```
close weekly_ret
       date
2009-06-07 20.445700
                                NaN
2009-06-14
              20.106860
                           -0.016712
2009-06-21
              19.525140
                          -0.029358
2009-06-28
              19.711440
                           0.009496
2009-07-05 20.258925
                           0.027396
# drop null rows
df_week.dropna(inplace=True)
import matplotlib.pyplot as plt
df_week['weekly_ret'].plot(kind='line', figsize=(12, 6))
plt.title("Weekly Returns of AAPL")
plt.xlabel("Date")
plt.ylabel("Log Return")
plt.grid(True)
plt.tight_layout()
plt.show()
                                                     Weekly Returns of AAPL
   0.08
   0.06
   0.04
   0.02
Log Return
   0.00
  -0.02
  -0.04
  -0.06
  -0.08
            2010
                       2011
                                  2012
                                             2013
                                                         2014
                                                                    2015
                                                                               2016
                                                                                          2017
                                                                                                     2018
                                                                                                                 2019
```

Date

df\_week['weekly\_ret'] = np.log(df\_week['close']).diff()

df\_week.head()