

Examples

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- Custom Class
- Dictionary/Set/List Data
- Set Methods

```
def get_event_date(event):
    return event.date

def current_users(events):
    events.sort(key=get_event_date)
    machines = {}
    for event in events:
        if event.machine not in machines:
            machines[event.machine] = set()
        if event.type == "login":
            machines[event.machine].add(event.user)
        elif event.type == "logout":
            machines[event.machine].remove(event.user)
    return machines

def generate_report(machines):
    for machine, users in machines.items():
        if len(users) > 0:
            user_list = ", ".join(users)
            print("{}: {}".format(machine, user_list))

class Event:
    def __init__(self, event_date, event_type, machine_name, user):
        self.date = event_date
        self.type = event_type
        self.machine = machine_name
        self.user = user
```

```
events = [  
    Event('2020-01-21 12:45:46', 'login', 'myworkstation.local', 'jordan'),  
    Event('2020-01-22 15:53:42', 'logout', 'webserver.local', 'jordan'),  
    Event('2020-01-21 18:53:21', 'login', 'webserver.local', 'lane'),  
    Event('2020-01-22 10:25:34', 'logout', 'myworkstation.local', 'jordan'),  
    Event('2020-01-21 08:20:01', 'login', 'webserver.local', 'jordan'),  
    Event('2020-01-23 11:24:35', 'login', 'mailserver.local', 'chris'),  
]  
  
users = current_users(events)  
print(users)  
# Output: {'webserver.local': {'lane'}, 'myworkstation.local': set(), 'mailserver.local': {'chris'}}  
  
generate_report(users)  
# Output:  
# webserver.local: lane  
# mailserver.local: chris
```

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