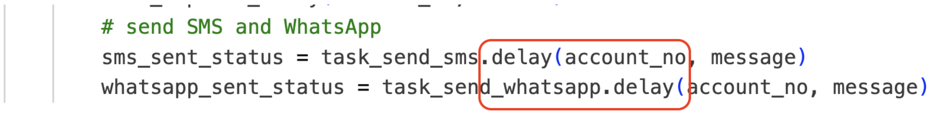
Chapter - 3 : Invoking Celery from Producers using delay and apply_async

We can execute all the tasks in celery by putting the task into the `RabbitMQ`, it can be done by calling the tasks using `delay` and `apply_async`. We've till now seen the usage of `'delay` in the previous examples



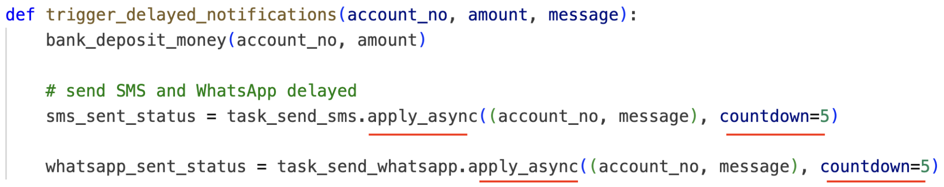
```
# send SMS and WhatsApp
sms_sent_status = task_send_sms.delay(account_no, message)
whatsapp_sent_status = task_send_whatsapp.delay(account_no, message)
```

Using Delay

By far, `delay` is the simplest way of calling any celery task, however, there are situations where `delay` is not sufficient because we need to provide additional parameters as well as to some extent control the execution. And for that we have `apply_async`

Delayed Start of the Task

We can delay the start of a task by providing a countdown parameter in the celery task



```
def trigger_delayed_notifications(account_no, amount, message):
    bank_deposit_money(account_no, amount)

    # send SMS and WhatsApp delayed
    sms_sent_status = task_send_sms.apply_async((account_no, message), countdown=5)

    whatsapp_sent_status = task_send_whatsapp.apply_async((account_no, message), countdown=5)
```

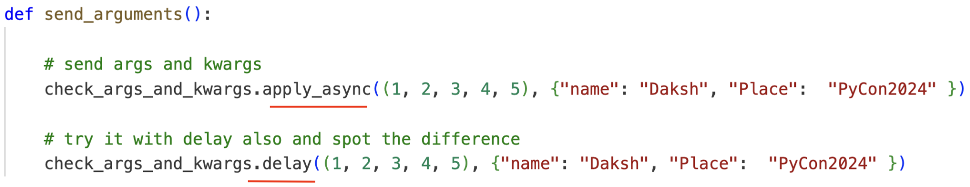
Delayed Start

sleep in the tasks blocks the worker, but the countdown doesn't blocks the worker

Example : 1

Sending *args and **kwargs

Let's send arguments as keyword arguments to the tasks. We can try first with `apply_async` followed by `delay`



```
def send_arguments():

    # send args and kwargs
    check_args_and_kwargs.apply_async((1, 2, 3, 4, 5), {"name": "Daksh", "Place":  "PyCon2024" })

    # try it with delay also and spot the difference
    check_args_and_kwargs.delay((1, 2, 3, 4, 5), {"name": "Daksh", "Place":  "PyCon2024" })
```

Args and Kwargs

Example : 2

Example : 2 with uncomment delay call

There are many other differences between `delay` *and* `apply_async` *some of which we will be seeing in due course of this tutorial*

Time for the First Coding Exercise

Create a Celery Consumer (TASK) which which sends the banking transaction notifications to 3 places i.e. SMS, WhatsApp & twiitter DM. Please fulfill the following conditions

-1. The Producer will put all the tasks in the queue at once -2. The consumer will send the SMS after 3 seconds, WhatsApp after 6 seconds and DM after 10 seconds. -3. You can at max have 3 workers i.e. –concurrency=3