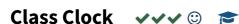
22/02/2025, 18:20 ICSE – Class Clock

**Introduction to Computer Science for Engineers** 



This assignment **closed** December 1, 2024 at 23:15.

The time of day can be represented by the hours  $(0 \le h < 24)$  and minutes  $(0 \le m < 60)$ .

## **Assignments**

1. Write a class Clock, that can be used to create, add and print time objects. The class should at least contain:

a. a constructor to create an instance by giving the hours and minutes (in that order). Both values might exceed 60, but should be normalized to an actual time. Both values should be stored as object properties.

E.g.: 06:62 should become 07:02, 25:00 should become 01:00.

b. the method \_\_eq\_\_(self, other: object) -> bool to check if self and clock represent the same time. We provided the base implementation, since other in signature must have the type object . Complete the method!

**Hint**: This allows you to use == on two clock objects. Python Docs

c. the method \_\_add\_\_(self, other: "Clock") -> "Clock" to add the clock object and the self Clock
object.

**Hint**: This allows you to use + on two clock objects. Python Docs

d. the method add\_minutes(self, minutes: int) -> "Clock" to add the minutes to the current Clock
object.

e. a method \_\_str\_\_(self) -> str to transform the object into a proper String representation.

2. Test your Clock using the script. Generate random Clock objects and test your methods' implementations.

## **Hints**

- The methods for adding should always return a new clock instance and not modify the self instance.
- The type-hint "Clock" has to be in quotes, since it is not defined by the time the type checker checks the functions. The quotes delay the type checking till the end of the script, at which point Clock is defined.



## **Template files**

Get all files in an archive templates.zip or templates.tgz.



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