} = n(n-1)(n-2)\cdots(n-k+1)$ denotes falling factorial in Knuth's notation. In particular,

$$x^{[n]} = x \left( x + \frac{n}{2} - 1 \right) \left( x + \frac{n}{2} - 1 \right) \cdots \left( x + \frac{n}{2} - n - 1 \right) = x \prod_{k=1}^{n-1} \left( x + \frac{n}{2} - k \right) \tag{2}$$

This is an equation reference (1).

## 2. Conclusions

Conclusions of your manuscript.

Here is an itemize list with adjusted margins

- Conclusion 1 ....

- Conclusion 2 ....

- Conclusion 3 ....

Total derivative: $\frac{dy}{dx}$

$$\frac{dy}{dx}$$

Partial derivative: $\frac{\partial f}{\partial x}$

Second total derivative: $\frac{d^2 y}{dx^2}$

Mixed partial: $\frac{\partial^2 f}{\partial x \partial y}$

## References

[1] Petro Kolosov. Finding the derivative of polynomials via double limit. *GitHub*, 2024. https://kolosovpetro.github.io/pdf/FindingTheDerivativeOfPolynomialsViaDoubleLimit.pdf.

[2] Alekseyev, Max. MathOverflow answer 297916/113033, 2018. https://mathoverflow.net/a/297916/113033.

[3] Petro Kolosov. The coefficients U(m, l, k), m = 3 defined by the polynomial identity, 2018. https://oeis.org/A316387.

[4] Petro Kolosov. Entry A302971 in The On-Line Encyclopedia of Integer Sequences, 2018. https://oeis.org/A302971.

[5] Petro Kolosov. Entry A304042 in The On-Line Encyclopedia of Integer Sequences, 2018. https://oeis.org/A304042.

**Version:** Local-0.1.0

**Sources**: github.com/kolosovpetro/github-latex-template