

SWINBURNE UNIVERSITY OF TECHNOLOGY

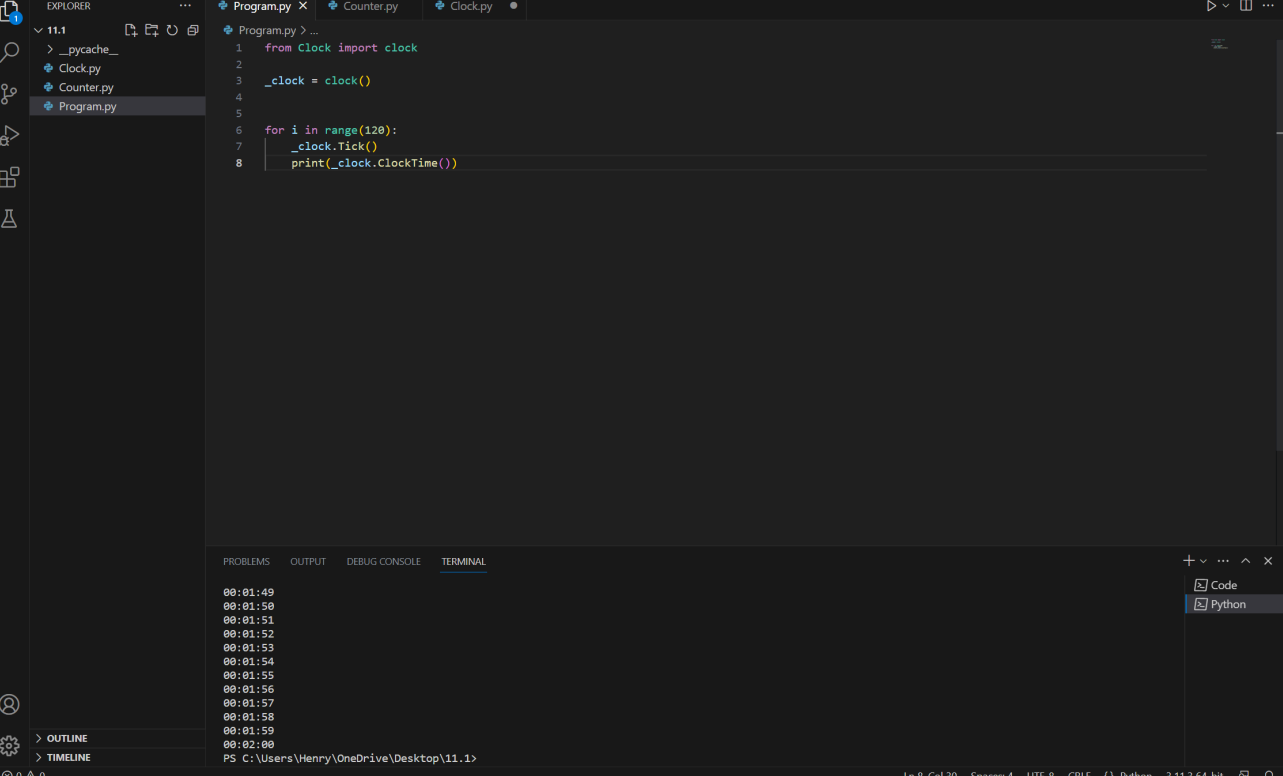
COS20007 OBJECT ORIENTED PROGRAMMING

11.1P - Clock in Another Language

PDF generated at 18:21 on Wednesday 10th May, 2023

```
1 -----> program file
2
3 from Clock import clock
4
5 _clock = clock()
6
7
8 for i in range(120):
9     _clock.Tick()
10    print(_clock.ClockTime())
11
12 -----> counter file
13
14 class counter:
15     def __init__(self, name):
16         self.__name = name
17         self.__count = 0
18
19     def Increment(self):
20         self.__count += 1
21
22     def Reset(self):
23         self.__count = 0
24
25
26     def get_name(self):
27         return self.__name
28
29
30     def set_name(self, value):
31         self.__name = value
32
33
34     def Ticks(self):
35         return self.__count
36
37 -----> clock file
38
39 from Counter import counter
40 class clock:
41
42     def __init__(self):
43         self.__Seconds = counter("Seconds")
44         self.__Minutes = counter("Minutes")
45         self.__Hours = counter("Hours")
46
47     def Tick(self):
48         self.__Seconds.Increment()
49
50         if self.__Seconds.Ticks > 59:
51             self.__Seconds.Reset()
52             self.__Minutes.Increment()
53
```

```
54         if self.__Minutes.Ticks > 59:
55             self.__Minutes.Reset()
56             self.__Hours.Increment()
57
58         if self.__Hours.Ticks > 23:
59             self.ResetClock()
60
61     def ResetClock(self):
62         self.__Seconds.Reset()
63         self.__Minutes.Reset()
64         self.__Hours.Reset()
65
66     def ClockTime(self):
67         return f"{self.__Hours.Ticks:02d}:{self.__Minutes.Ticks:02d}:{self.__Seconds }
        ↪ .Ticks:02d}"
```



The screenshot shows a Python IDE with three files open: `Program.py`, `Counter.py`, and `Clock.py`. The `Program.py` file is active and contains the following code:

```
1 from Clock import clock
2
3 _clock = clock()
4
5
6 for i in range(120):
7     _clock.Tick()
8     print(_clock.ClockTime())
```

The bottom panel of the IDE displays the `TERMINAL` output, showing a series of timestamps from 00:01:49 to 00:02:00. The terminal prompt is `PS C:\Users\Henry\OneDrive\Desktop\11.1>`.