```
Naman Thaker (20bce529)

IRS PRACTICAL 5 EVALUATION MEASURES
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```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt


data = [[1,'+'],[2,'+'],[3,'+'],[4,'-'],[5,'+'],[6,'-'],[7,'+'],[8,'-'],[9,'+'],[10,'+'],[


df=pd.DataFrame(data,columns=['Rank','Relevancy'])


grnd=8
df
```

	Rank	Relevancy
0	1	+

```
rel=df['Relevancy']
p=[]
r=[]
avg=0
x=0
for i in range(1,len(df)+1):
    if(rel[i-1]=='+'):
        x+=1
    p.append(round((x/i)*100))
    r.append(round((x/grnd)*100))
```

```
p
```

```
[100,
 100,
 100,
 75,
 80,
 67,
 71,
 62,
 67,
 70,
 64,
 58,
 62,
 57,
 53,
 50,
 47,
 44,
 42,
 40]
```

```
df.insert(2,"Precision",p)
df.insert(3,"Recall",r)
```

```
df
```

	Rank	Relevancy	Precision	Recall
0	1	+	100	12
1	2	+	100	25
2	3	+	100	38
3	4	-	75	38
4	5	+	80	50
5	6	-	67	50
6	7	+	71	62
7	8	-	62	62
8	9	+	67	75
9	10	+	70	88
10	11	-	64	88
11	12	-	58	88
12	13	+	62	100
13	14	-	57	100
14	15		53	100

```
R = [0,10,20,30,40,50,60,70,80,90,100]
PR = []
for i in reversed(range(len(R))):
    if R[i] in r:
        index = r.index(R[i])
        x = max(p[index:])
        PR.append(x)
    else:
        if R[i]==0:
            PR.append(x)
        else:
            for j in reversed(range(0,index)):
                if R[i]<r[j]:
                    index=j
            x = max(p[index:])
            PR.append(x)


# for Precision,Recall in df:
#   if Precision == Recall:
#     print(Precision)
#   # for j in df['Recall']:
#     # print(p[i])


# # print(breakeven)


PR.reverse()
```

```
PR
```

```
[100, 100, 100, 100, 80, 80, 71, 70, 70, 62, 62]
```

```
plt.plot(R,PR)
```

```
[<matplotlib.lines.Line2D at 0x7f662b014510>]
```