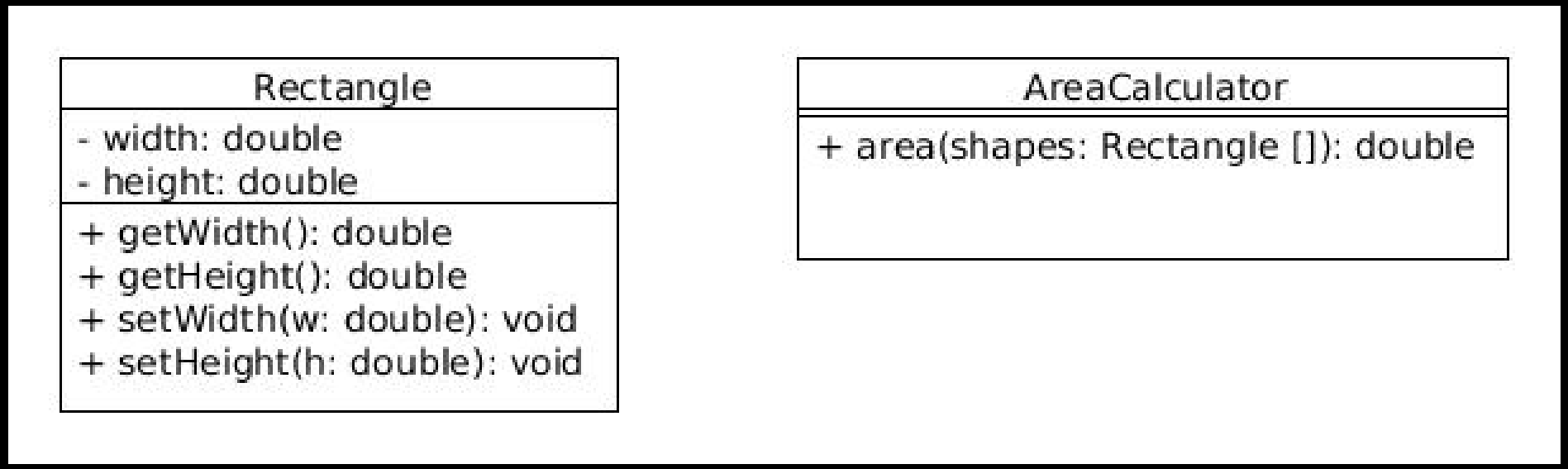
Area Calculator Design Example

- An example using inheritance
- The `area` method calculates the area of all Rectangles in the given array.
- What if we need to add more shapes?



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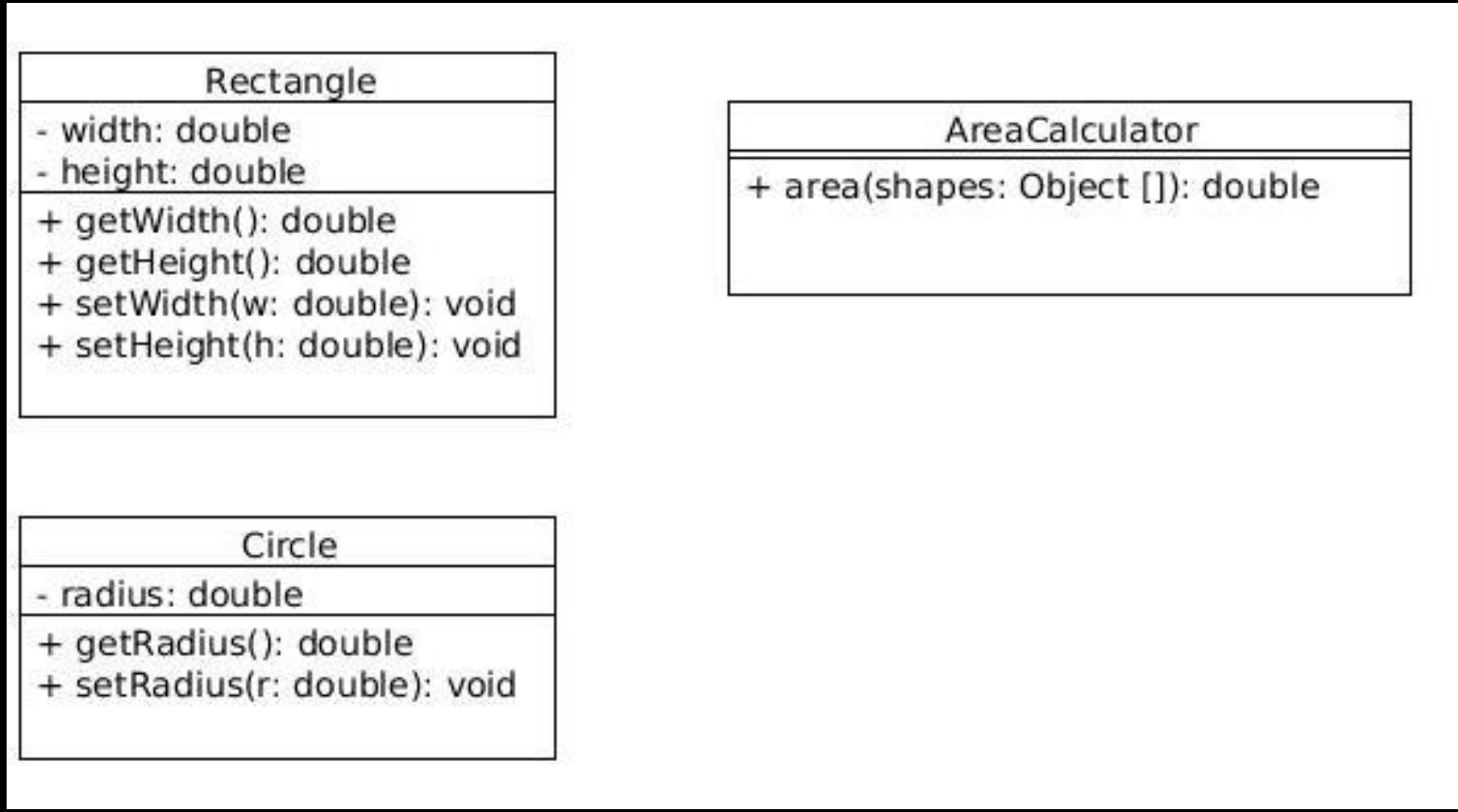
- We might make it work for circles too.
- We could implement a `Circle` class and **rewrite** the `area` method to take in an **array of Objects** (using `isinstance` to determine if each `Object` is a `Rectangle` or a `Circle` so it can be cast appropriately).
- But what if we need to add *even more* shapes?



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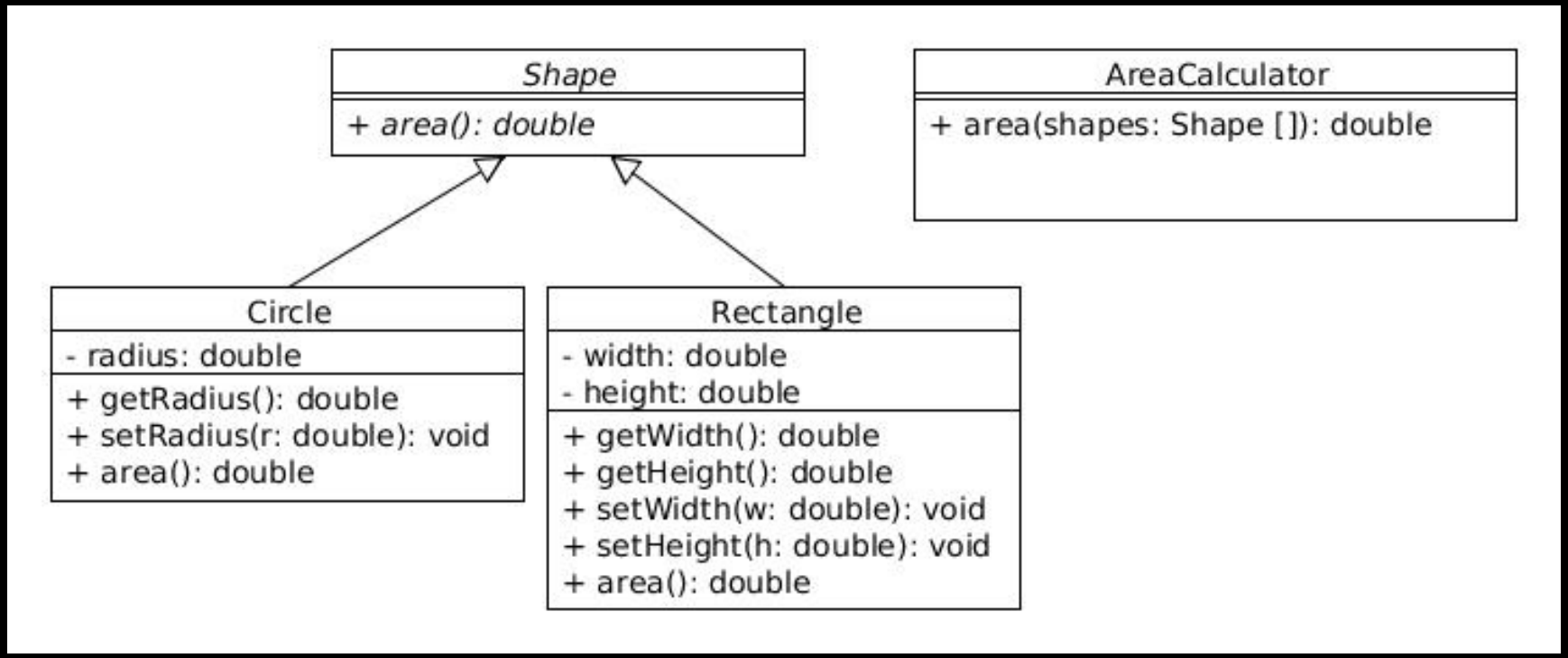
- With this design, we can add any number of shapes without needing to re-write the `AreaCalculator` class.



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- The responsibility of calculating the area of a specific shape is that of each subclass of Shape — using polymorphism so that the AreaCalculator's area method can use a simple accumulator pattern.