

BIS 420 PROGRAMMING FOR DATA SCIENCE
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CHAPTER 16 EXERCISE 16.6
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Write a function called `mul_time` that takes a `Time` object and a number and returns a new `Time` object that contains the product of the original `Time` and the number. Then use `mul_time` to write a function that takes a `Time` object that represents the finishing time in a race, and a number that represents the distance, and returns a `Time` object that represents the average pace (time per mile).

class `Time`:

```
def __init__(self, hour=0, minute=0, second=0):  
    self.hour = hour  
    self.minute = minute  
    self.second = second
```

def `time_to_int(time)`:

```
    return time.hour * 3600 + time.minute * 60 + time.second
```

def `int_to_time(seconds)`:

```
    hour = seconds // 3600  
    seconds %= 3600  
    minute = seconds // 60  
    second = seconds % 60  
    return Time(hour, minute, second)
```

def `mul_time(time, number)`:

```
    total_seconds = time_to_int(time) * number  
    return int_to_time(int(total_seconds))
```

```

def average_pace(finishing_time, distance):
    return mul_time(finishing_time, 1/distance)

def print_time(time):
    print('%0.2d:%0.2d:%0.2d' % (time.hour, time.minute, time.second))

race_time = Time(1, 30, 0)
distance = 10
pace = average_pace(race_time, distance)
print_time(pace)

```

```

class Time:
    def __init__(self, hour=0, minute=0, second=0):
        self.hour = hour
        self.minute = minute
        self.second = second

def time_to_int(time):
    return time.hour * 3600 + time.minute * 60 + time.second

def int_to_time(seconds):
    hour = seconds // 3600
    seconds %= 3600
    minute = seconds // 60
    second = seconds % 60
    return Time(hour, minute, second)

def mul_time(time, number):
    total_seconds = time_to_int(time) * number
    return int_to_time(int(total_seconds))

def average_pace(finishing_time, distance):
    return mul_time(finishing_time, 1/distance)

def print_time(time):
    print('%0.2d:%0.2d:%0.2d' % (time.hour, time.minute, time.second))

```

```
race_time = Time(1, 30, 0)
distance = 10
pace = average_pace(race_time, distance)
print_time(pace)
```