Data_Analysis(1)

February 18, 2018

In [136]:
```
import pandas as pd
import matplotlib.pyplot as plt
import matplotlib
%matplotlib inline
```

In [137]:
```
responses = pd.read_csv('./data/NearMissResponses.csv')
```

In [138]:
```
filtered = responses.loc[responses['Choose the highest level of happiness that can be
filtered = filtered.loc[responses['What was the numerical scale for the responses? (
print('before filtering:', responses.shape)
print('after filtering: ', filtered.shape)
```

```
before filtering: (21, 41)
after filtering:  (19, 41)
```

In [139]:
```
responses = responses.drop(['Timestamp', 'Choose the highest level of happiness that
                            'What was the numerical scale for the responses? (format as "x
                            'What is your name? (optional)',
                             'Any other comments?'], axis=1)
means = responses.mean()
print(len(means))
means
```

```
36
```

Out[139]:
```
Scenario 1 [Happiness]          7.666667
Scenario 1 [Sadness]            1.047619
Scenario 1 [Surprise]           5.761905
Scenario 1 [Disappointment]     1.047619
Scenario 2 [Happiness]          8.238095
Scenario 2 [Sadness]            1.047619
Scenario 2 [Surprise]           7.571429
Scenario 2 [Disappointment]     1.000000
Scenario 3 [Happiness]          8.238095
Scenario 3 [Sadness]            1.095238
Scenario 3 [Surprise]           7.476190
```

```
Scenario 3 [Disappointment]    1.095238
Scenario 4 [Happiness]         3.380952
Scenario 4 [Sadness]           3.666667
Scenario 4 [Surprise]          2.285714
Scenario 4 [Disappointment]    4.857143
Scenario 5 [Happiness]         1.857143
Scenario 5 [Sadness]           6.142857
Scenario 5 [Surprise]          5.190476
Scenario 5 [Disappointment]    7.571429
Scenario 6 [Happiness]         2.714286
Scenario 6 [Sadness]           4.571429
Scenario 6 [Surprise]          4.380952
Scenario 6 [Disappointment]    6.571429
Scenario 7 [Happiness]         5.619048
Scenario 7 [Sadness]           2.285714
Scenario 7 [Surprise]          3.047619
Scenario 7 [Disappointment]    2.714286
Scenario 8 [Happiness]         4.809524
Scenario 8 [Sadness]           3.333333
Scenario 8 [Surprise]          5.142857
Scenario 8 [Disappointment]    5.619048
Scenario 9 [Happiness]         6.142857
Scenario 9 [Sadness]           2.190476
Scenario 9 [Surprise]          5.333333
Scenario 9 [Disappointment]    2.190476
dtype: float64
```

```
In [140]: data = {}
          emotions = ['Happiness', 'Sadness', 'Surprise', 'Disappointment']
          for i in range(0,4):
              data.update({emotions[i]: [means[0 + i], means[4 + i], means[8 + i], means[12 +
                                         means[20 + i], means[24 + i], means[28 + i], means[32
          index = []
          for i in range(0,10):
              index.append('Scenario ' + str(i))
```

```
In [141]: data
```

```
Out[141]: {'Disappointment': [1.0476190476190477,
            1.0,
            1.0952380952380953,
            4.8571428571428568,
            7.5714285714285712,
            6.5714285714285712,
            2.7142857142857144,
            5.6190476190476186,
            2.1904761904761907],
           'Happiness': [7.666666666666667,
```

```
 8.2380952380952372,
 8.2380952380952372,
 3.3809523809523809,
 1.8571428571428572,
 2.7142857142857144,
 5.6190476190476186,
 4.8095238095238093,
 6.1428571428571432],
'Sadness': [1.0476190476190477,
 1.0476190476190477,
 1.0952380952380953,
 3.6666666666666665,
 6.1428571428571432,
 4.5714285714285712,
 2.2857142857142856,
 3.3333333333333335,
 2.1904761904761907],
'Surprise': [5.7619047619047619,
 7.5714285714285712,
 7.4761904761904763,
 2.2857142857142856,
 5.1904761904761907,
 4.3809523809523814,
 3.0476190476190474,
 5.1428571428571432,
 5.333333333333333]}
```

In [142]:
```
df = pd.DataFrame(data = data)
names = ['middle100', '100near25', '100near60', 'middle25', '25near100', '25near60',
df['names'] = names
df = df.set_index('names')
df
```

Out[142]:

names	Disappointment	Happiness	Sadness	Surprise
middle100	1.047619	7.666667	1.047619	5.761905
100near25	1.000000	8.238095	1.047619	7.571429
100near60	1.095238	8.238095	1.095238	7.476190
middle25	4.857143	3.380952	3.666667	2.285714
25near100	7.571429	1.857143	6.142857	5.190476
25near60	6.571429	2.714286	4.571429	4.380952
middle60	2.714286	5.619048	2.285714	3.047619
60near100	5.619048	4.809524	3.333333	5.142857
60near25	2.190476	6.142857	2.190476	5.333333

In [143]:
```
scenario = ['Middle', 'Near Hit', 'Near Hit', 'Middle', 'Near Miss', 'Near Miss', 'Mi
df['Scenario'] = scenario
groupby_scenario = df.groupby('Scenario').describe()
groupby_scenario
```

Out[143]:

Scenario	Disappointment count	Disappointment mean	Disappointment std	Disappointment min	Disappointment 25%	Disappointment 50%
Middle	3.0	2.873016	1.909716	1.047619	1.880952	2.714286
Near Hit	3.0	1.428571	0.661545	1.000000	1.047619	1.095238
Near Miss	3.0	6.587302	0.976287	5.619048	6.095238	6.571429

Scenario	Disappointment 75%	Disappointment max	Happiness count	Happiness mean	...	Sadness 75%
Middle	3.785714	4.857143	3.0	5.555556	...	2.976190
Near Hit	1.642857	2.190476	3.0	7.539683	...	1.642857
Near Miss	7.071429	7.571429	3.0	3.126984	...	5.357143

Scenario	Surprise max	Surprise count	Surprise mean	Surprise std	Surprise min	Surprise 25%
Middle	3.666667	3.0	3.698413	1.827190	2.285714	2.666667
Near Hit	2.190476	3.0	6.793651	1.265568	5.333333	6.404762
Near Miss	6.142857	3.0	4.904762	0.454257	4.380952	4.761905

Scenario	Surprise 50%	Surprise 75%	Surprise max
Middle	3.047619	4.404762	5.761905
Near Hit	7.476190	7.523810	7.571429
Near Miss	5.142857	5.166667	5.190476

[3 rows x 32 columns]

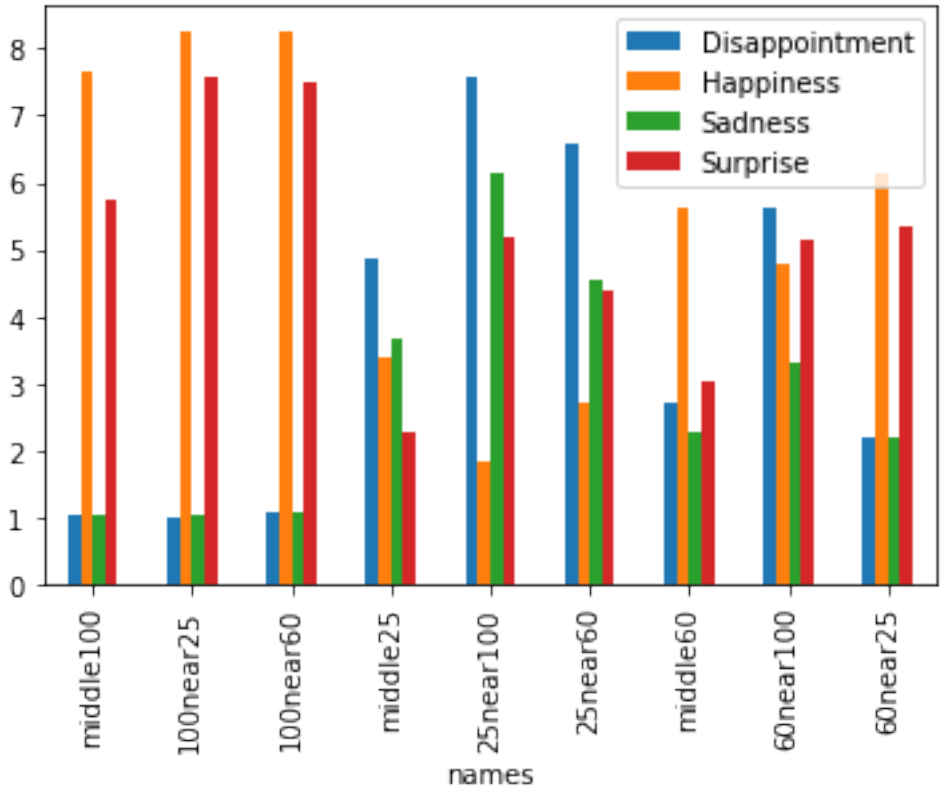
In [144]:
```
for e in emotions:
    print('\n')
    print(e)
    print(groupby_scenario[e])
```

Happiness

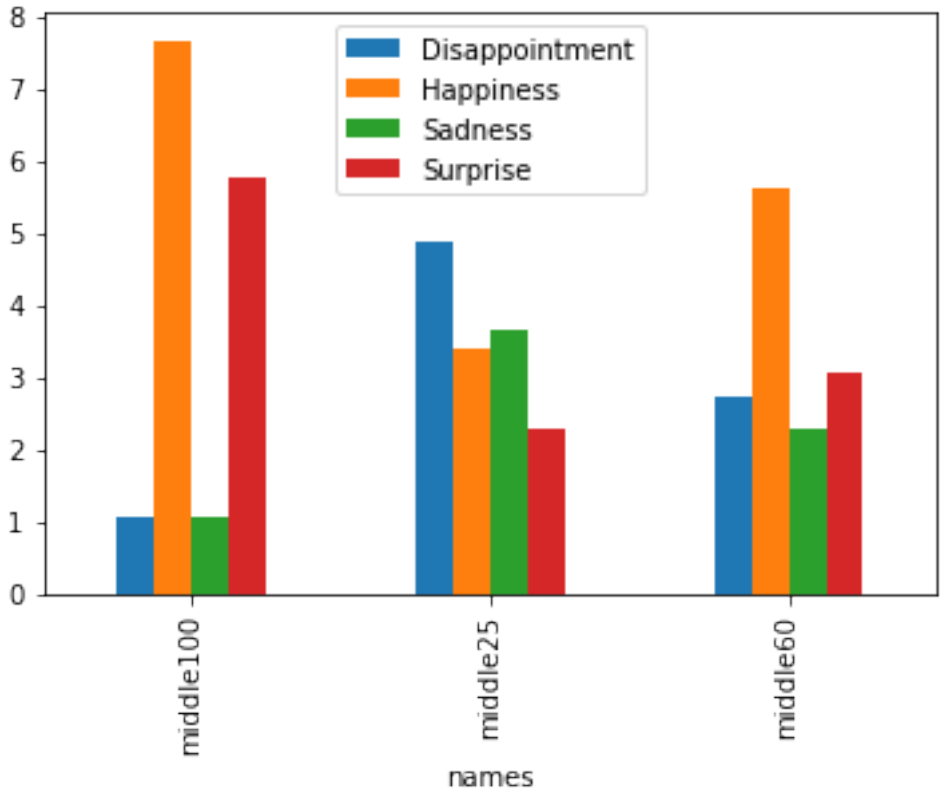
Scenario	count	mean	std	min	25%	50%	75%
Middle	3.0	5.555556	2.143562	3.380952	4.500000	5.619048	6.642857
Near Hit	3.0	7.539683	1.209686	6.142857	7.190476	8.238095	8.238095
Near Miss	3.0	3.126984	1.518841	1.857143	2.285714	2.714286	3.761905

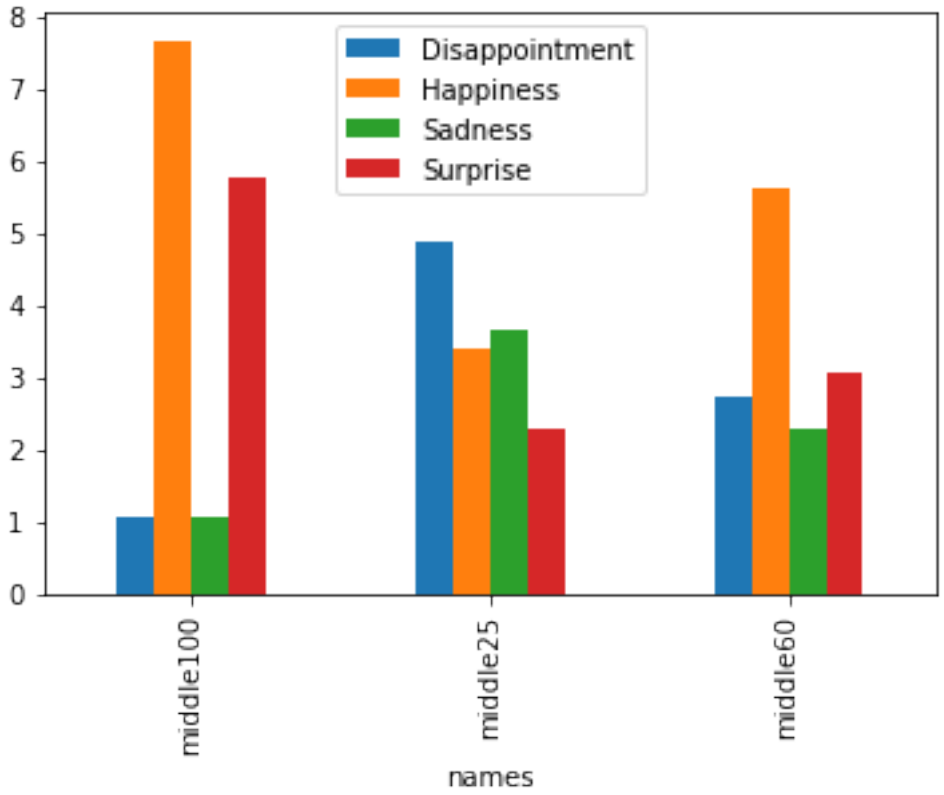
Scenario	max
Middle	7.666667
Near Hit	8.238095

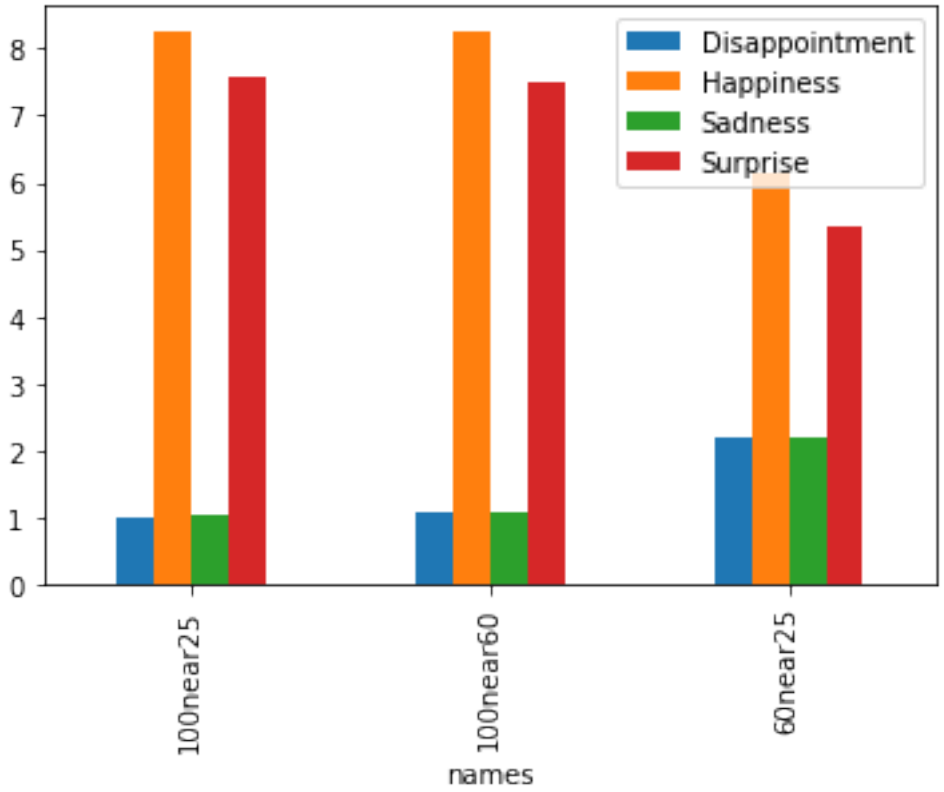
```
Near Miss  4.809524


Sadness
           count      mean       std       min       25%       50%       75%  \
Scenario
Middle       3.0  2.333333  1.310173  1.047619  1.666667  2.285714  2.976190
Near Hit     3.0  1.444444  0.646521  1.047619  1.071429  1.095238  1.642857
Near Miss    3.0  4.682540  1.408054  3.333333  3.952381  4.571429  5.357143

                max
Scenario
Middle     3.666667
Near Hit   2.190476
Near Miss  6.142857


Surprise
           count      mean       std       min       25%       50%       75%  \
Scenario
Middle       3.0  3.698413  1.827190  2.285714  2.666667  3.047619  4.404762
Near Hit     3.0  6.793651  1.265568  5.333333  6.404762  7.476190  7.523810
Near Miss    3.0  4.904762  0.454257  4.380952  4.761905  5.142857  5.166667

                max
Scenario
Middle     5.761905
Near Hit   7.571429
Near Miss  5.190476


Disappointment
           count      mean       std       min       25%       50%       75%  \
Scenario
Middle       3.0  2.873016  1.909716  1.047619  1.880952  2.714286  3.785714
Near Hit     3.0  1.428571  0.661545  1.000000  1.047619  1.095238  1.642857
Near Miss    3.0  6.587302  0.976287  5.619048  6.095238  6.571429  7.071429

                max
Scenario
Middle     4.857143
Near Hit   2.190476
Near Miss  7.571429


In [145]: df.plot.bar()

Out[145]: <matplotlib.axes._subplots.AxesSubplot at 0x1a21173668>
```

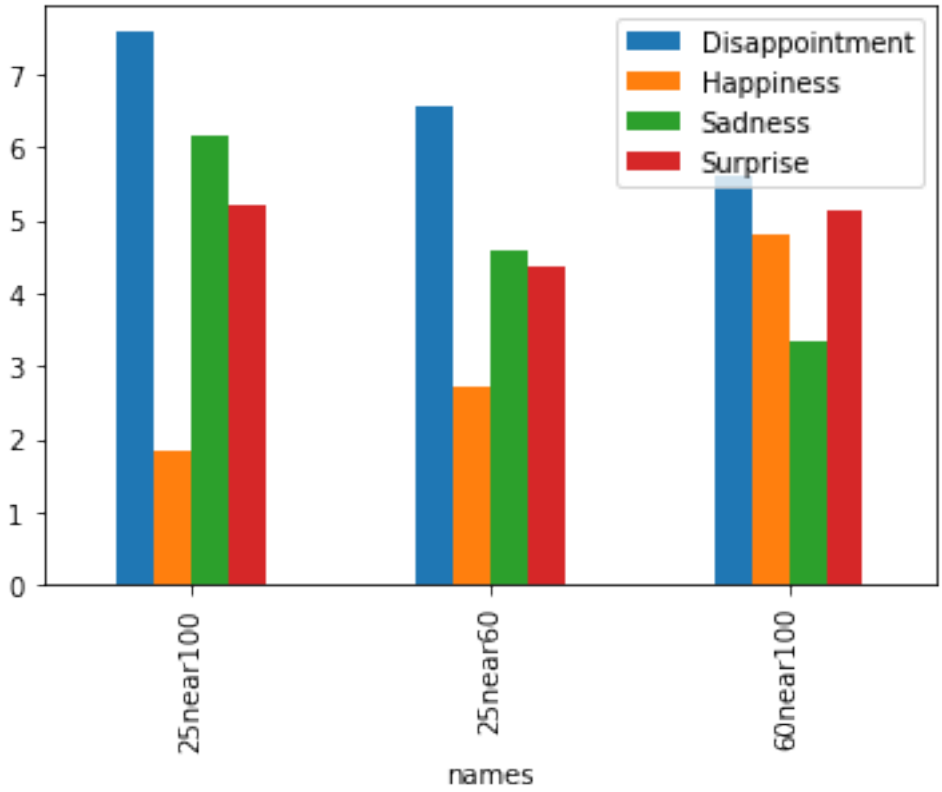



```
In [146]: df.groupby('Scenario').plot.bar()

Out[146]: Scenario
          Middle       AxesSubplot(0.125,0.125;0.775x0.755)
          Near Hit     AxesSubplot(0.125,0.125;0.775x0.755)
          Near Miss    AxesSubplot(0.125,0.125;0.775x0.755)
          dtype: object
```


Disappointment
Happiness
Sadness
Surprise
8
7
6
5
4
3
2
1
0
middle100
middle25
middle60
names


Disappointment
Happiness
Sadness
Surprise
8
7
6
5
4
3
2
1
0
middle100
middle25
middle60
names


Disappointment
Happiness
Sadness
Surprise
8
7
6
5
4
3
2
1
0
100near25
100near60
60near25
names



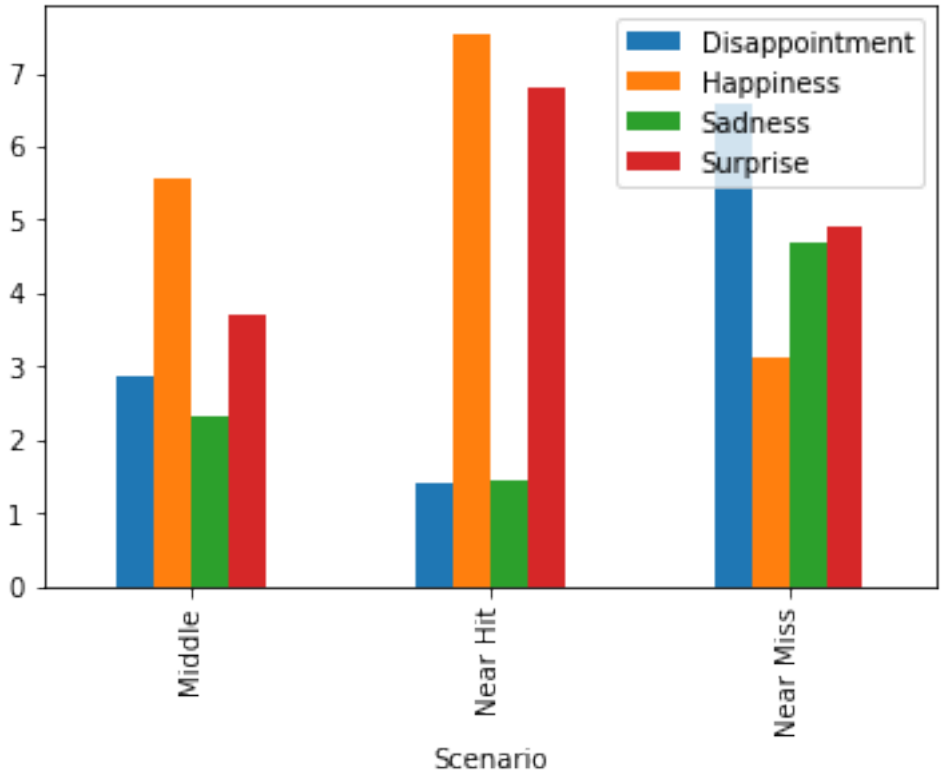

```
In [147]: data = {e: groupby_scenario[e]['mean'] for e in emotions}
          averages = pd.DataFrame(data = data)
          averages
```

Out[147]:

Scenario	Disappointment	Happiness	Sadness	Surprise
Middle	2.873016	5.555556	2.333333	3.698413
Near Hit	1.428571	7.539683	1.444444	6.793651
Near Miss	6.587302	3.126984	4.682540	4.904762

```
In [148]: averages.plot.bar()
```

```
Out[148]: <matplotlib.axes._subplots.AxesSubplot at 0x1a2944f358>
```



0.1 Linear Regression

```
In [149]: import sklearn.linear_model as lm
          import sklearn.metrics as metrics
          import numpy as np

In [162]: linreg = lm.LinearRegression(n_jobs = 8, fit_intercept=True)

In [163]: def NM(dist, at, near):
              return(1/dist * (at-near))

In [164]: PV = .4 * 25 + .4 * 60 + .2 * 100
          PV

Out[164]: 54.0
```

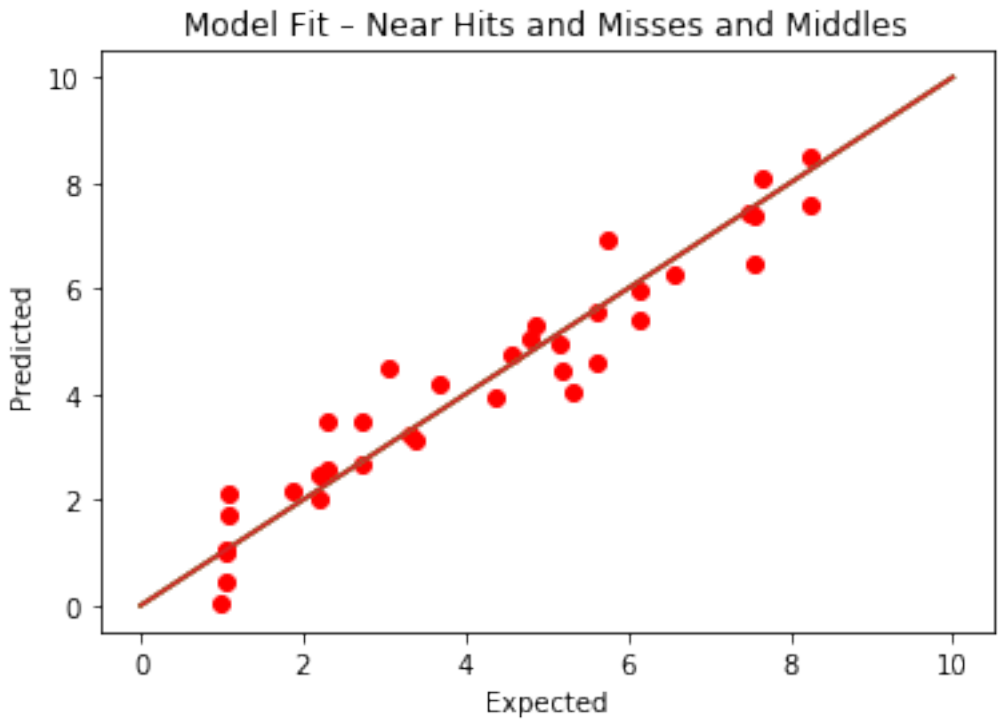
0.1.1 Near hits, misses, and middle

```
In [172]: # get the variable data into X
          values = [[25, 60], [60, 60], [60, 25], [60, 100], [100, 60], [100, 100], [25, 100],
          X = [[x[0], x[0] - PV, abs(x[0] - PV), NM(.05, x[0], x[1])] for x in values]
          # get the target data into Y
```

```
            targets = ['25near60', 'middle60', '60near25', '60near100', 'middle100', '100near60'
            Y = [[df.loc[x][e] for x in targets] for e in emotions]

            HM_coef = []
            HM_intercept = []
            print('-------------------------------------------------------')
            for e in range(len(emotions)):
                HM_coef.append([])
                HM_intercept.append(0)
                print('Emotion:', emotions[e])
                line = linreg.fit(X, Y[e])
                HM_coef[e] = line.coef_
                HM_intercept[e] = line.intercept_
                print('coefs:')
                print('\tWin:\t', line.coef_[0])
                print('\tPE:\t', line.coef_[1])
                print('\tabsPE:\t', line.coef_[2])
                print('\tNM:\t', line.coef_[3])
                print('\nintercept:', '\t', line.intercept_)
                pred = []
                for i in range(len(X)):
                    val = 0
                    for j in range(len(X[i])):
                        val = val + X[i][j] * HM_coef[e][j]
                    val = val + HM_intercept[e]
                    pred.append(val)
                plt.plot(Y[e], pred, 'ro')
                plt.plot([0,1,2,3,4,5,6,7,8,9,10])
                plt.title('Model Fit  Near Hits and Misses and Middles')
                plt.xlabel('Expected')
                plt.ylabel('Predicted')
                print('\nr2:', '\t\t', metrics.r2_score(Y[e], pred))
                print('\n-------------------------------------------------------')
```

```
-------------------------------------------------------
Emotion: Happiness
coefs:
        Win:         0.0309707000191
        PE:         0.0309707000191
        absPE:          -0.0114600437876
        NM:         0.000630694092233

intercept:          3.56952672168

r2:                  0.979521889476

-------------------------------------------------------
Emotion: Sadness
```

```
coefs:
        Win:          -0.0182971850578
        PE:          -0.0182971850578
        absPE:          0.0145388615216
        NM:          -0.000821827744905

intercept:          3.6961613897

r2:                  0.933566720566

-----------------------------------------------------
Emotion: Surprise
coefs:
        Win:          0.0229653285854
        PE:          0.0229653285854
        absPE:          0.0270593869732
        NM:          -0.00061378792148

intercept:          2.80940890208

r2:                  0.658111956811

-----------------------------------------------------
Emotion: Disappointment
coefs:
        Win:          -0.0226282982417
        PE:          -0.0226282982417
        absPE:          0.0115968801314
        NM:          -0.0013924110078

intercept:          4.88540921084

r2:                  0.923104218604

-----------------------------------------------------
```



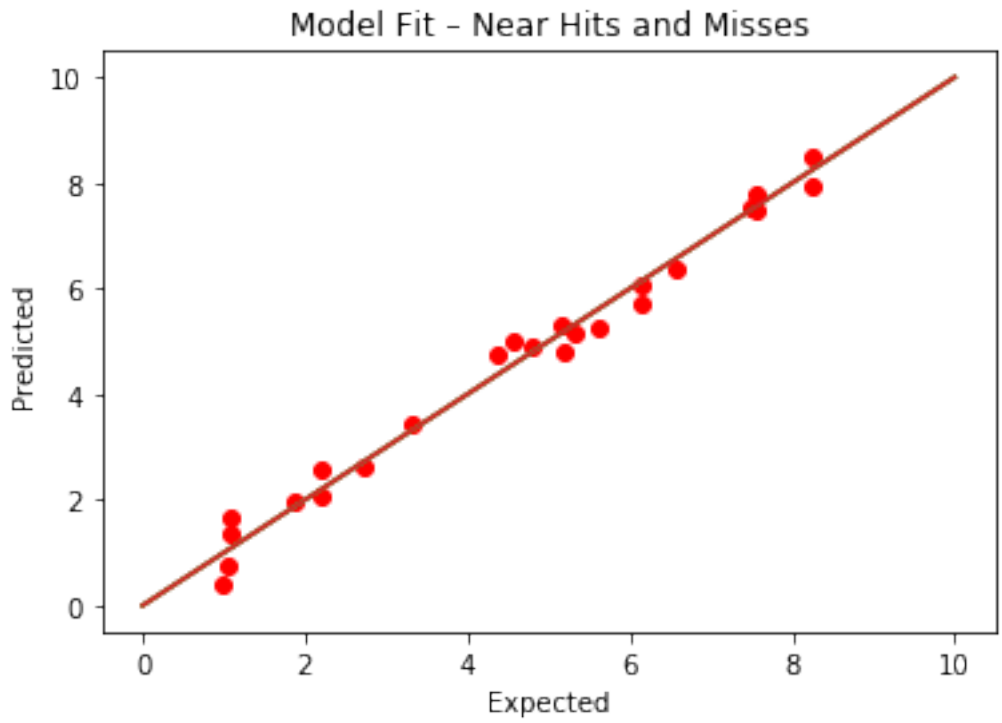
0.1.2 Near Misses and Near Hits

```
In [165]: # get the variable data into X
          values = [[25, 60], [60, 25], [60, 100], [100, 60], [25, 100], [100, 25]]
          X = [[x[0], x[0] - PV, abs(x[0] - PV), NM(.05, x[0], x[1])] for x in values]
          # get the target data into Y
          targets = ['25near60', '60near25', '60near100', '100near60', '25near100', '100near25
          Y = [[df.loc[x][e] for x in targets] for e in emotions]

          HM_coef = []
          HM_intercept = []
          print('------------------------------------------------------------')
          for e in range(len(emotions)):
              HM_coef.append([])
              HM_intercept.append(0)
              print('Emotion:', emotions[e])
              line = linreg.fit(X, Y[e])
              HM_coef[e] = line.coef_
              HM_intercept[e] = line.intercept_
              print('coefs:')
              print('\tWin:\t', line.coef_[0])
              print('\tPE:\t', line.coef_[1])
              print('\tabsPE:\t', line.coef_[2])
```

```
            print('\tNM:\t', line.coef_[3])
            print('\nintercept:', '\t', line.intercept_)
            pred = []
            for i in range(len(X)):
                val = 0
                for j in range(len(X[i])):
                    val = val + X[i][j] * HM_coef[e][j]
                val = val + HM_intercept[e]
                pred.append(val)
            plt.plot(Y[e], pred, 'ro')
            plt.plot([0,1,2,3,4,5,6,7,8,9,10])
            plt.title('Model Fit  Near Hits and Misses')
            plt.xlabel('Expected')
            plt.ylabel('Predicted')
            print('\nr2:', '\t\t', metrics.r2_score(Y[e], pred))
            print('\n----------------------------------------------------------')
```

```
----------------------------------------------------------
Emotion: Happiness
coefs:
        Win:          0.0292757309004
        PE:          0.0292757309004
        absPE:          -0.013341543514
        NM:          0.000794590025359

intercept:           3.66377099912

r2:                   0.994851055968

----------------------------------------------------------
Emotion: Sadness
coefs:
        Win:          -0.0174175156188
        PE:          -0.0174175156188
        absPE:          0.0192426108374
        NM:          -0.00088898281206

intercept:           3.75155598712

r2:                   0.973048110692

----------------------------------------------------------
Emotion: Surprise
coefs:
        Win:          0.0165401132908
        PE:          0.0165401132908
        absPE:          0.0266830870279
        NM:          -8.7348548887e-05
```

```
intercept:          3.98198181129

r2:                  0.962371711543

-------------------------------------------------------
Emotion: Disappointment
coefs:
        Win:         -0.0147919277893
        PE:         -0.0147919277893
        absPE:          0.0114942528736
        NM:         -0.00177796562412

intercept:          4.72316534041

r2:                  0.975650692491

-------------------------------------------------------
```



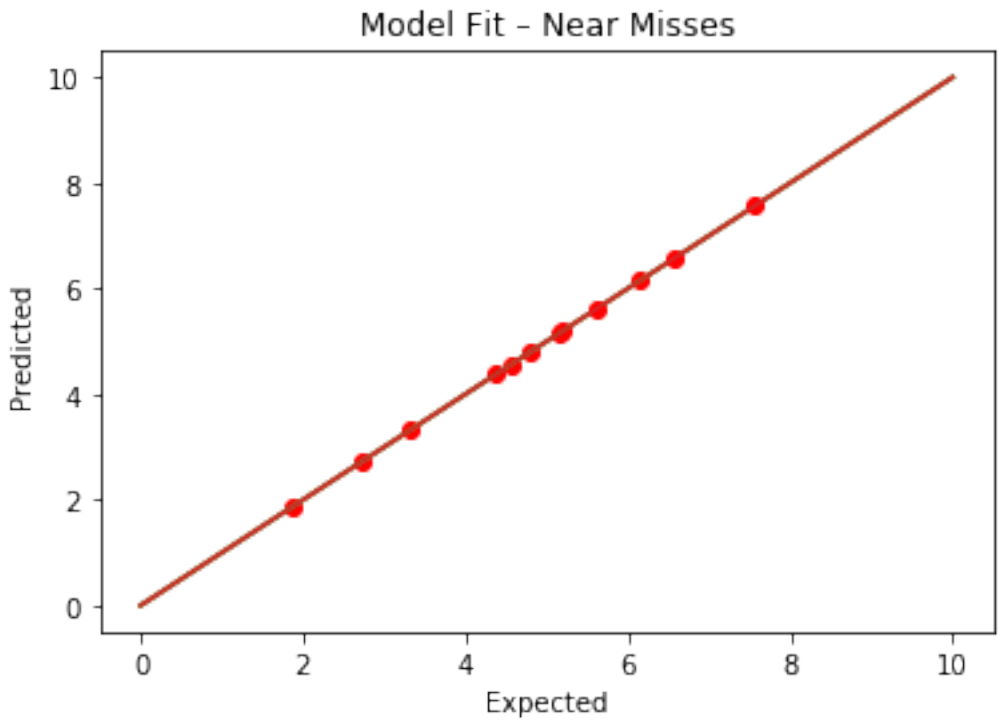
0.1.3 Near Misses

```
In [166]: # get the variable data into X
          values = [[25, 60], [60, 100], [25, 100]]
```

```
            X = [[x[0], x[0] - PV, abs(x[0] - PV), NM(.05, x[0], x[1])] for x in values]
            # get the target data into Y
            targets = ['25near60', '60near100', '25near100']
            Y = [[df.loc[x][e] for x in targets] for e in emotions]

            M_coef = []
            M_intercept = []
            print('-------------------------------------------------------')
            for e in range(len(emotions)):
                M_coef.append([])
                M_intercept.append(0)
                print('Emotion:', emotions[e])
                line = linreg.fit(X, Y[e])
                M_coef[e] = line.coef_
                M_intercept[e] = line.intercept_
                print('coefs:')
                print('\tWin:\t', line.coef_[0])
                print('\tPE:\t', line.coef_[1])
                print('\tabsPE:\t', line.coef_[2])
                print('\tNM:\t', line.coef_[3])
                print('\nintercept:', '\t', line.intercept_)
                pred = []
                for i in range(len(X)):
                    val = 0
                    for j in range(len(X[i])):
                        val = val + X[i][j] * M_coef[e][j]
                    val = val + M_intercept[e]
                    pred.append(val)
                plt.plot(Y[e], pred, 'ro')
                plt.plot([0,1,2,3,4,5,6,7,8,9,10])
                plt.title('Model Fit  Near Misses')
                plt.xlabel('Expected')
                plt.ylabel('Predicted')
                print('\nr2:', '\t\t', metrics.r2_score(Y[e], pred))
                print('\n-------------------------------------------------------')
```

```
-------------------------------------------------------
Emotion: Happiness
coefs:
        Win:          0.0258755734587
        PE:          0.0258755734587
        absPE:          -0.0170039482728
        NM:          0.00107142857143

intercept:          4.06090250803

r2:                  1.0
```

```
------------------------------------------------------
Emotion: Sadness
coefs:
        Win:          -0.0168540897393
        PE:          -0.0168540897393
        absPE:          0.0110755446858
        NM:          -0.00196428571429

intercept:           2.80782141658

r2:                   1.0

------------------------------------------------------
Emotion: Surprise
coefs:
        Win:          0.0077626720376
        PE:          0.0077626720376
        absPE:          -0.00510118448185
        NM:          -0.0010119047619

intercept:           3.85160408574

r2:                   1.0

------------------------------------------------------
Emotion: Disappointment
coefs:
        Win:          -0.0126580508
        PE:          -0.0126580508
        absPE:          0.0083181476686
        NM:          -0.00125

intercept:           5.40457008584

r2:                   1.0

------------------------------------------------------
```



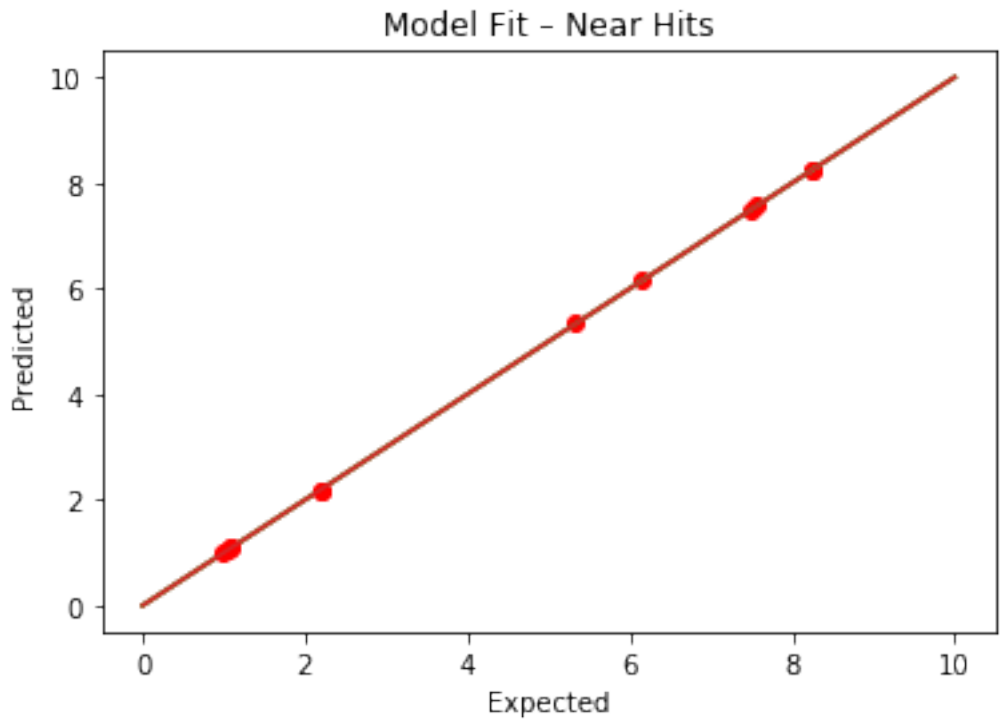
0.1.4 Near Hits

```
In [167]: # get the variable data into X
          values = [[60, 25],[100, 60], [100, 25]]
          X = [[x[0], x[0] - PV, abs(x[0] - PV), NM(.05, x[0], x[1])] for x in values]
          # get the target data into Y
          targets = ['60near25', '100near60', '100near25']
          Y = [[df.loc[x][e] for x in targets] for e in emotions]

          H_coef = []
          H_intercept = []
          print('-------------------------------------------------------')
          for e in range(len(emotions)):
              H_coef.append([])
              H_intercept.append(0)
              print('Emotion:', emotions[e])
              line = linreg.fit(X, Y[e])
              H_coef[e] = line.coef_
              H_intercept[e] = line.intercept_
              print('coefs:')
              print('\tWin:\t', line.coef_[0])
              print('\tPE:\t', line.coef_[1])
              print('\tabsPE:\t', line.coef_[2])
```

```
            print('\tNM:\t', line.coef_[3])
            print('\nintercept:', '\t', line.intercept_)
            pred = []
            for i in range(len(X)):
                val = 0
                for j in range(len(X[i])):
                    val = val + X[i][j] * H_coef[e][j]
                val = val + H_intercept[e]
                pred.append(val)
            plt.plot(Y[e], pred, 'ro')
            plt.plot([0,1,2,3,4,5,6,7,8,9,10])
            plt.title('Model Fit  Near Hits')
            plt.xlabel('Expected')
            plt.ylabel('Predicted')
            print('\nr2:', '\t\t', metrics.r2_score(Y[e], pred))
            print('\n----------------------------------------------------------')
```

```
----------------------------------------------------------
Emotion: Happiness
coefs:
        Win:         0.0174603174603
        PE:         0.0174603174603
        absPE:         0.0174603174603
        NM:         -3.46944695195e-18

intercept:          4.88571428571

r2:                  1.0

----------------------------------------------------------
Emotion: Sadness
coefs:
        Win:         -0.00907029478458
        PE:         -0.00907029478458
        absPE:         -0.00907029478458
        NM:         -6.80272108844e-05

intercept:          2.89115646259

r2:                  1.0

----------------------------------------------------------
Emotion: Surprise
coefs:
        Win:         0.0177437641723
        PE:         0.0177437641723
        absPE:         0.0177437641723
        NM:         0.000136054421769
```

```
intercept:          3.96054421769

r2:                  1.0

-------------------------------------------------------
Emotion: Disappointment
coefs:
        Win:         -0.00901360544218
        PE:         -0.00901360544218
        absPE:          -0.00901360544218
        NM:         -0.000136054421769

intercept:          2.93469387755

r2:                  1.0

-------------------------------------------------------
```



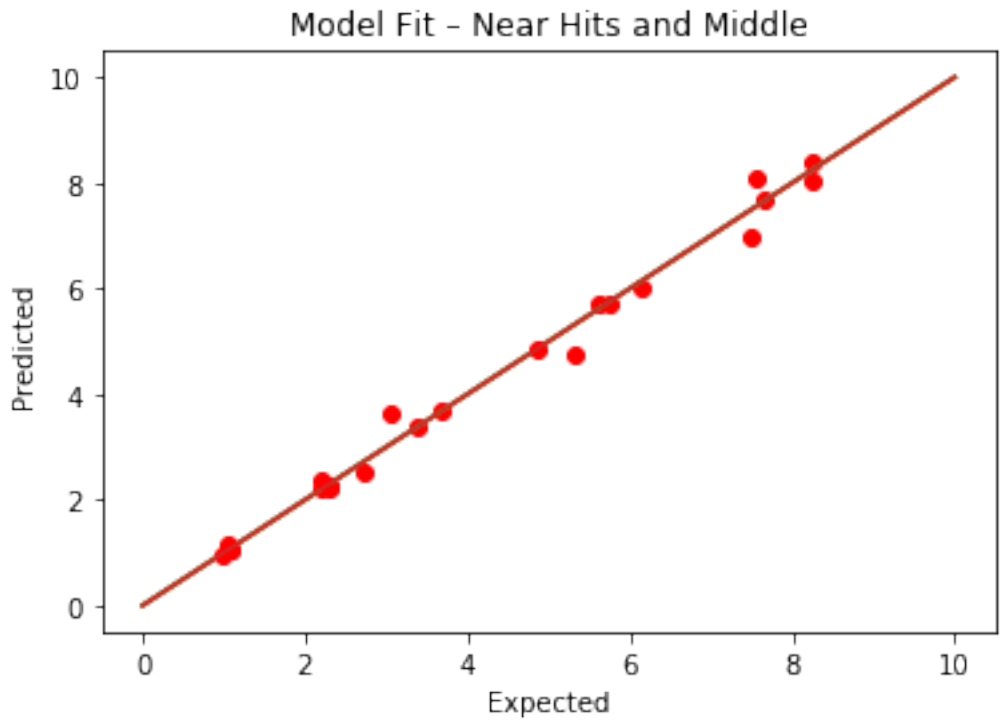
0.1.5 Near Hits and Middle

```
In [170]: # get the variable data into X
          values = [[60, 25], [60, 60],[100, 60], [100, 100], [100, 25], [25, 25]]
```

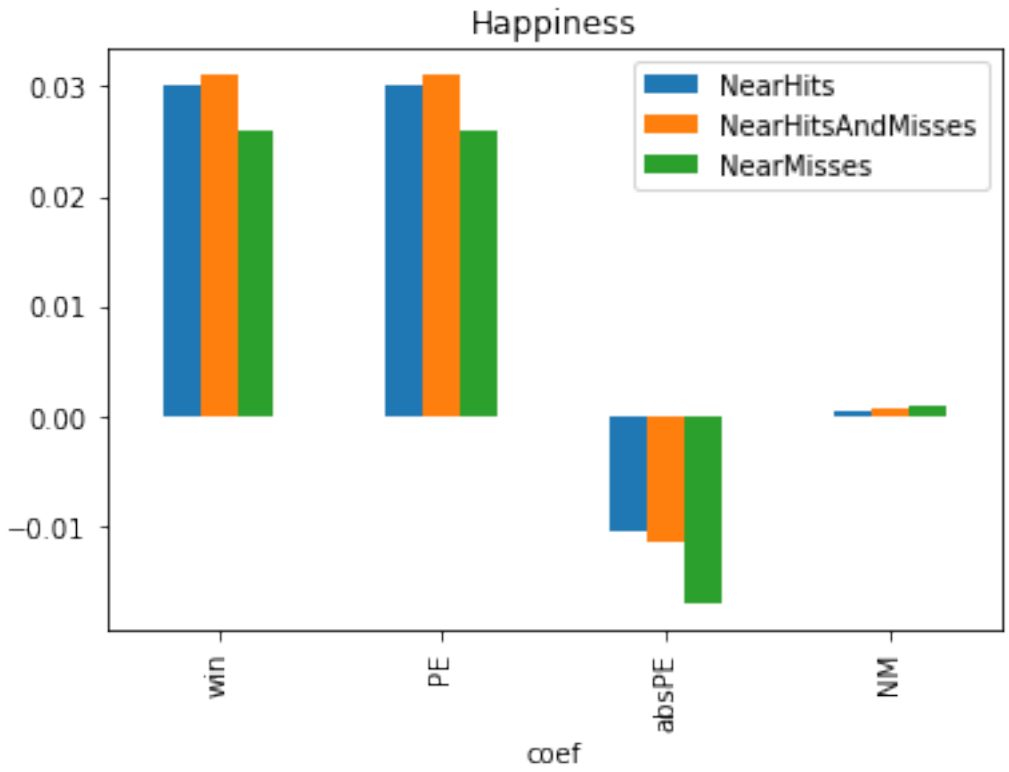
```
            X = [[x[0], x[0] - PV, abs(x[0] - PV), NM(.05, x[0], x[1])] for x in values]
            # get the target data into Y
            targets = ['60near25', 'middle60', '100near60', 'middle100', '100near25', 'middle25']
            Y = [[df.loc[x][e] for x in targets] for e in emotions]

            H_coef = []
            H_intercept = []
            print('-------------------------------------------------------')
            for e in range(len(emotions)):
                H_coef.append([])
                H_intercept.append(0)
                print('Emotion:', emotions[e])
                line = linreg.fit(X, Y[e])
                H_coef[e] = line.coef_
                H_intercept[e] = line.intercept_
                print('coefs:')
                print('\tWin:\t', line.coef_[0])
                print('\tPE:\t', line.coef_[1])
                print('\tabsPE:\t', line.coef_[2])
                print('\tNM:\t', line.coef_[3])
                print('\nintercept:', '\t', line.intercept_)
                pred = []
                for i in range(len(X)):
                    val = 0
                    for j in range(len(X[i])):
                        val = val + X[i][j] * H_coef[e][j]
                    val = val + H_intercept[e]
                    pred.append(val)
                plt.plot(Y[e], pred, 'ro')
                plt.plot([0,1,2,3,4,5,6,7,8,9,10])
                plt.title('Model Fit  Near Hits and Middle')
                plt.xlabel('Expected')
                plt.ylabel('Predicted')
                print('\nr2:', '\t\t', metrics.r2_score(Y[e], pred))
                print('\n-------------------------------------------------------')
```

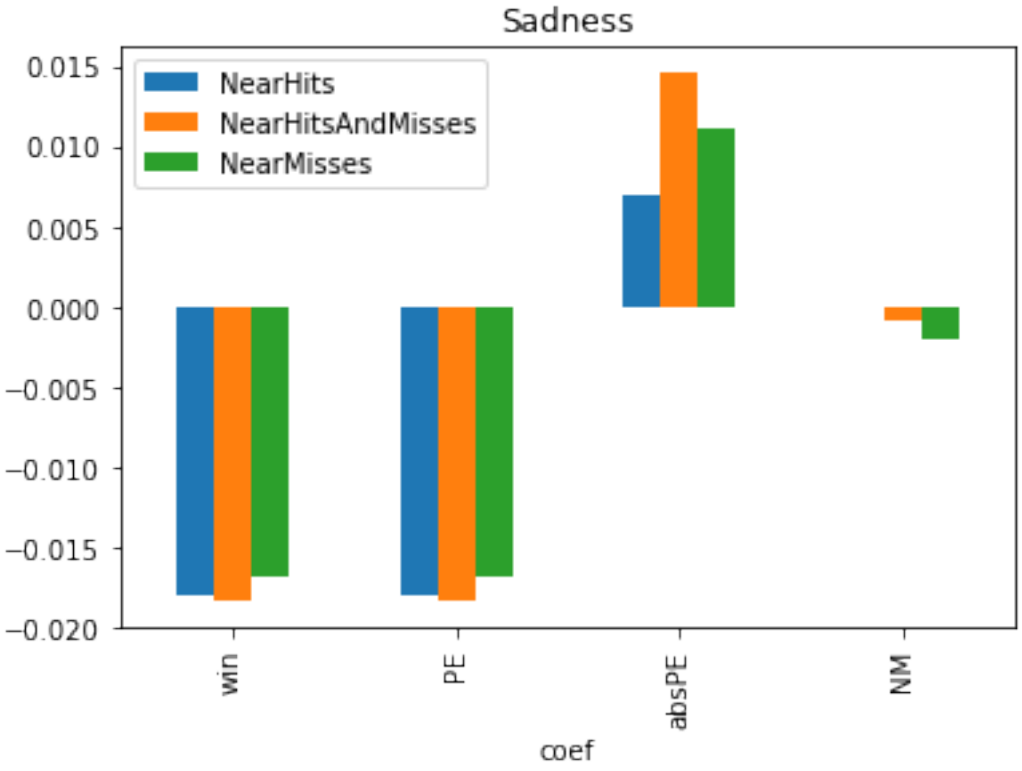
```
-------------------------------------------------------
Emotion: Happiness
coefs:
        Win:          0.0299890065382
        PE:          0.0299890065382
        absPE:          -0.0105305791819
        NM:          0.00045304634612

intercept:          3.80629520338

r2:                  0.995930462555
```

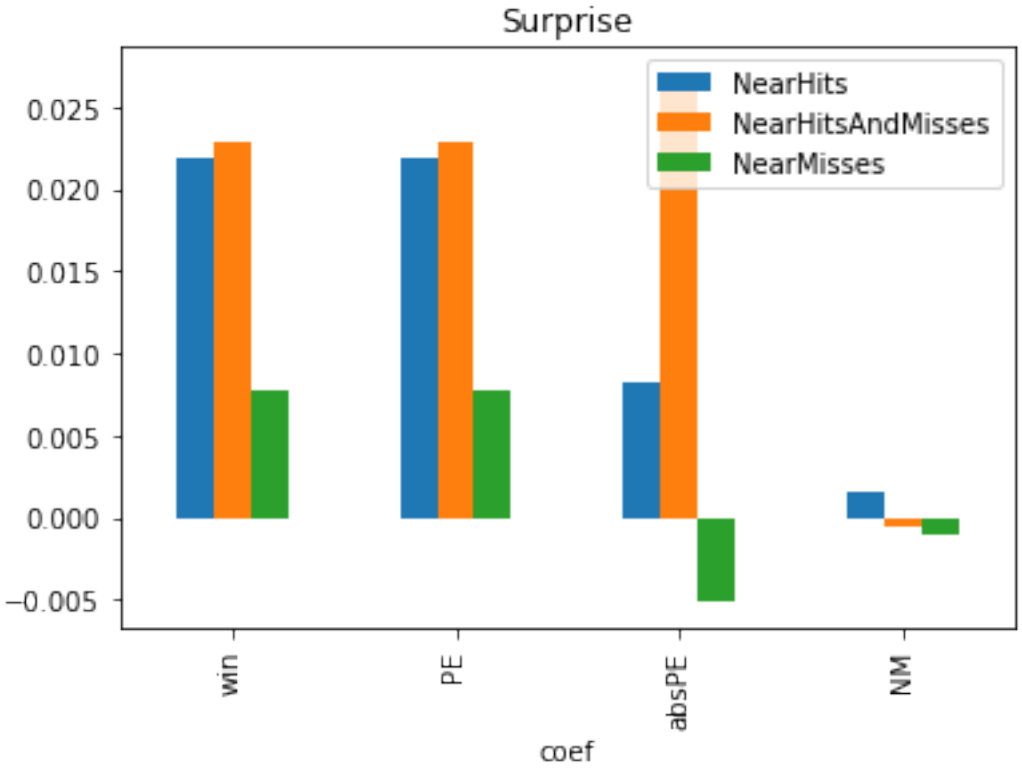
```
------------------------------------------------------
Emotion: Sadness
coefs:
        Win:          -0.0180200246605
        PE:          -0.0180200246605
        absPE:          0.00691605464409
        NM:          -2.314413007e-05

intercept:          3.39402098335

r2:                  0.999026060624

------------------------------------------------------
Emotion: Surprise
coefs:
        Win:          0.0219390266896
        PE:          0.0219390266896
        absPE:          0.00818611372148
        NM:          0.00159231614882

intercept:          2.13607309455

r2:                  0.950167736559

------------------------------------------------------
Emotion: Disappointment
coefs:
        Win:          -0.0268911223307
        PE:          -0.0268911223307
        absPE:          0.0203086000395
        NM:          -0.000157958687728

intercept:          4.16062896667

r2:                  0.990485925533

------------------------------------------------------
```

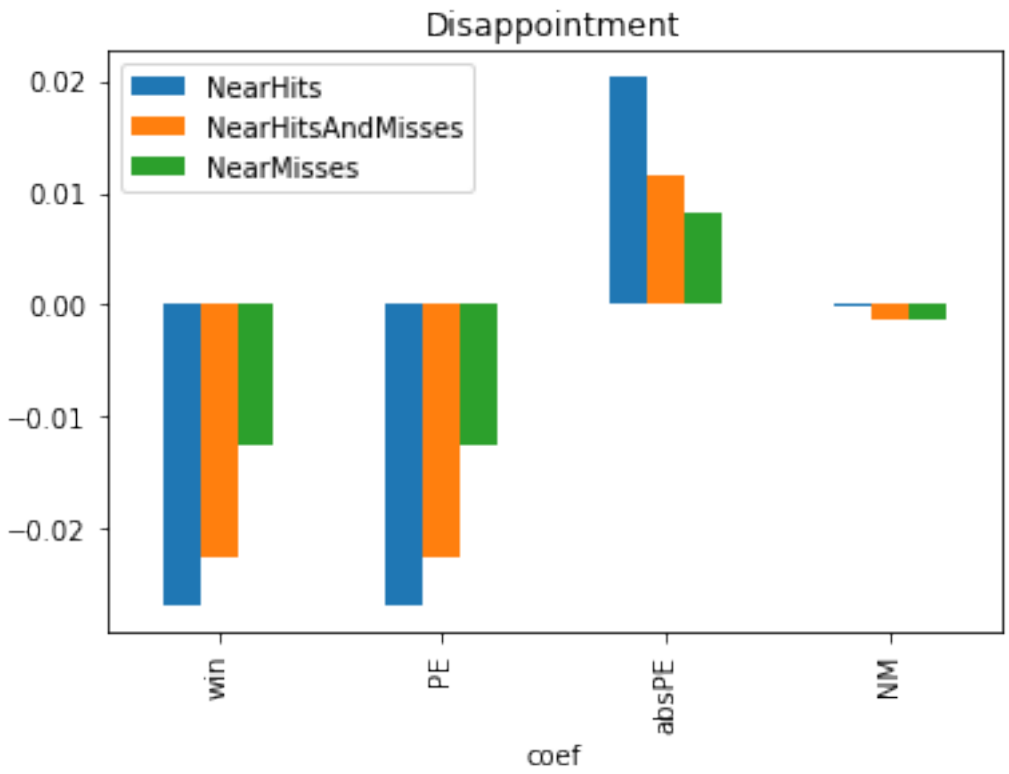



```
In [182]: for i in range(len(emotions)):
              data = {'NearHitsAndMisses': HM_coef[i], 'NearMisses' : M_coef[i], 'NearHits' : H
              dataframe = pd.DataFrame(data = data)
              dataframe['coef'] = ['win', 'PE', 'absPE', 'NM']
              dataframe = dataframe.set_index('coef')
              dataframe.plot.bar(title=emotions[i])
```


Happiness
NearHits
NearHitsAndMisses
NearMisses
0.03
0.02
0.01
0.00
−0.01
win
PE
absPE
NM
coef


Sadness
NearHits
NearHitsAndMisses
NearMisses
0.015
0.010
0.005
0.000
−0.005
−0.010
−0.015
−0.020
win
PE
absPE
NM
coef


Surprise
NearHits
NearHitsAndMisses
NearMisses
0.025
0.020
0.015
0.010
0.005
0.000
−0.005
win
PE
absPE
NM
coef


Disappointment
NearHits
NearHitsAndMisses
NearMisses
0.02
0.01
0.00
−0.01
−0.02
win
PE
absPE
NM
coef