datetime

```
import datetime as dt
data['timestamp'] = pd.to_datetime(data['timestamp'])
data['dayofyear'] = data['timestamp'].dt.dayofyear
data['dayofweek'] = data['timestamp'].dt.dayofweek
```

total seconds

```
data['purchase_signup_delta'] = (data['purchase_time'] - data['signup_time']).dt.total_seconds()
data.head()
```

parse_dates

```
data = pd.read_csv('Fraud_Data.csv', parse_dates=['signup_time', 'purchase_time'])
data.head()
```

days of delta, x.days

```
data_quit['duration'] = data['quit_date'] - data['join_date']
data_quit['duration'] = data_quit['duration'].map(lambda x:x.days)
```

day of week, year

```
import datetime as dt
data['timestamp'] = pd.to_datetime(data['timestamp'])
data['dayofyear'] = data['timestamp'].dt.dayofyear
data['dayofweek'] = data['timestamp'].dt.dayofweek
```

date range

```
unique_date = pd.date_range(start="2011-01-24", end="2015-12-13", freq="D")
```

example

```
loop_count = []
loop_company = []
loop_date = []
for oneDate in unique_date:
    for oneCompany in unique_company:
        num_join = np.sum((data['join_date'] <= oneDate) & (data['company_id'] == oneCompany))
        num_quit = np.sum((data['quit_date'] <= oneDate) & (data['company_id'] == oneCompany))
        loop_count.append(num_join-num_quit)
        loop_company.append(oneCompany)
        loop_date.append(oneDate)
head_count = pd.DataFrame({'date':loop_date, 'company_id':loop_company, 'headcount':loop_count})
```