

1. In line for loop

```
def get_pdf(dataset,start,end):
    from matplotlib import pyplot
    from scipy.stats import norm
    import seaborn as sns

    ax=sns.distplot(dataset,kde=True,kde_kws={'color':'blue'},color='green')
    pyplot.axvline(start,color='red')
    pyplot.axvline(end,color='red')

    sample=dataset
    sample_mean=sample.mean()
    sample_std=sample.std()

    print("Mean:",sample_mean)
    print("STD:",sample_std)

    dist=norm(sample_mean,sample_std)

    values=[value for value in range(start,end+1)]
    #print(values)

    prob=[dist.pdf(value) for value in values]
    #print(prob)

    probab=sum(prob)
    print("The probability for the range {start}, {end}is:", probab)

    return probab
```

ax=sns.distplot(dataset,kde=True,kde_kws={'color':'blue'},color='green') → displays the graph

pyplot.axvline(start,color='red') -> red vertical line at the start range

pyplot.axvline(end,color='red') -> red vertical line at the end range

sample_mean=sample.mean() -> calculates the mean

sample_std=sample.std() -> calculates the standard deviation

dist=norm(sample_mean,sample_std) -> calculate the normal distribution value

values=[value for value in range(start,end+1)] -> this line creates a list with values starting from start and ending with 'end' (This is called in line for loop)

If the start is 40 and end is 60 then the list values will contain
[40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60]

prob=[dist.pdf(value) for value in values] -> this line creates a list with the values of probability density function
(This is called in line for loop)

2. Replacement of in line for loop

```
def get_pdf1(dataset,start,end):
    from matplotlib import pyplot
    from scipy.stats import norm
    import seaborn as sns

    ax=sns.distplot(dataset,kde=True,kde_kws={'color':'blue'},color='green')
    pyplot.axvline(start,color='red')
    pyplot.axvline(end,color='red')

    sample=dataset
    sample_mean=sample.mean()
    sample_std=sample.std()

    print("Mean:",sample_mean)
    print("STD:",sample_std)

    dist=norm(sample_mean,sample_std)

    values=[]

    for value in range(start,end+1):
        values.append(value)
        print (values)

    prob=[]
    for value in values:
        pr=dist.pdf(value)
        prob.append(pr)

    print(prob)

    probab=sum(prob)
    print("The probability for the range {start}, {end}is:", probab)

    return probab
```