In this exercise we study inheritance of classes.

Tasks
This assignment has 4 tasks.

Task 1

Define an abstract class `PolyGon`. It should have a method `plot` which plots the polygon by drawing its edges. It should also have an `__init__` method, which takes a list of corner points as input. Corner points are described by arrays with shape `(2,)` describing the coordinates of the corners. The `__init__` method assigns this corner list as an attribute and also computes the edges. (See also the corresponding method in the triangle example (course book p. 121 and p. 126).

Task 2

Define a class `Rectangle` which inherits as much as possible from the parent class `PolyGon`. Provide it also with a method to compute the area.

Task 3

Define a third class `SpecialRectangle` which describes Rectangles which have all its edges parallel to the coordinate axes. It should be constructed by inheritance from the class `Rectangle`.

Task 4

Give this class a method `__contains__` such that for two given SpecialRectangles `A` and `B` the statement `A in B` evaluates to `True` if `A` is contained in `B` and `False` otherwise.