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"""Helper to get paper sizes."""

from collections import namedtuple

Dimensions = namedtuple("Dimensions", ["width", "height"])

class PaperSize:
    """(width, height) of the paper in portrait mode in pixels at 72 ppi."""

    # Notes how to calculate it:
    # 1. Get the size of the paper in mm
    # 2. Convert it to inches (25.4 millimeters are equal to 1 inches)
    # 3. Convert it to pixels at 72dpi (1 inch is equal to 72 pixels)

    # All Din-A paper sizes follow this pattern:
    #  $2 \times A(n-1) = A(n)$ 
    # So the height of the next bigger one is the width of the smaller one
    # The ratio is always approximately the ratio  $1:2^{0.5}$ 
    # Additionally, A0 is defined to have an area of  $1 \text{ m}^2$ 
    # Be aware of rounding issues!
    A0 = Dimensions(2384, 3370) # 841mm x 1189mm
    A1 = Dimensions(1684, 2384)
    A2 = Dimensions(1191, 1684)
    A3 = Dimensions(842, 1191)
    A4 = Dimensions(
        595, 842
    ) # Printer paper, documents - this is by far the most common
    A5 = Dimensions(420, 595) # Paperback books
    A6 = Dimensions(298, 420) # Post cards
    A7 = Dimensions(210, 298)
    A8 = Dimensions(147, 210)

    # Envelopes
    C4 = Dimensions(649, 918)

_din_a = (
    PaperSize.A0,
    PaperSize.A1,
    PaperSize.A2,
    PaperSize.A3,
    PaperSize.A4,
    PaperSize.A5,
    PaperSize.A6,
    PaperSize.A7,
    PaperSize.A8,
)

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