In [367]:
```python
import tweepy
import numpy as np
import pandas as pd
from vaderSentiment.vaderSentiment import SentimentIntensityAnalyzer
analyzer = SentimentIntensityAnalyzer()
import matplotlib.pyplot as plt
import matplotlib.axes as ax
import matplotlib.lines as mlines
from config import consumer_key, consumer_secret, access_token, access_token_secret
```

In [368]:
```python
auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_token, access_token_secret)
api = tweepy.API(auth, parser=tweepy.parsers.JSONParser())
```

```
In [369]:  targets=["BBCWorld","CBSNews","CNN","FoxNews","nytimes"]
           oldest_tweet = None
           sentiments_pd_list=[]
           sentiments=[]
           colors=[]

           senti_mean_list=[]

           for x in range(5):

               counter=1
               public_tweets = api.user_timeline(targets[x],
                                     count=100,
                                     result_type="recent",
                                     max_id=oldest_tweet)

               for tweet in public_tweets:
                   comp_senti_sum=0
                   results = analyzer.polarity_scores(tweet["text"])
                   compound = results["compound"]
                   pos = results["pos"]
                   neu = results["neu"]
                   neg = results["neg"]

                   sentiments.append({"Date": tweet["created_at"],
                                     "Compound": compound,
                                     "Positive": pos,
                                     "Negative": neu,
                                     "Neutral": neg,
                                     "Tweets Ago": counter,
                                     "target": targets[x]})

                   counter+=1
                   comp_senti_sum+=compound

                   if targets[x]=="BBCWorld":
                       colors.append("LightSkyBlue")
                   elif targets[x]=="CBSNews":
                       colors.append("Green")
                   elif targets[x]=="CNN":
                       colors.append("Red")
                   elif targets[x]=="FoxNews":
                       colors.append("Blue")
                   elif targets[x]=="nytimes":
                       colors.append("Gold")

               senti_mean=comp_senti_sum/100
               senti_mean_list.append(senti_mean)

           sentiments_pd = pd.DataFrame.from_dict(sentiments)
           sentiments_pd.to_csv('out.csv')
```

```
In [370]:  senti_mean_list
```

```
Out[370]:  [-0.002263, 0.0, 0.004019, 0.000258, -0.007184]
```

In [371]:
```python
x_vals = sentiments_pd["Tweets Ago"]
y_vals = sentiments_pd["Compound"]
plt.scatter(x_vals, y_vals, marker="o",facecolors=colors,edgecolors="black",alpha=1)
plt.title("Sentiment analysis of media tweets(07/31/2018)")
plt.xlabel("Tweets ago")
plt.ylabel("Tweet polarity")
plt.grid(True)
line1 = mlines.Line2D(range(5), range(2), color="white", marker='o',markersize=8,markerfacecolor="LightSkyBlue")
line2 = mlines.Line2D(range(1), range(1), color="white", marker='o',markersize=8,markerfacecolor="green")
line3 = mlines.Line2D(range(1), range(1), color="white", marker='o',markersize=8,markerfacecolor="Red")
line4 = mlines.Line2D(range(1), range(1), color="white", marker='o',markersize=8,markerfacecolor="Blue")
line5 = mlines.Line2D(range(1), range(1), color="white", marker='o',markersize=8,markerfacecolor="Gold")
plt.legend((line1,line2,line3,line4,line5),('BBCWorld','CBSNews', 'CNN', 'FoxNews','nytimes'),numpoints=1, loc=1,bbox_to_anchor=(1.27, 1))
plt.text(120, 1,'Media sources', ha='center', va='center')
plt.savefig("Images/sentiment_analysis.png")
plt.show()
```
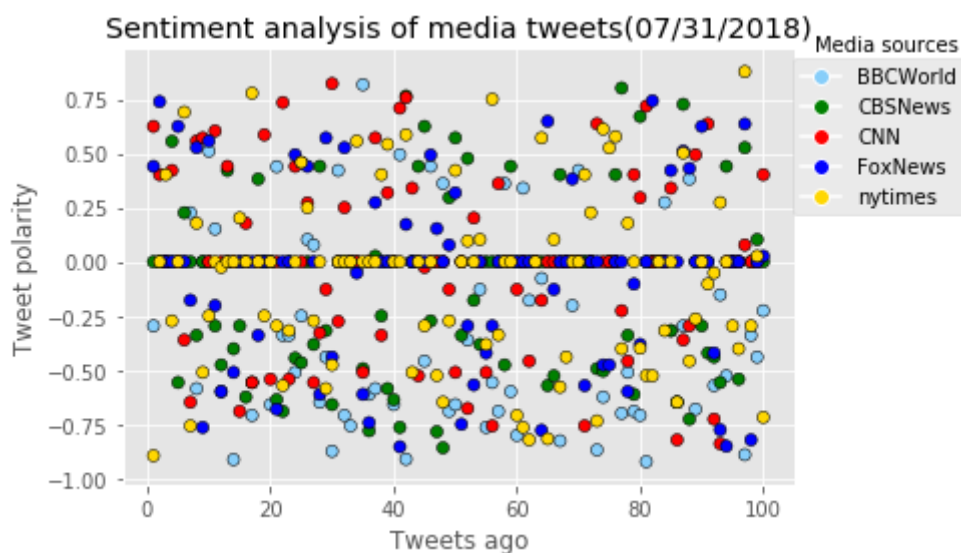
In [372]:
```python
colors=["LightSkyBlue","Green","Red","Blue","Gold"]
x_vals = np.arange(5)
plt.bar(x_vals, senti_mean_list, color=colors, alpha=0.5, align="center")
for a,b in zip(x_vals, senti_mean_list):
    plt.text(a, b, str(b))
tick_locations = [value for value in x_vals]
plt.xticks(tick_locations, ["BBCWorld","CBSNews","CNN","FoxNews","nytimes"])
plt.title("Overall media sentiment based on Twitter(07/31/2018)")
plt.ylabel("Tweet polarity")
plt.savefig("Images/overall_sentiment_analysis.png")
plt.show()
```