$$E(N_t|N_s) = E(N_t - N_s + N_s|N_s) = E(N_t - N_s|N_s) + E(N_s|N_s) = \lambda(t-s) + N_s$$

In [1]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [16]:

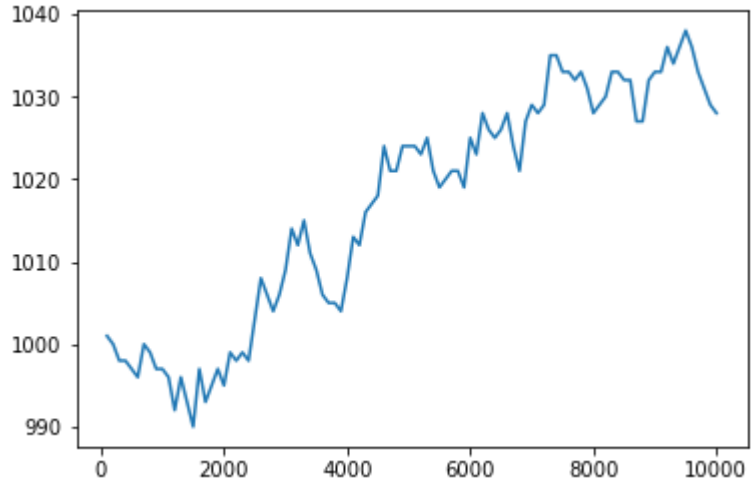
```
to = 10
t = 15000
l = 1./15 #lambda
data = pd.read_csv('6.csv').data.values
```

In [3]:

```
predictions = []
time_range = np.arange(to, t, to)
n = 0
for time in time_range:
    for crash in data[n:]:
        if crash < time:
            n += 1
        else:
            break
    predictions.append(np.ceil(l*(t - time)) + n)
```

In [4]:

```
a, b = 0, 100
plt.plot(time_range[a:b], predictions[a:b])
plt.show()
```



In [27]:

```
import time as tm
from IPython import display
offset = 0
time = 0
n = 0
while time  - zero_offset <= t:
#     time = int(tm.clock()*60)
    if time - offset >= to:
        offset += to
        for crash in data[n:]:
            if crash < time:
                n += 1
            else:
                break
    display.clear_output(wait=True)
    print time, ':', (np.ceil(l*(t-time)) + n)
    tm.sleep(1)
    time += 1
```

```
62 : 1001.0

---------------------------------------------------------------------------
-------
KeyboardInterrupt                         Traceback (most recent cal
l last)
<ipython-input-27-f14e928bf46f> in <module>()
     15     display.clear_output(wait=True)
     16     print time, ':', (np.ceil(l*(t-time)) + n)
---> 17     tm.sleep(1)
     18     time += 1

KeyboardInterrupt:
```

In [ ]:

```

```