

# Timing our code

Madhavan Mukund

<https://www.cmi.ac.in/~madhavan>

Programming, Data Structures and Algorithms using Python  
Week 1

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  - Absolute value of `perf_time()` is not meaningful
  - Compare two consecutive readings to get an interval
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  - Absolute value of `perf_time()` is not meaningful
  - Compare two consecutive readings to get an interval
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```
import time

start = time.perf_counter()

...
# Execute some code
...
end = time.perf_counter()

elapsed = end - start
```

# A timer object

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class Timer:
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import time
class Timer:
    def __init__(self):
        self._start_time = 0
        self._elapsed_time = 0
```

# A timer object

- Create a timer class
- Two internal values
  - `_start_time`
  - `_elapsed_time`
- `start` starts the timer

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import time
class Timer:
    def __init__(self):
        self._start_time = 0
        self._elapsed_time = 0
    def start(self):
        self._start_time = time.perf_counter()
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# A timer object

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- Two internal values
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- `start` starts the timer
- `stop` records the elapsed time

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import time
class Timer:
    def __init__(self):
        self._start_time = 0
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    def start(self):
        self._start_time = time.perf_counter()

    def stop(self):
        self._elapsed_time =
            time.perf_counter() - self._start_time

    def elapsed(self):
        return(self._elapsed_time)
```

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- More sophisticated version in the actual code
- Python executes  $10^7$  operations per second

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    def __init__(self):
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