

---

## What this code is about

The `c++` code `LU.cpp` computes the matrix elements in equation (4.25)

$$P(n, m) = m! 2^{2n+2} \sum_{k=0}^m \frac{(-2)^k (2n+k+1)!}{(k!)^2 (m-k)!}. \quad (1)$$

The code writes the elements  $P(n, m)$  to the file `matrix_p.txt` in a row-major fashion.

The file `run.sh` encapsulates commands to build and run the application using the `CMakeLists.txt` on a local machine running on Ubuntu 24.04.