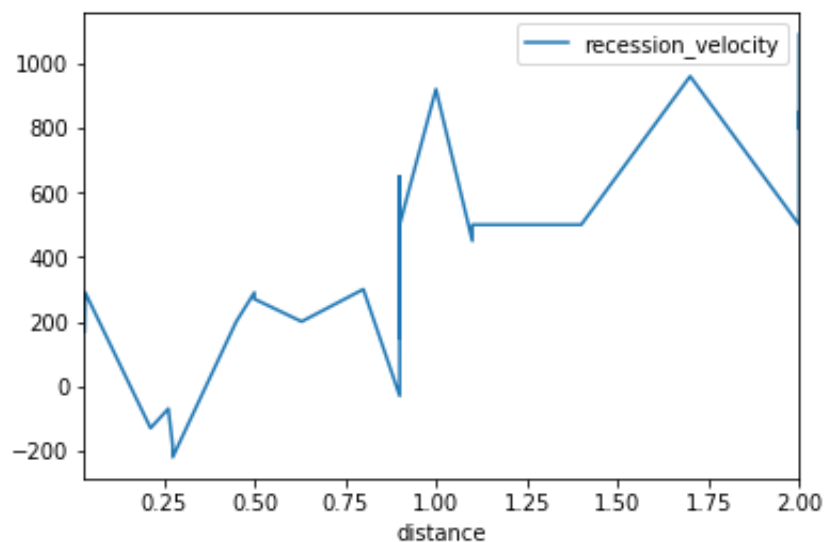
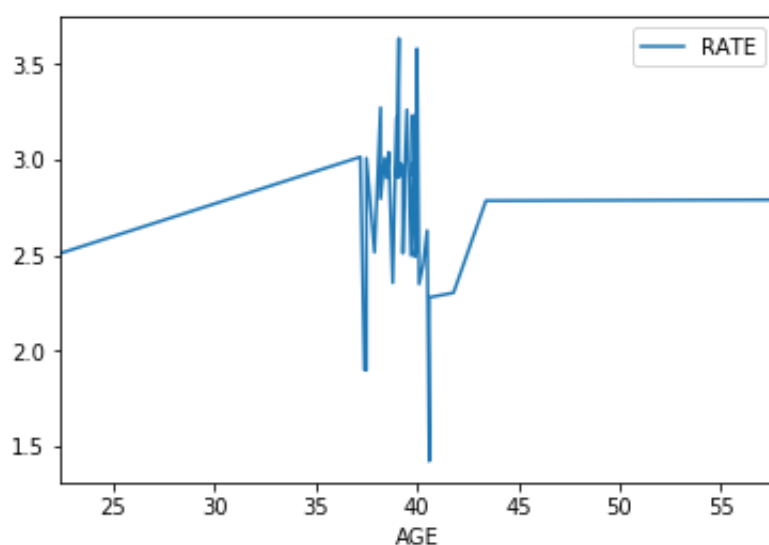


Exercise 7

- By using the data file “hubble_data.csv” from Hubble Space Telescope, create the chart for showing the relationship between recession velocity and distance.



- By analysis the file “wages_hours.csv”. find out the relationship between wages and age.



- Yahoo Finance is a good place to find out stock information. Develop a program obtain the stock information for Tencent Holdings Limited (0700.HK). Then find out the highest price, lowest price and the corresponding date.

```
The highest price is 476.600006 on 2018-01-29
The lowest price is 0.675 on 2004-07-26
```

4. By analysis the following three files, perform the corresponding analysis:

- **user_usage.csv** – Users monthly mobile usage statistics
- **user_device.csv** – Details of an individual use of the system, with dates and device information
- **android_devices.csv** – Device and manufacturer data, which lists all Android devices and their model code

A. We would like to determine if the usage patterns for users differ between different devices. For example, do users using Samsung devices use more call minutes than those using LG devices?

device	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb
GT-I9505	21.97	4.82	1557.33
SM-G930F	1710.08	136.88	7267.55
SM-G930F	1710.08	136.88	7267.55
D2303	94.46	35.17	519.12
SM-G361F	71.59	79.26	1557.33
SM-G361F	71.59	79.26	1557.33
SM-G361F	71.59	79.26	519.12
SM-G361F	71.59	79.26	519.12
ONEPLUS A3003	30.92	22.77	3114.67

B. By using the data aggregation functionality, calculate the mean usage for users based on device manufacturer

manufacturer	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb	use_id
HTC	299.842955	93.059318	5144.077955	44
Huawei	81.526667	9.500000	1561.226667	3
LGE	111.530000	12.760000	1557.330000	2
Lava	60.650000	261.900000	12458.670000	2
Lenovo	215.920000	12.930000	1557.330000	2
Motorola	95.127500	65.666250	3946.500000	16
OnePlus	354.855000	48.330000	6575.410000	6
Samsung	191.010093	92.390463	4017.318889	108
Sony	177.315625	40.176250	3212.000625	16
Vodafone	42.750000	46.830000	5191.120000	1
ZTE	42.750000	46.830000	5191.120000	1