Standard logistic function

y = 0

y = 1

plot for total loss

Log Loss for y=0, y=1, and Total Log Loss
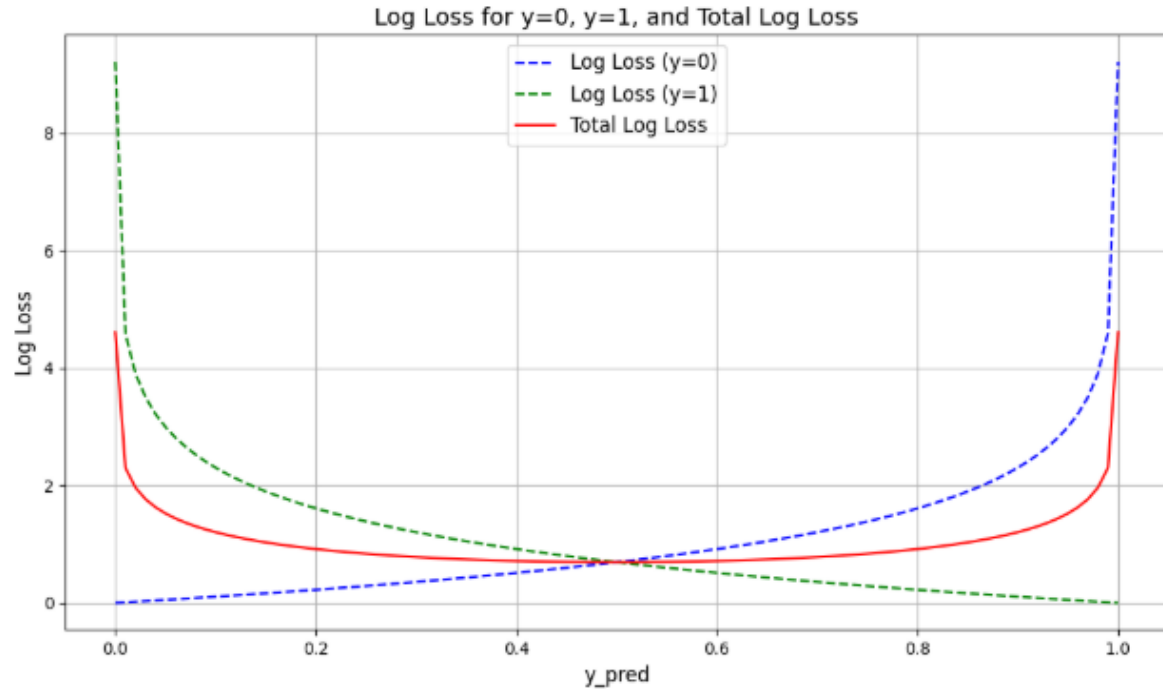
```
Iteration 200: Cost = 0.634332
Iteration 300: Cost = 0.607704
Iteration 400: Cost = 0.582671
Iteration 500: Cost = 0.559128
Iteration 600: Cost = 0.536977
Iteration 700: Cost = 0.516126
Iteration 800: Cost = 0.496487
Iteration 900: Cost = 0.477978
Iteration 1000: Cost = 0.460524
Iteration 1100: Cost = 0.444052
Iteration 1200: Cost = 0.428497
Iteration 1300: Cost = 0.413797
Iteration 1400: Cost = 0.399895
Iteration 1500: Cost = 0.386736
Iteration 1600: Cost = 0.374272
Iteration 1700: Cost = 0.362457
Iteration 1800: Cost = 0.351248
Iteration 1900: Cost = 0.340607
Iteration 2000: Cost = 0.330495
Iteration 2100: Cost = 0.320880
Iteration 2200: Cost = 0.311730
Iteration 2300: Cost = 0.303016
Iteration 2400: Cost = 0.294710
Iteration 2500: Cost = 0.286789
Iteration 2600: Cost = 0.279228
Iteration 2700: Cost = 0.272007
Iteration 2800: Cost = 0.265104
Iteration 2900: Cost = 0.258502
Iteration 3000: Cost = 0.252182
Iteration 3100: Cost = 0.246129
Iteration 3200: Cost = 0.240328
Iteration 3300: Cost = 0.234764
Iteration 3400: Cost = 0.229425
Iteration 3500: Cost = 0.224299
Iteration 3600: Cost = 0.219373
Iteration 3700: Cost = 0.214637
Iteration 3800: Cost = 0.210081
Iteration 3900: Cost = 0.205697
Iteration 4000: Cost = 0.201474
Iteration 4100: Cost = 0.197406
```
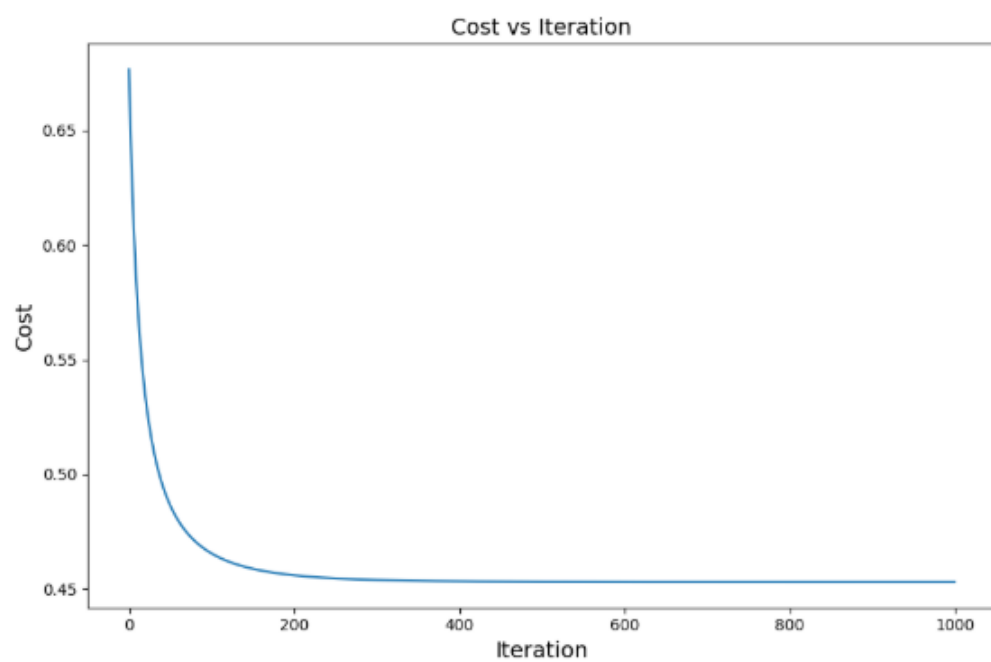
Cost vs Iteration
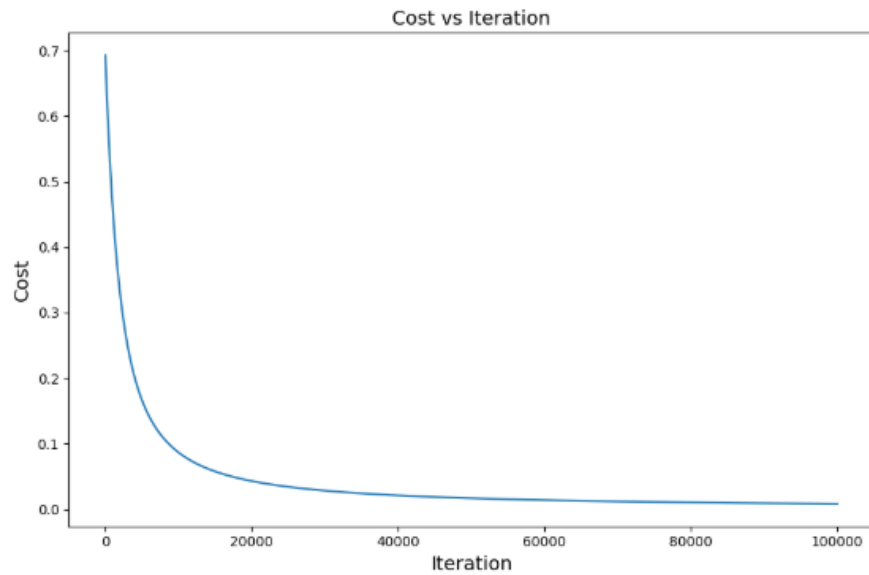
Decision Function

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
count	768.000000	768.000000	768.000000	768.000000	768.000000	768.000000	768.000000	768.000000	768.000000
mean	3.845052	121.656250	72.386719	29.108073	140.671875	32.455208	0.471876	33.240885	0.348958
std	3.369578	30.438286	12.096642	8.791221	86.383060	6.875177	0.331329	11.760232	0.476951
min	0.000000	44.000000	24.000000	7.000000	14.000000	18.200000	0.078000	21.000000	0.000000
25%	1.000000	99.750000	64.000000	25.000000	121.500000	27.500000	0.243750	24.000000	0.000000
50%	3.000000	117.000000	72.000000	29.000000	125.000000	32.300000	0.372500	29.000000	0.000000
75%	6.000000	140.250000	80.000000	32.000000	127.250000	36.600000	0.626250	41.000000	1.000000
max	17.000000	199.000000	122.000000	99.000000	846.000000	67.100000	2.420000	81.000000	1.000000

Train Test Split and Standard Scaling of the Dataset:

Cost vs Iteration