uni-polar-non-return-to-zero

March 29, 2024

[2]:
```
import numpy as np
import matplotlib.pyplot as plt
```

[4]:
```
N = 10;
n = np.random.randint(0, 2, N)
n
```

[4]:
```
array([1, 1, 0, 1, 0, 1, 0, 0, 0, 1])
```

[7]:
```
t = np.arange(0, N, 0.01)
t[:10]
```

[7]:
```
array([0.  , 0.01, 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09])
```

[8]:
```
nn = [1 if bit== 1 else 0 for bit in n]
nn
```

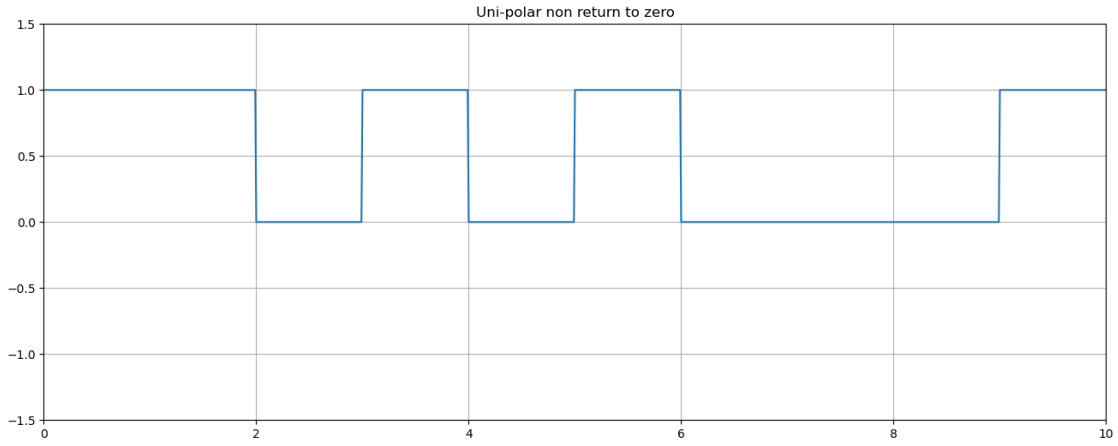
[8]:
```
[1, 1, 0, 1, 0, 1, 0, 0, 0, 1]
```

[12]:
```
nn = np.repeat(n , int(len(t))/N)
nn[800:1000]
```

[12]:
```
array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1])
```

[20]:
```
plt.figure(figsize=(16, 6))
plt.plot(t, nn)
plt.grid(True)
plt.axis([0, N, -1.5, 1.5])
plt.title("Uni-polar non return to zero")
```

[20]: Text(0.5, 1.0, 'Uni-polar non return to zero')



[17]:
```
n
```

[17]: array([1, 1, 0, 1, 0, 1, 0, 0, 0, 1])

[ ]: