Name: Mohammed Ikramuddin
Batch: DS2401

Name of the Assignment: PFA file 1
Github link: https://github.com/ikramzia/Internship

1. **What will be the output of the following code snippet?**
   def func(a, b):
   return b if a == 0 else func(b % a, a)
   print(func(30, 75))

   a) 10
   b) 20
   c) 15
   d) 0

   Ans) a=30, b=75
   a%b returns the remainder of a/b i.e., 75/30 remainder is 15

   →Answer is option **c) 15**

---

2. **numbers = (4, 7, 19, 2, 89, 45, 72, 22)**
   sorted_numbers = sorted(numbers)
   even = lambda a: a % 2 == 0
   even_numbers = filter(even, sorted_numbers)
   print(type(even_numbers))

   a) Int
   b) Filter
   c) List
   d) Tuple

   Ans) even_numbers is the object of type filter.

   →Answer is option **b) Filter**

---

3. **As what datatype are the *args stored, when passed into**
   a) Tuple
   b) List
   c) Dictionary
   d) None

   Ans) *args are stored in Python as **a tuple**.

   →Answer is option **a) Tuple**

---

4. **set1 = {14, 3, 55}**
   set2 = {82, 49, 62}
   set3= {99,22,17}
   print(len(set1 + set2 + set3))
   a) 105
   b) 270
   c) 0
   d) Error

   Ans) TypeError: unsupported operand type(s) for +: 'set' and 'set'
   →Answer is option **d) Error**

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5. What keyword is used in Python to raise exceptions?

a) raise
b) try
c) goto
d) except

Ans) **The raise keyword** is used to raise an exception. You can define what kind of error to raise, and the text to print to the user.

→Answer is option **a) raise**

---

6. Which of the following modules need to be imported to handle date time computations in Python?

a) timedate
b) date
c) datetime
d) time

Ans) A date in Python is not a data type of its own, but we can import a module named datetime to work with dates as date objects.

→Answer is option **c) datetime**

---

7. **What will be the output of the following code snippet?**

print(43 + (7 + 5)**(1 + 1))**

a) 248
b) 169
c) 208
d) 233

Ans) 4**3 = 4x4x4 = 64

(7+5)**(1+1) = 12**2 = 12x12 = 144
So, (4**3 + (7 + 5)**(1 + 1)) = 64 + 144 = 208

→Answer is option **c) 208**

---

8. Which of the following functions converts date to corresponding time in Python?

a) strptime
b) strftime
c) both a) and b)
d) None

Ans) **strptime()** function in Python converts a date to its corresponding time in Python.

→Answer is option **a) strptime**

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9. **The python tuple is _____ in nature.**
   a) mutable
   b)immutable
   c)unchangeable
   d) none

   Ans) Tuples are **immutable** in nature. Thus, we cannot make changes after creating it.

   →Answer is option **b) immutable**

---

10. **The ___ is a built-in function that returns a range object that consists series of integer numbers, which we can iterate using a for loop.**
    a) range()
    b) set()
    c) dictionary{}
    d) None of the mentioned above

    Ans) The **range()** is a built-in function that returns a range object that consists series of integer numbers, which we can iterate using a for loop. In Python, Using a for loop with range() , we can repeat an action a specific number of times.

    →Answer is option **a) range()**

---

11. **Amongst which of the following is a function which does not have any name?**
    a) Del function
    b) Show function
    c) Lambda function
    d) None of the mentioned above

    Ans) The Python **lambda (anonymous) function** is a no-name function declared in a single line. It can have only one expression and is used when a short-term function is required.

    →Answer is option **c) Lambda function**

---

12. **The module Pickle is used to ___.**
    a) Serializing Python object structure
    b) De-serializing Python object structure
    c) Both A and B
    d) None of the mentioned above

    Ans) Python's Pickle module is a popular format used to **serialize and deserialize data types**.

    →Answer is option **c) Both A and B**

---

13. **Amongst which of the following is / are the method of convert Python objects for writing data in a binary file?**

a) **set() method**
b) **dump() method**
c) **load() method**
d) **None of the mentioned above**

Ans) The **dump() method** is used to convert Python objects into binary data that can be written to a binary file.
→Answer is option **b) dump() method**

---

14. Amongst which of the following is / are the method used to unpickling data from a binary file?

a) **load()**
b) **set() method**
c) **dump() method**
d) **None of the mentioned above**

Ans) The **load()** method is used to deserialize and read data from a binary file. It reads the byte stream from the file and converts it back into the original object.
→Answer is option **a) load()**

---

15. A text file contains only textual information consisting of ___.

a) **Alphabets**
b) **Numbers**
c) **Special symbols**
d) **All of the mentioned above**

Ans) text files contain only textual information, which can be represented by alphabets, numbers, and other special symbols.
→ Answer is option **d) All of the mentioned above**

---

16. Which Python code could replace the ellipsis (...) below to get the following output? (Select all that apply.)

```
captains = { "Enterprise": "Picard", "Voyager": "Janeway", "Defiant": "Sisko", }
Enterprise Picard,
Voyager Janeway
Defiant Sisko
a) for ship, captain in captains.items():
print(ship, captain)

b) for ship in captains:
print(ship, captains[ship])

c) for ship in captains:
print(ship, captains)

d) both a and b
```

Ans) Code:
```
captains = { "Enterprise": "Picard", "Voyager": "Janeway", "Defiant": "Sisko", }
for ship, captain in captains.items():
    print(ship, captain)
```

Output: Enterprise Picard
Voyager Janeway
Defiant Sisko

```
Code: captains = { "Enterprise": "Picard", "Voyager": "Janeway", "Defiant": "Sisko", }
        for ship in captains:
            print(ship, captains[ship]))
```

Output: Enterprise Picard
Voyager Janeway
Defiant Sisko

→ Answer is option **d) both a and b**

---

17. Which of the following lines of code will create an empty dictionary named captains?
a) captains = {dict}
b) type(captains)
c) captains.dict()
d) captains = {}

Ans) Code: captains = {}

print(captains)

print(type(captains))

Output: {}

<class 'dict'>

→ Answer is option **d) captains = {}**

---

18. Now you have your empty dictionary named captains. It's time to add some data! Specifically, you want to add the key-value pairs "Enterprise": "Picard", "Voyager": "Janeway", and "Defiant": "Sisko".
Which of the following code snippets will successfully add these key-value pairs to the existing captains dictionary?
a) captains{"Enterprise" = "Picard"}
captains{"Voyager" = "Janeway"}
captains{"Defiant" = "Sisko"}

b) captains["Enterprise"] = "Picard"
captains["Voyager"] = "Janeway"
captains["Defiant"] = "Sisko"

c) captains = {
"Enterprise": "Picard",
"Voyager": "Janeway",
"Defiant": "Sisko",
}
d) None of the above

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Ans) Code:
```
captains = {}

print(captains)

print(type(captains))

captains["Enterprise"] = "Picard"
captains["Voyager"] = "Janeway"
captains["Defiant"] = "Sisko"

print(captains)
```

Output:
```
{}
<class 'dict'>
{'Enterprise': 'Picard', 'Voyager': 'Janeway', 'Defiant': 'Sisko'}
```

Code:
```
captains = {}

print(captains)

print(type(captains))

captains = {"Enterprise": "Picard", "Voyager": "Janeway", "Defiant": "Sisko",}

print(captains)
```

Output:
```
{}
<class 'dict'>
{'Enterprise': 'Picard', 'Voyager': 'Janeway', 'Defiant': 'Sisko'}
```

→Answer is options **b) and c)**

---

19. You're really building out the Federation Starfleet now! Here's what you have:
captains = {"Enterprise": "Picard", "Voyager": "Janeway", "Defiant": "Sisko", "Discovery": "unknown", }
Now, say you want to display the ship and captain names contained in the dictionary, but you also want to provide some additional context. How could you do it?
a) for item in captains.items():
print(f"The [ship] is captained by [captain].")

b) for ship, captain in captains.items():
print(f"The {ship} is captained by {captain}.")

c) for captain, ship in captains.items():
print(f"The {ship} is captained by {captain}.")

d) All are correct

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Ans) Code: captains = { "Enterprise": "Picard", "Voyager": "Janeway", "Defiant": "Sisko", "Discovery": "unknown", }

```
print(captains)

for ship, captain in captains.items():
    print(f"The {ship} is captained by {captain}.")
```

Output:
{'Enterprise': 'Picard', 'Voyager': 'Janeway', 'Defiant': 'Sisko', 'Discovery': 'unknown'}
The Enterprise is captained by Picard.
The Voyager is captained by Janeway.
The Defiant is captained by Sisko.
The Discovery is captained by unknown.

→ Answer is options **b)**

---

20. You've created a dictionary, added data, checked for the existence of keys, and iterated over it with a for loop. Now you're ready to delete a key from this dictionary:
captains = { "Enterprise": "Picard", "Voyager": "Janeway", "Defiant": "Sisko", "Discovery": "unknown", }
What statement will remove the entry for the key "Discovery"?
a) del captains
b) captains.remove()
c) del captains["Discovery"]
d) captains["Discovery"].pop()

Ans) Code:

```
del captains["Discovery"]

print(captains)

for ship, captain in captains.items():
    print(f"The {ship} is captained by {captain}.")
```

Output:
{'Enterprise': 'Picard', 'Voyager': 'Janeway', 'Defiant': 'Sisko', 'Discovery': 'unknown'}
The Enterprise is captained by Picard.
The Voyager is captained by Janeway.
The Defiant is captained by Sisko.

→Answer is option **c)**