Cost Matrix

	PREDICTED CLASS		
ACTUAL CLASS		Class=Yes	Class=No
	Class=Yes	f(Yes, Yes)	f(Yes,No)
	Class=No	f(No, Yes)	f(No, No)

Cost Matrix	PREDICTED CLASS		
ACTUAL CLASS	C(i, j)	Class=Yes	Class=No
	Class=Yes	C(Yes, Yes)	C(Yes, No)
	Class=No	C(No, Yes)	C(No, No)

C(i,j): Cost of misclassifying class i example as class j

$$\text{Cost} = \sum C(i, j) \times f(i, j)$$

Computing Cost of Classification

Cost Matrix	PREDICTED CLASS		
	C(i,j)	+	-
ACTUAL CLASS	+	-1	100
	-	1	0

Accuracy = 80%

Cost = 3910

Accuracy = 90%

Cost = 4255

Model M_1	PREDICTED CLASS		
		+	-
ACTUAL CLASS	+	150	40
	-	60	250

Model M_2	PREDICTED CLASS		
		+	-
ACTUAL CLASS	+	250	45
	-	5	200

Accuracy = 150 + 250/150+250+40+60 = 80%

Cost = 150(-1) + 40(100) + 60(1) + 250(0)

Cost = 3910

Accuracy = 250 + 200/250+200+45+5 = 90%

Cost = 250(-1) + 45(100) + 5(1) + 200(0)

Cost = 4255