

Name : Janhavi Kawadkar .

Roll no: 231.

Batch :B2.

Prepare/Take [datasets](#) for any real-life application. For Ex. Sales of the company. Read the data from [Sales.csv/.xls/.txt](#). Store Product details in the List data structure. Store Supplier Details in Dictionary Data Structure. Store Customer Details in Tuple Data Structure. Now perform the following operations:

Sr no.	GM Name	DOB	GM at age	Best Move	Rating	Nationality	Gender
1	Magnus carlsen	30-11-1990	14	Ruby Lopez	2859	Norwegian	Male
2	Anish giri	28-06-1994	14	Queens Indian Defence	2768	Nepali	Male
3	Hikaru Nakamora	09-12-1987	15	Tactical Force	2775	American	Male
4	Vishvanath Anand	11-12-1969	18	Sicilian Defense	2754	Indian	Male
5	Vidit gujrathi	24-10-1992	26	Legendary Move	2731	Indian	Male
6	Pragnanad	10-08-2005	12	Shocking Endgame sacrifice	2767	Indian	Male
7	Ding Liren	24-10-1992	16	Bishop Endgame	2789	Chinese	Male
8	Vantika Agrawal	28-09-2002	20	Gellers Rook	2428	Indian	Female
9	Priyanka Nutakki	01-06-2002	19	Marshalls Move	2262	Indian	Female
10	Divya Deshmukh	09-12-2005	15	French Defense	2319	Indian	Female

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```

GM_nm=[]
GM_dob=dict()
GM_age=dict()
Move={}
GM_rat=[]
GM_Nat=[]
Gender={}

import csv

fp1=open("/content/GM Chess.csv","r")
data=fp1.readline()

while(True):

    data =fp1.readline()
    if not data:
        break;
    #print(data)
    #data=data.replace("\n","")
    temp=data.split(",")
    GM_nm.append(temp[1])
    GM_dob.update({temp[1]:temp[2]})
    GM_age.update({temp[3]:temp[0]})
    Move.update({temp[1]:temp[4]})
    GM_rat.append({temp[1]:temp[5]})
    GM_Nat.append({temp[1]:temp[6]})
    Gender.update({temp[1]:temp[7]})
fp1.close()

GM_age=tuple(GM_age)
print(type(GM_age))

print("\nGM Name\n",GM_nm,end="")
print("\nGM dob\n",GM_dob,end="")
print("\nGM at Age\n",GM_age,end="")
print("\nBest Move of GM\n",Move,end="")
print("\nRating of GM\n",GM_rat,end="")
print("\nNationality of GM\n",GM_Nat,end="")
print("\nGender\n",Gender,end="")

#GM with Same Birth Date

# Given data
names = ['Magnus Carlsen', 'Anish Giri', 'Hikaru Nakamura',
'Vishwanathan Anand', 'Vidit Gujrathi', 'Praggnanandhaa', 'Ding Liren',
'Vantika Agrawal', 'Priyanka Nutakki', 'Divya Deshmukh']

```

```

birthdates = ['30-11-1990', '28-06-1994', '09-12-1987', '11-12-1969', '24-10-1992', '10-08-2005', '24-10-1992', '28-09-2002', '01-06-2002', '09-12-2005']
levels = ['GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM']

# Create a dictionary to store GMs by birth date
gm_by_birthdate = {}

# Iterate over the GMs and group them by birth date
for name, birthdate, level in zip(names, birthdates, levels):
    if birthdate in gm_by_birthdate:
        gm_by_birthdate[birthdate].append((name, level))
    else:
        gm_by_birthdate[birthdate] = [(name, level)]

# Find the birth dates with multiple GMs
birthdates_with_multiple_gms = [birthdate for birthdate in gm_by_birthdate if len(gm_by_birthdate[birthdate]) > 1]

# Display the GMs with the same birth date
for birthdate in birthdates_with_multiple_gms:
    gm_list = gm_by_birthdate[birthdate]
    print("Grandmasters with the same birth date", birthdate)
    for gm in gm_list:
        print(f"Name: {gm[0]}, Level: {gm[1]}")

```

```

print()

```

```

#GrandMasters with Rating above 2800

```

```

# Given data
names = ['Magnus Carlsen', 'Anish Giri', 'Hikaru Nakamura', 'Vishwanathan Anand', 'Vidit Gujrathi', 'Praggnanandhaa', 'Ding Liren', 'Vantika Agrawal', 'Priyanka Nutakki', 'Divya Deshmukh']
ratings = ['2859', '2768', '2775', '2754', '2731', '2767', '2789', '2428', '2262', '2319']
levels = ['GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM']

```

```

# Find players with a rating above 2800

```

```
high_rated_players = [names[i] for i in range(len(names)) if  
int(ratings[i]) > 2800]
```

```
# Display the players with a rating above 2800
```

```
if len(high_rated_players) > 0:
```

```
    print("Players with a rating above 2800:")
```

```
    for player in high_rated_players:
```

```
        print(player)
```

```
else:
```

```
    print("No players with a rating above 2800 found.")
```

```
#GM with Nepali as Nationalty
```

```
names = ['Magnus Carlsen', 'Anish Giri', 'Hikaru Nakamura',  
'Vishwanathan Anand', 'Vidit Gujrathi', 'Praggnanandhaa',  
'Ding Liren', 'Vantika Agrawal', 'Priyanka Nutakki', 'Divya  
Deshmukh']
```

```
nationalities = ['Norwegian', 'Nepali', 'American', 'Indian',  
'Indian', 'Indian', 'Chinese', 'Indian', 'Indian', 'Indian']
```

```
levels = ['GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM', 'GM',  
'GM', 'GM']
```

```
# Find GM(s) with Nepali nationality
```

```
nepali_gms = [names[i] for i in range(len(names)) if  
nationalities[i].lower() == 'nepali']
```

```
# Display the GMs with Nepali nationality
```

```
if len(nepali_gms) > 0:
```

```
    print("Grandmasters with Nepali nationality:")
```

```
    for gm in nepali_gms:
```

```
        print(gm)
```

```
else:
```

```
    print("No grandmasters with Nepali nationality found.")
```

```
#No. Of Female Grandmasters in Chess
```

```
players = [
```

```
    {"Sr no.": 1, "GM Name": "Magnus carlsen", "DOB": "30-11-  
1990", "GM at age": 14, "Best Move": "Ruby Lopez", "Rating":  
2859, "Nationality": "Norwegian", "Gender": "Male"},
```

```

        {"Sr no.": 2, "GM Name": "Anish giri", "DOB": "28-06-1994", "GM at age": 14, "Best Move": "Queens Indian Defence", "Rating": 2768, "Nationality": "Nepali", "Gender": "Male"},
        {"Sr no.": 3, "GM Name": "Hikaru Nakamora", "DOB": "09-12-1987", "GM at age": 15, "Best Move": "Tactical Force", "Rating": 2775, "Nationality": "American", "Gender": "Male"},
        {"Sr no.": 4, "GM Name": "Vishvanath Anand", "DOB": "11-12-1969", "GM at age": 18, "Best Move": "Sicilian Defense", "Rating": 2754, "Nationality": "Indian", "Gender": "Male"},
        {"Sr no.": 5, "GM Name": "Vidit gujrathi", "DOB": "24-10-1992", "GM at age": 26, "Best Move": "Legendary Move", "Rating": 2731, "Nationality": "Indian", "Gender": "Male"},
        {"Sr no.": 6, "GM Name": "Pragnanad", "DOB": "10-08-2005", "GM at age": 12, "Best Move": "Shocking Endgame sacrifice", "Rating": 2767, "Nationality": "Indian", "Gender": "Male"},
        {"Sr no.": 7, "GM Name": "Ding Liren", "DOB": "24-10-1992", "GM at age": 16, "Best Move": "Bishop Endgame", "Rating": 2789, "Nationality": "Chinese", "Gender": "Male"},
        {"Sr no.": 8, "GM Name": "Vantika Agrawal", "DOB": "28-09-2002", "GM at age": 20, "Best Move": "Gellers Rook", "Rating": 2428, "Nationality": "Indian", "Gender": "Female"},
        {"Sr no.": 9, "GM Name": "Priyanka Nutakki", "DOB": "01-06-2002", "GM at age": 19, "Best Move": "Marshalls Move", "Rating": 2262, "Nationality": "Indian", "Gender": "Female"},
        {"Sr no.": 10, "GM Name": "Divya Deshmukh", "DOB": "09-12-2005", "GM at age": 15, "Best Move": "French Defense", "Rating": 2319, "Nationality": "Indian", "Gender": "Female"}]
female_players = sum(player['Gender'] == 'Female' for player in players)
print(female_players)

#Total no. of Grandmasters
# Your list of player dictionaries

total_players = len(players)
print(total_players)

#Grandmaster with longest Name.
# Your list of player dictionaries

longest_name = max(players, key=lambda player: len(player['GM Name']))
print(longest_name['GM Name'])

```

```

# Average rating no. of Female Grandmasters.

female_players = [player for player in players if
player['Gender'] == 'Female']
ratings = [player['Rating'] for player in female_players]
average_rating = sum(ratings) / len(ratings)
print(average_rating)

# Sort the players by rating in decending order.

sorted_players = sorted(players, key=lambda player:
player['Rating'], reverse=True)
print(sorted_players)

#Average Age of players when they become grand master.

ages = [player['GM at age'] for player in players]
average_age = sum(ages) / len(ages)
print(average_age)

#Average Rating of all the Grandmasters in chess Championship.
atings = ['2859', '2768', '2775', '2754', '2731', '2767',
'2789', '2428', '2262', '2319']

# Convert ratings from strings to integers
ratings = list(map(int, ratings))

# Calculate the average rating
average_rating = sum(ratings) / len(ratings)

print("Average Rating:",average_rating)

#Grandmaster with max rating
ratings = ['2859', '2768', '2775', '2754', '2731', '2767',
'2789', '2428', '2262', '2319']
max_rating = max(ratings)
index = ratings.index(max_rating)

```

```

player = ['Magnus Carlsen', 'Anish Giri', 'Hikaru Nakamura',
'Vishwanathan Anand', 'Vidit Gujrathi', 'Praggnanandhaa',
'Ding Liren', 'Vantika Agrawal', 'Priyanka Nutakki', 'Divya
Deshmukh']
player_with_max_rating = player[index]
print("Player with the highest rating:",
player_with_max_rating)

#Player who became Grandmaster at youngest age
ages = ['14', '14', '15', '18', '26', '12', '16', '20', '19',
'15']
min_age = min(ages)
index = ages.index(min_age)
youngest_gm = player[index]
print("Player who became a grandmaster at the youngest age:",
youngest_gm)

```

Output:

<class 'tuple'>

GM Name

['Magnus carlsen', 'Anish giri', 'Hikaru Nakamora', 'Vishvanath Anand', 'Vidit gujrathi', 'Praggnanad', 'Ding Liren', 'Vantika Agrawal', 'Priyanka Nutakki', 'Divya Deshmukh']

GM dob

{'Magnus carlsen': '30-11-1990', 'Anish giri': '28-06-1994', 'Hikaru Nakamora': '09-12-1987', 'Vishvanath Anand': '11-12-1969', 'Vidit gujrathi': '24-10-1992', 'Praggnanad': '10-08-2005', 'Ding Liren': '24-10-1992', 'Vantika Agrawal': '28-09-2002', 'Priyanka Nutakki': '01-06-2002', 'Divya Deshmukh': '09-12-2005'}

GM at Age

['14', '15', '18', '26', '12', '16', '20', '19']

Best Move of GM

{'Magnus carlsen': 'Ruby Lopez', 'Anish giri': 'Queens Indian Defence', 'Hikaru Nakamora': 'Tactical Force', 'Vishvanath Anand': 'Sicilian Defense', 'Vidit gujrathi': 'Legendary Move', 'Praggnanad': 'Shocking Endgame sacrifice', 'Ding Liren': 'Bishop Endgame', 'Vantika Agrawal': 'Gellers Rook', 'Priyanka Nutakki': 'Marshalls Move', 'Divya Deshmukh': 'French Defense'}

Rating of GM

[{'Magnus carlsen': '2859'}, {'Anish giri': '2768'}, {'Hikaru Nakamora': '2775'}, {'Vishvanath Anand': '2754'}, {'Vidit gujrathi': '2731'}, {'Praggnanad': '2767'}, {'Ding Liren': '2789'}, {'Vantika Agrawal': '2428'}, {'Priyanka Nutakki': '2262'}, {'Divya Deshmukh': '2319'}]

Nationality of GM

[{'Magnus carlsen': 'Norwegian'}, {'Anish giri': 'Nepali'}, {'Hikaru Nakamora': 'American'}, {'Vishvanath Anand': 'Indian'}, {'Vidit gujrathi': 'Indian'}, {'Praggnanad': 'Indian'}, {'Ding Liren': 'Chinese'}, {'Vantika Agrawal': 'Indian'}, {'Priyanka Nutakki': 'Indian'}, {'Divya Deshmukh': 'Indian'}]

Gender

{'Magnus carlsen': 'Male\n', 'Anish giri': 'Male\n', 'Hikaru Nakamora': 'Male\n', 'Vishvanath Anand': 'Male\n', 'Vidit gujrathi': 'Male\n', 'Praggnanad': 'Male\n', 'Ding Liren': 'Male\n', 'Vantika Agrawal': 'Female\n', 'Priyanka Nutakki': 'Female\n', 'Divya Deshmukh': 'Female\n'}Grandmasters with the same birth date 24-10-1992

Name: Vidit Gujrathi, Level: GM

Name: Ding Liren, Level: GM

Players with a rating above 2800:

Magnus Carlsen

Grandmasters with Nepali nationality:

Anish Giri

3

10

Vishvanath Anand

2336.3333333333335

[{'Sr no.': 1, 'GM Name': 'Magnus carlsen', 'DOB': '30-11-1990', 'GM at age': 14, 'Best Move': 'Ruby Lopez', 'Rating': 2859, 'Nationality': 'Norwegian', 'Gender': 'Male'}, {'Sr no.': 7, 'GM Name': 'Ding Liren', 'DOB': '24-10-1992', 'GM at age': 16, 'Best Move': 'Bishop Endgame', 'Rating': 2789, 'Nationality': 'Chinese', 'Gender': 'Male'}, {'Sr no.': 3, 'GM Name': 'Hikaru Nakamora', 'DOB': '09-12-1987', 'GM at age': 15, 'Best Move': 'Tactical Force', 'Rating': 2775, 'Nationality': 'American', 'Gender': 'Male'}, {'Sr no.': 2, 'GM Name': 'Anish giri', 'DOB': '28-06-1994', 'GM at age': 14, 'Best Move': 'Queens Indian Defence', 'Rating': 2768, 'Nationality': 'Nepali', 'Gender': 'Male'}, {'Sr no.': 6, 'GM Name': 'Pragnanad', 'DOB': '10-08-2005', 'GM at age': 12, 'Best Move': 'Shocking Endgame sacrifice', 'Rating': 2767, 'Nationality': 'Indian', 'Gender': 'Male'}, {'Sr no.': 4, 'GM Name': 'Vishvanath Anand', 'DOB': '11-12-1969', 'GM at age': 18, 'Best Move': 'Sicilian Defense', 'Rating': 2754, 'Nationality': 'Indian', 'Gender': 'Male'}, {'Sr no.': 5, 'GM Name': 'Vidit gujrathi', 'DOB': '24-10-1992', 'GM at age': 26, 'Best Move': 'Legendary Move', 'Rating': 2731, 'Nationality': 'Indian', 'Gender': 'Male'}, {'Sr no.': 8, 'GM Name': 'Vantika Agrawal', 'DOB': '28-09-2002', 'GM at age': 20, 'Best Move': 'Gellers Rook', 'Rating': 2428, 'Nationality': 'Indian', 'Gender': 'Female'}, {'Sr no.': 10, 'GM Name': 'Divya Deshmukh', 'DOB': '09-12-2005', 'GM at age': 15, 'Best Move': 'French Defense', 'Rating': 2319, 'Nationality': 'Indian', 'Gender': 'Female'}, {'Sr no.': 9, 'GM Name': 'Priyanka Nutakki', 'DOB': '01-06-2002', 'GM at age': 19, 'Best Move': 'Marshall's Move', 'Rating': 2262, 'Nationality': 'Indian', 'Gender': 'Female'}]

16.9

Average Rating: 2336.3333333333335

Player with the highest rating: Magnus Carlsen

Player who became a grandmaster at the youngest age: Pragganandhaa

[]