In [61]:
```
import asyncio
from pyppeteer import launch
import pandas as pad
import os
import glob
import soundfile
from sklearn import metrics
import sys
import seaborn as sb
from sklearn.metrics import confusion_matrix
from sklearn.metrics import classification_report
from sklearn.preprocessing import StandardScaler , OneHotEncoder
from sklearn.metrics import accuracy_score
from sklearn.model_selection import train_test_split
from IPython.display import Audio
import matplotlib.pyplot as mplt
import numpy as nm
import soundfile
import librosa
import librosa.display
```

In [62]:
```
import warnings
if not sys.warnoptions:
    warnings.simplefilter("ignore")
warnings.filterwarnings("ignore", category = DeprecationWarning)
```

In [63]:
```
Ravedess = "D:\Ravedess dataset\\"
print(Ravedess)
```

```
D:\Ravedess dataset\
```

In [64]:
```
Ravedessdir = os.listdir(Ravedess)
print(Ravedessdir)
```

```
['Actor_01', 'Actor_02', 'Actor_03', 'Actor_04', 'Actor_05', 'Actor_06', 'Actor_07', 'Ac
tor_08', 'Actor_09', 'Actor_10', 'Actor_11', 'Actor_12', 'Actor_13', 'Actor_14', 'Actor_
15', 'Actor_16', 'Actor_17', 'Actor_18', 'Actor_19', 'Actor_20', 'Actor_21', 'Actor_22',
'Actor_23', 'Actor_24']
```

In [65]:
```
filemotion = []
filepath = []

for dir in Ravedessdir:
    actor = os.listdir(Ravedess + dir)
    for file in actor:
        part =file.split('.')[0]
        part = file.split('-')
        filemotion.append(int(part[2]))
        filepath.append(Ravedess + dir + '/'+ file)
emo_df = pad.DataFrame(filemotion, columns = ['Emotion'])
path_df = pad.DataFrame(filepath, columns = ['Path'])
rave_df = pad.concat([emo_df, path_df] , axis = 1 )
```

In [66]:
```
rave_df.Emotion.replace({1:'neutral',2:'calm', 3: 'happy', 4:'sad' , 5:'angry' , 6:'fea
rave_df.head()
```

Out[66]:

	Emotion	Path
0	neutral	D:\Ravedess dataset\Actor_01/03-01-01-01-01-01...
1	neutral	D:\Ravedess dataset\Actor_01/03-01-01-01-01-02...
2	neutral	D:\Ravedess dataset\Actor_01/03-01-01-01-02-01...
3	neutral	D:\Ravedess dataset\Actor_01/03-01-01-01-02-02...
4	calm	D:\Ravedess dataset\Actor_01/03-01-02-01-01-01...

In [67]:
```
datapath = pad.concat([rave_df], axis=0)
datapath. to_csv("data_path.csv", index=False)
datapath.head()
```

Out[67]:

	Emotion	Path
0	neutral	D:\Ravedess dataset\Actor_01/03-01-01-01-01-01...
1	neutral	D:\Ravedess dataset\Actor_01/03-01-01-01-01-02...
2	neutral	D:\Ravedess dataset\Actor_01/03-01-01-01-02-01...
3	neutral	D:\Ravedess dataset\Actor_01/03-01-01-01-02-02...
4	calm	D:\Ravedess dataset\Actor_01/03-01-02-01-01-01...

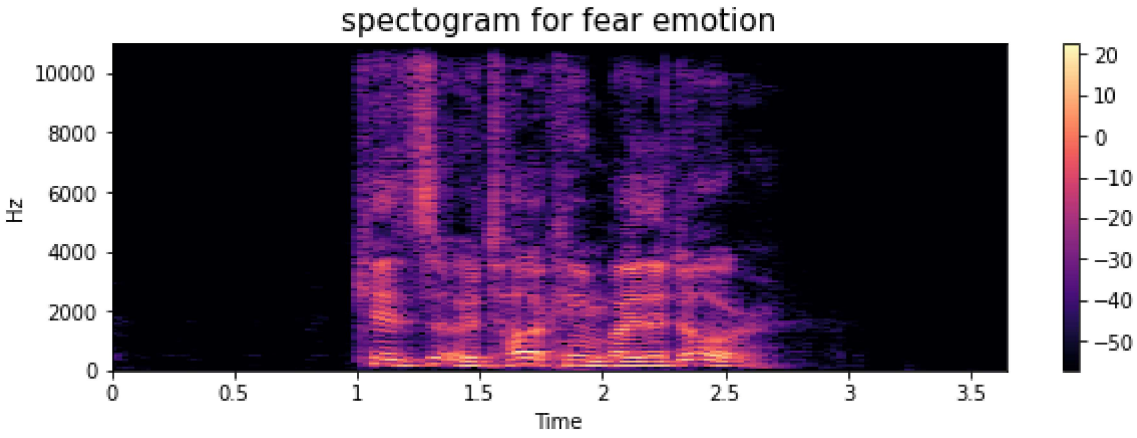
In [68]:
```
def spect(data , sr, e):
    X= librosa.stft(data)
    Xdb = librosa.amplitude_to_db(abs(X))
    mplt.figure(figsize = (10,3))
    mplt.title('spectogram for {} emotion'.format(e), size = 15)
    librosa.display.specshow(Xdb,sr=sr, x_axis='time' , y_axis='hz')
    mplt.colorbar()
```

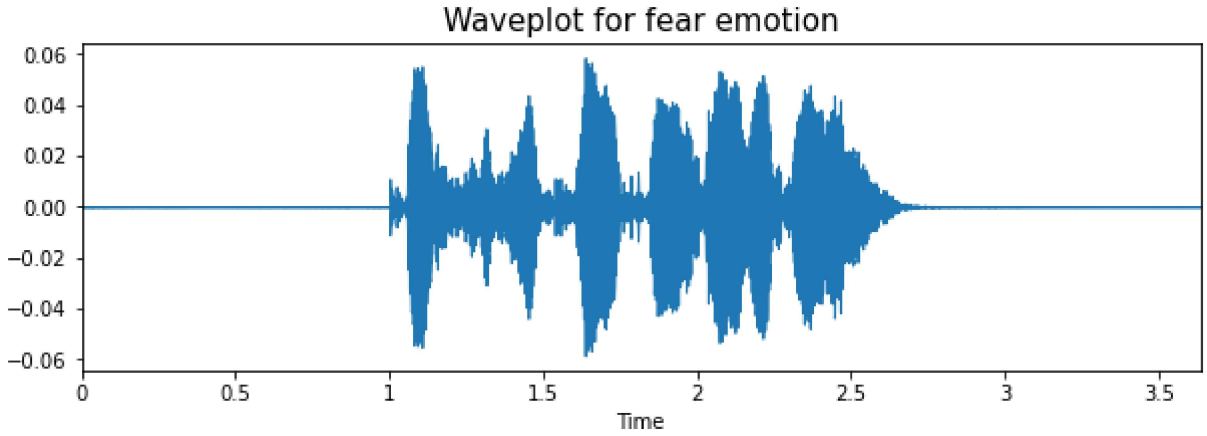
In [69]:
```
def wplot(data, sr, e):
    mplt.figure(figsize = (10,3))
    mplt.title('Waveplot for {} emotion'.format(e) , size=15)
    librosa.display.waveplot(data,sr)
    mplt.show()
```

In [70]:
```
emotion = 'fear'
path = nm.array(datapath.Path[datapath.Emotion ==emotion])[1]
data, samplingrate = librosa.load(path)

spect(data, samplingrate,emotion)
wplot(data,samplingrate,emotion)
Audio(path)
```

```
[D:matplotlib.colorbar] locator: %r
```





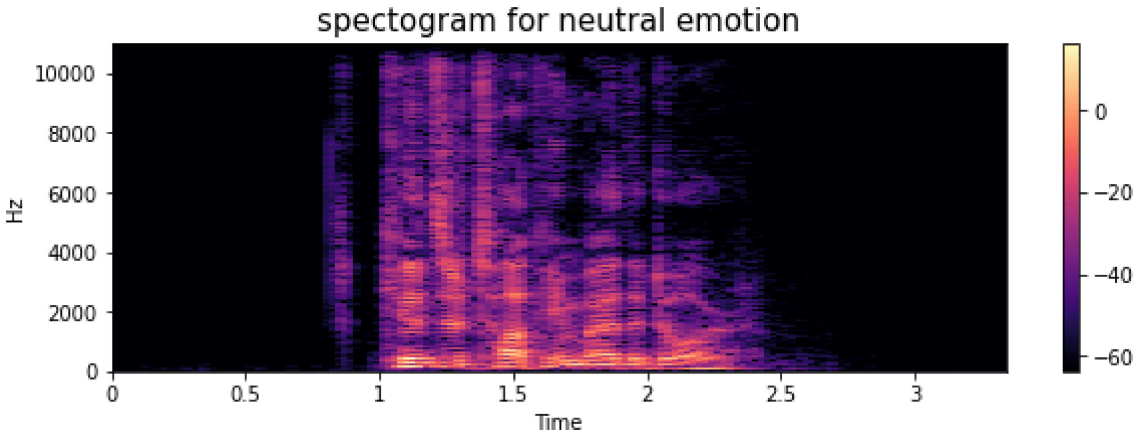
Out[70]:

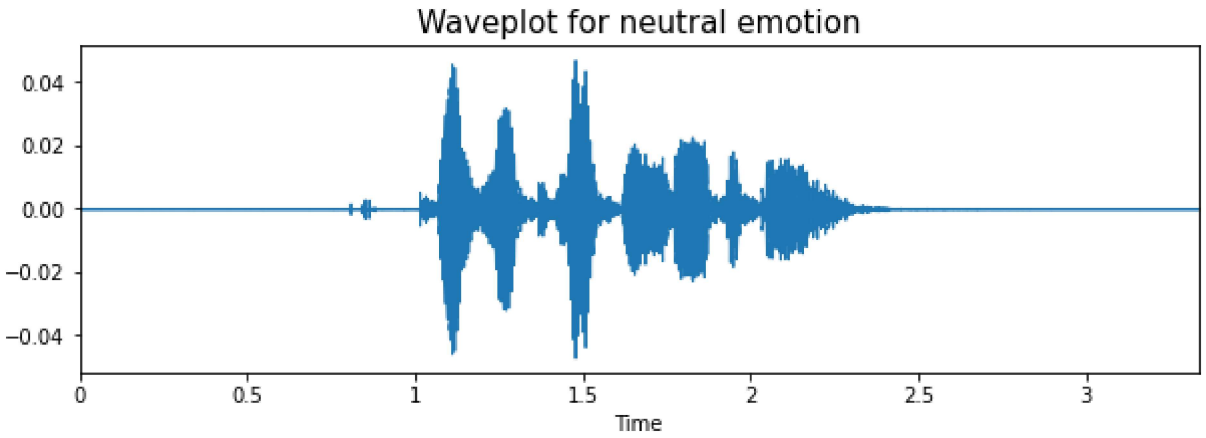
0:00 / 0:03

In [71]:

```
emotion = 'neutral'
path = nm.array(datapath.Path[datapath.Emotion==emotion])[1]
data, samplingrate = librosa.load(path)
spect(data, samplingrate,emotion)
wplot(data,samplingrate,emotion)
Audio(path)
```

```
[D:matplotlib.colorbar] locator: %r
```





Out[71]:

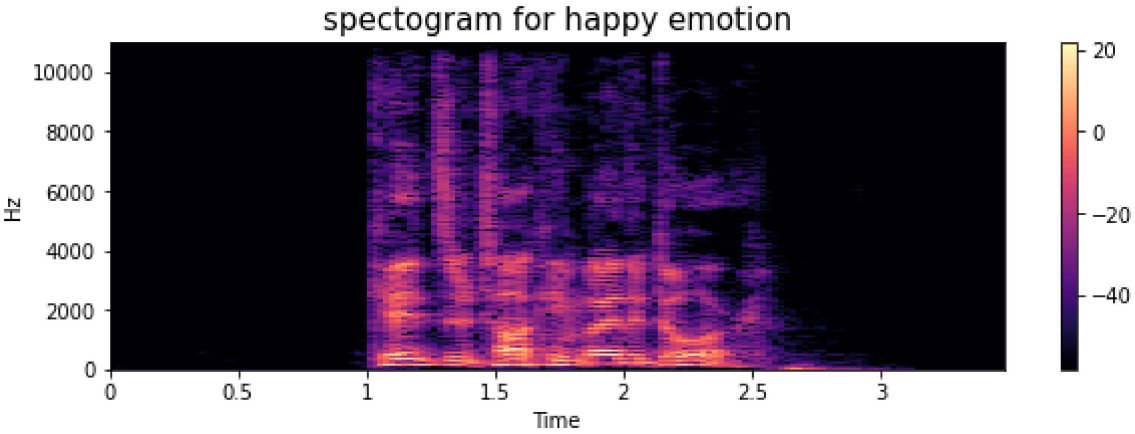
0:00 / 0:03

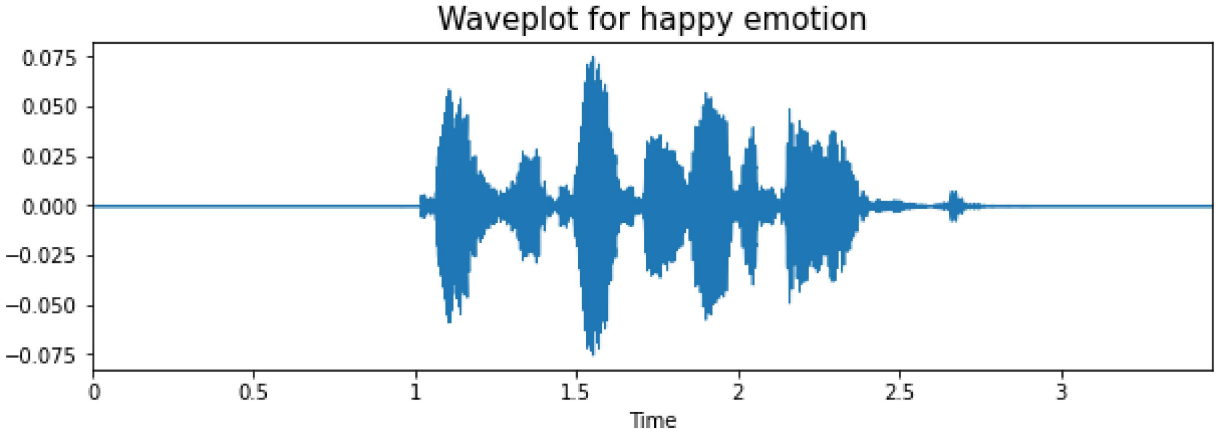
In [72]:

```
emotion = 'happy'
path = nm.array(datapath.Path[datapath.Emotion ==emotion])[1]
data, samplingrate = librosa.load(path)

spect(data, samplingrate,emotion)
wplot(data,samplingrate,emotion)
Audio(path)
```

```
[D:matplotlib.colorbar] locator: %r
```





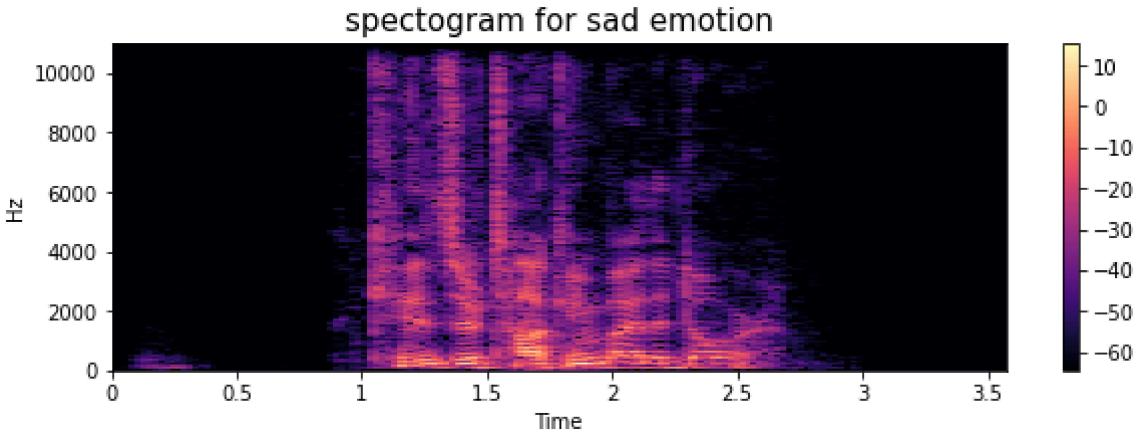
Out[72]:

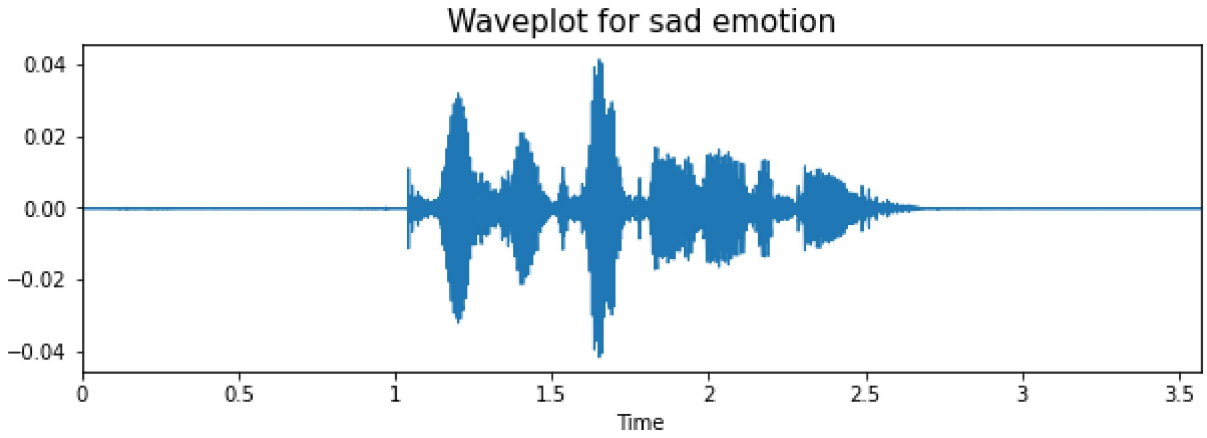
0:00 / 0:03

In [73]:
```
emotion = 'sad'
path = nm.array(datapath.Path[datapath.Emotion ==emotion])[1]
data, samplingrate = librosa.load(path)

spect(data, samplingrate,emotion)
wplot(data,samplingrate,emotion)
Audio(path)
```

```
[D:matplotlib.colorbar] locator: %r
```





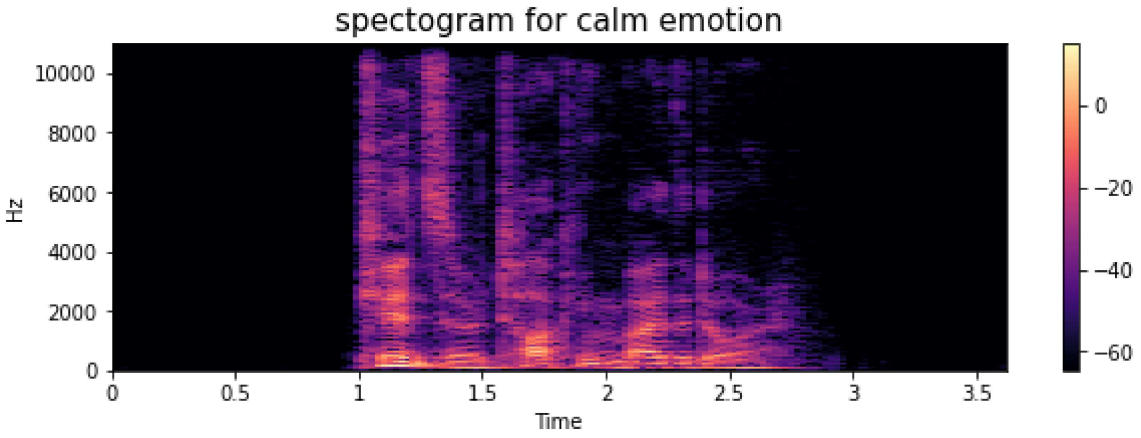
Out[73]:

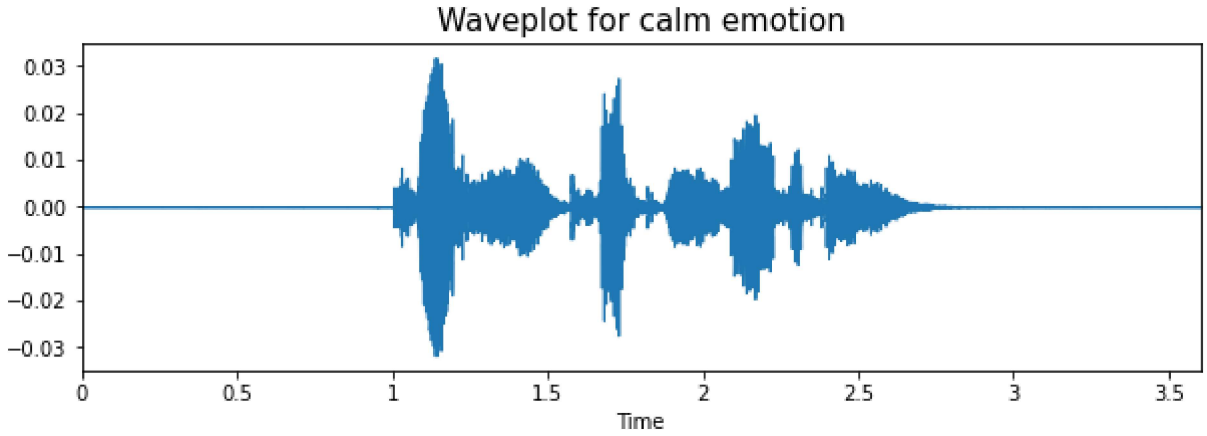
0:00 / 0:03

In [74]:
```
emotion = 'calm'
path = nm.array(datapath.Path[datapath.Emotion ==emotion])[1]
data, samplingrate = librosa.load(path)

spect(data, samplingrate,emotion)
wplot(data,samplingrate,emotion)
Audio(path)
```

```
[D:matplotlib.colorbar] locator: %r
```





Out[74]:

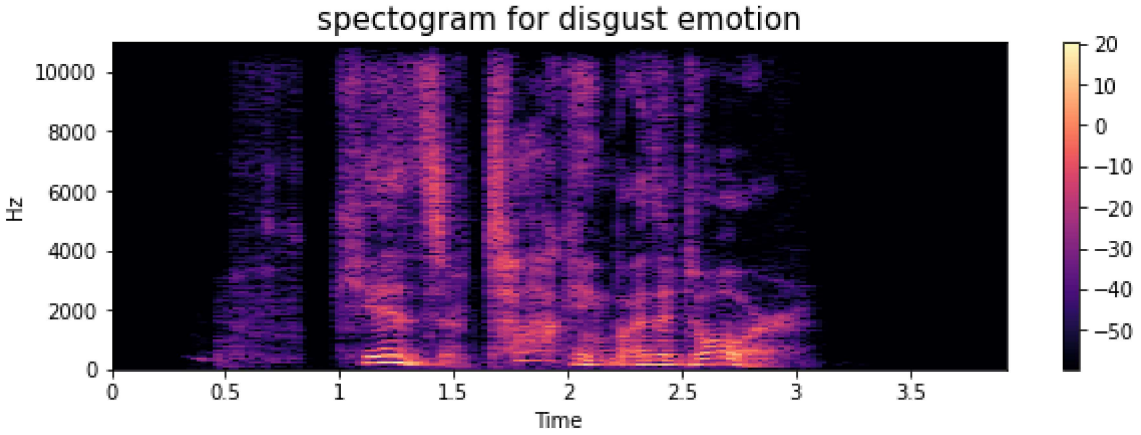
0:00 / 0:03

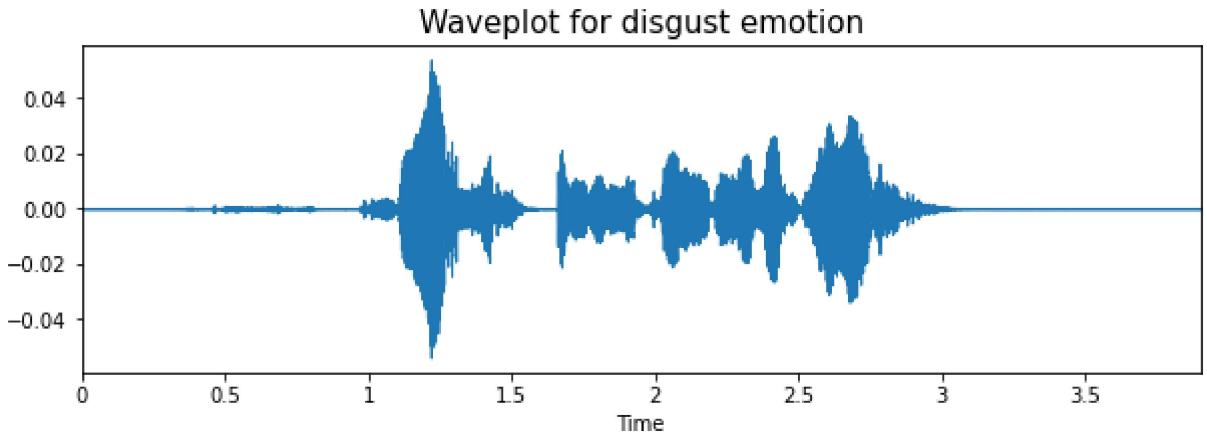
In [75]:

```
emotion = 'disgust'
path = nm.array(datapath.Path[datapath.Emotion ==emotion])[1]
data, samplingrate = librosa.load(path)

spect(data, samplingrate,emotion)
wplot(data,samplingrate,emotion)
Audio(path)
```

```
[D:matplotlib.colorbar] locator: %r
```





Out[75]:

0:00 / 0:03

In [ ]:

In [ ]: