INTERNSHIP TASKS

Day 5:
EXERCISE – 5

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Course : Python

Org : IGIAT – VSKP

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Exercise Level 1

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#Task 1:
print("Task 1 : Declare an empty list");
my_list = [];

#Task 2:
print("\n\nTask 2 : Declare a list with more than 5 items");
my_list = [1, 2, 3, 4, 5, "Deva Manikanta"];

#Task 3:
print("\n\nTask 3 : Find the length of your list");
print("The length of my list : ", len(my_list));

#Task 4:
print("\n\nTask 4 : Get the first item, the middle item and then the last item of the
list");
print("The First Item : ", my_list[0]);
print("The Middle Item : ", my_list[int(len(my_list) / 2)]);
print("The Last item : ", my_list[-1]);

#Task 5:
print("\n\nTask 5 : Declare a list mixed_data_types, put your --> name, age, height,
maritial status, address");
mixed_data_types = ["Deva Manikanta", 20, 150.5, "unmarried", "Palacole-53460"];

#Task 6:
print("\n\nTask 6 : Declare a list variable named it_companies and assign initial values
Facebook, Google, Microsoft, Apple, IBM, Oracle, and Amazon");
it_companies = ["Facebook", "Google", "Microsoft", "Apple", "IBM", "Oracle", "Amazon"];

#Task 7:
print("\n\nTask 7 : Print the list using print()");
print("List = it_companies : ", it_companies);

#Task 8:
print("\n\nTask 8 : Print the number of companies in the list");
print("No.of companies : ", len(it_companies));

#Task 9:
print("\n\nTask 9 : Print the first, middle, and last company");
print("The First Company : ", it_companies[0]);
print("The Middle Company : ", it_companies[int(len(it_companies) / 2)]);
print("The Last Company : ", it_companies[-1]);

#Task 10:
print("\n\nTask 10 : Print the list after modifying one of the companies");
it_companies[0] = "Meta";
print("The Modified list : ", it_companies);

#Task 11:
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print("\n\nTask 11 : Add an IT company to it_companies");
it_companies.append("Infosys");
print(it_companies);

#Task 12:
print("\n\nTask 12 : Insert an IT company in the middle of the companies list");
it_companies.insert(int(len(it_companies)/2) , "TCS");
print(it_companies);

#Task 13:
print("\n\nTask 13 : Change one of the it_companies names to uppercase");
import random as r;
random = r.randrange(0, len(it_companies));
it_companies[random] = it_companies[random].upper();
print("The Upper case converted for : ", it_companies[random]);

#Task 14:
print("\n\nTask 14: Join the it_companies with a string \'#;\'");
string = '#; '.join(it_companies);
print(string);

#Task 15:
print("\n\nTask 15: Check if a certain company exists in the it_companies list");
is_meta_exists = ("Meta" or "META") in it_companies;
print("Does \'Meta\' or \'META\' exists in the list: ", is_meta_exists);

#Task 16:
print("\n\nTask 16: Sort the list using sort() method");
it_companies.sort();
print("Sorted : ", it_companies);

#Task 17:
print("\n\nTask 17: Reverse the list descending order using reverse() method");
it_companies.reverse();
print("Desending order : ", it_companies);

#Task 18:
print("\n\nTask 18: Slice out the first 3 companies from the list");
it_companies.sort();
print("The First 3 companies : ", it_companies[0:3]);

#Task 19
print("\n\nTask 19: Slice out the last 3 companies from the list:");
print("The Last 3 companies : ", it_companies[-3:]);

#Task 20
import math as m;
print("\n\nTask 20: Slice out the middle IT company or companies from the list");
print("The Middle companies : ", it_companies[int(m.floor(len(it_companies)/2)) :
int(m.ceil((len(it_companies)/2)))]);
```

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#Task 21
print("\n\nTask 21: Remove the first IT company from the list");
first_company = it_companies[0];
it_companies.remove(first_company);
print(f"After removing : {first_company} : {it_companies}");

#Task 22
print("\n\nTask 22: Remove the middle IT company or companies from the list");
middle_company = it_companies[int(len(it_companies) / 2)];
it_companies.remove(middle_company);
print(f"After removing : {middle_company} : {it_companies}");

#Task 23
print("\n\nTask 23: Remove the last IT Company from the list");
last_company = it_companies[-1];
it_companies.remove(last_company);
print(f"After removing : {last_company} : {it_companies}");

#Task 24
print("\n\nTask 24: Remove all IT companies from the list");
it_companies.clear();
print("The list : ", it_companies);

#Task 25:
print("\n\nTask 25: Destroy the IT Companies list");
try:
    del it_companies; #destroying aka deleting the list.
    print(it_companies); #throws an exception that list is not accessible.
except Exception as e:
    print(f"The list is not accessible it is removed or deleted!\nError : {e}");

#Task 26:
print("\n\nTask 26: Join the following lists:");
front_end = ['HTML', 'CSS', 'JS', 'React', 'Redux'];
back_end = ['Node', 'Express', 'MongoDB'];
print(front_end);
print(back_end);
joined = front_end + back_end;
print("Joined : ", joined);

#Task 27:
print("\n\nTask 27: After joining the lists in task 26. Copy the joined list and assign it
to a variable full_stack.\nThen insert Python and SQL after Redux");
full_stack = joined.copy();
full_stack.insert(full_stack.index("Redux") + 1, ["Python", "SQL"]);
print(full_stack);
```

Outputs:

```
@DevaManikantaSala ➜.../codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_5 $ python exercise1.py
Task 1 : Declare an empty list


Task 2 : Declare a list with more than 5 items


Task 3 : Find the length of your list
The length of my list :  6


Task 4 : Get the first item, the middle item and then the last item of the list
The First Item :  1
The Middle Item :  4
The Last item :  Deva Manikanta


Task 5 : Declare a list mixed_data_types, put your --> name, age, height, maritial status, address


Task 6 : Declare a list variable named it_companies and assign initial values Facebook, Google, Microsoft, Apple, IBM, Oracle, and Amazon


Task 7 : Print the list using print()
List = it_companies :  ['Facebook', 'Google', 'Microsoft', 'Apple', 'IBM', 'Oracle', 'Amazon']


Task 8 : Print the number of companies in the list
No.of companies :  7


Task 9 : Print the first, middle, and last company
The First Company :  Facebook
The Middle Company :  Apple
The Last Company :  Amazon


Task 10 : Print the list after modifying one of the companies
The Modified list :  ['Meta', 'Google', 'Microsoft', 'Apple', 'IBM', 'Oracle', 'Amazon']
```

```
Task 11 : Add an IT company to it_companies
['Meta', 'Google', 'Microsoft', 'Apple', 'IBM', 'Oracle', 'Amazon', 'Infosys']


Task 12 : Insert an IT company in the middle of the companies list
['Meta', 'Google', 'Microsoft', 'Apple', 'TCS', 'IBM', 'Oracle', 'Amazon', 'Infosys']


Task 13 : Change one of the it_companies names to uppercase
The Upper case converted for :  IBM


Task 14: Join the it_companies with a string '#;'
Meta#; Google#; Microsoft#; Apple#; TCS#; IBM#; Oracle#; Amazon#; Infosys


Task 15: Check if a certain company exists in the it_companies list
Does 'Meta' or 'META' exists in the list:  True


Task 16: Sort the list using sort() method
Sorted :  ['Amazon', 'Apple', 'Google', 'IBM', 'Infosys', 'Meta', 'Microsoft', 'Oracle', 'TCS']


Task 17: Reverse the list descending order using reverse() method
Desending order :  ['TCS', 'Oracle', 'Microsoft', 'Meta', 'Infosys', 'IBM', 'Google', 'Apple', 'Amazon']


Task 18: Slice out the first 3 companies from the list
The First 3 companies :  ['Amazon', 'Apple', 'Google']


Task 19: Slice out the last 3 companies from the list:
The Last 3 companies :  ['Microsoft', 'Oracle', 'TCS']


Task 20: Slice out the middle IT company or companies from the list
The Middle companies :  ['Infosys']
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Task 21: Remove the first IT company from the list
After removing : Amazon : ['Apple', 'Google', 'IBM', 'Infosys', 'Meta', 'Microsoft', 'Oracle', 'TCS']


Task 22: Remove the middle IT company or companies from the list
After removing : Meta : ['Apple', 'Google', 'IBM', 'Infosys', 'Microsoft', 'Oracle', 'TCS']


Task 23: Remove the last IT Company from the list
After removing : TCS : ['Apple', 'Google', 'IBM', 'Infosys', 'Microsoft', 'Oracle']


Task 24: Remove all IT companies from the list
The list :  []


Task 25: Destroy the IT Companies list
The list is not accessible it is removed or deleted!
Error : name 'it_companies' is not defined


Task 26: Join the following lists:
['HTML', 'CSS', 'JS', 'React', 'Redux']
['Node', 'Express', 'MongoDB']
Joined :  ['HTML', 'CSS', 'JS', 'React', 'Redux', 'Node', 'Express', 'MongoDB']


Task 27: After joining the lists in task 26. Copy the joined list and assign it to a variable full_stack.
Then insert Python and SQL after Redux
['HTML', 'CSS', 'JS', 'React', 'Redux', ['Python', 'SQL'], 'Node', 'Express', 'MongoDB']
@DevaManikantaSala →.../codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_5 $
```

Exercise Level 2

```
#Task 1
print("\n\nTask 1: The Following is a list of 10 students ages");
ages = [19, 22, 19, 24, 20, 25, 26, 24, 25, 24];
print(ages);

#Task 2
print("\n\nTask 2: Sort the list and find the min and max age");
ages.sort();
print("Min Age : ", min(ages));
print("Max Age : ", max(ages));

#Task 3
print("\n\nTask 3: Add the min age and max age again to the list");
ages.append(min(ages));
ages.append(max(ages));
print(ages);

#Task 4
import statistics as st; #pip install statistics
print("\n\nTask 4: Find the median age (one middle item or two middle items divided by
two)");
ages.sort();
median = int(st.median(ages));
print("The median age : ", median);

#Task 5
print("\n\nTask 5: Find the average age");
average = sum(ages)/len(ages);
print("The average age : ", average);

#Task 6
print("\n\nFind the range of the ages");
range_ages = max(ages) - min(ages);
print("The Range of ages : ", range_ages);

#Task 7
print("\n\nCompare the value of (min-average) and (max-average), use abs() method");
print(f"Minimum => {min(ages)}\nMaximum => {max(ages)}\nAverage => {average}");
print(f"(Min - Average) > (Max - Average)\n{abs(min(ages)-average)} > {abs(max(ages)-
average)} : {abs(min(ages)-average) > abs(max(ages)-average)}");
```

Outputs:

```
@DevaManikantaSala ➜.../codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_5 $ python exercise2.py


Task 1: The Following is a list of 10 students ages
[19, 22, 19, 24, 20, 25, 26, 24, 25, 24]


Task 2: Sort the list and find the min and max age
Min Age :  19
Max Age :  26


Task 3: Add the min age and max age again to the list
[19, 19, 20, 22, 24, 24, 24, 25, 25, 26, 19, 26]


Task 4: Find the median age (one middle item or two middle items divided by two)
The median age :  24


Task 5: Find the average age
The average age :  22.75


Find the range of the ages
The Range of ages :  7


Compare the value of (min-average) and (max-average), use abs() method
Minimum => 19
Maximum => 26
Average => 22.75
(Min - Average) > (Max - Average)
3.75 > 3.25 : True
@DevaManikantaSala ➜.../codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_5 $
```