ASSIGNMENT 1

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. The output of this code snippet will be c) 15

```
In [6]: def func(a,b):
            if a == 0:
                return b
            else:
                return b%a

In [7]: print(func(30,75))

        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. The correct answer is a) Int

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In [21]:
```
numbers = [4, 7, 19, 2, 89, 45, 72, 22]
#sorting the numbers in ascending order
numbers.sort()
numbers
```

Out[21]:
```
[2, 4, 7, 19, 22, 45, 72, 89]
```

In [32]:
```
even = lambda a: a % 2 == 0
even_numbers=filter(even,numbers)
for x in even_numbers:
    print(type(x))
```

```
<class 'int'>
<class 'int'>
<class 'int'>
<class 'int'>
```

---

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

   Ans. The correct answer is 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

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Ans. The correct answer is d) Error

```
In [33]: set1 = {14, 3, 55}
         set2 = {82, 49, 62}
         set3={99,22,17}
         print(len(set1 + set2 + set3))
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_12320\4273524728.py in <module>
      2 set2 = {82, 49, 62}
      3 set3={99,22,17}
----> 4 print(len(set1 + set2 + set3))

TypeError: unsupported operand type(s) for +: 'set' and 'set'
```

5. **What keyword is used in Python to raise exceptions?**
   a) raise
   b) try
   c) goto
   d) except

   Ans. The correct answer is a) Raise. The raise keyword is used to raise an exception.

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. The correct answer is 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. The correct answer is c) 208

```
In [37]: print(4**3 + (7 + 5)**(1 + 1))

         208
```

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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. The correct answer is a) strptime()

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

   Ans. The correct answer is 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 correct answer is 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 correct answer is 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. The correct option is 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

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B. dump() method
C. load() method
D. None of the mentioned above

Ans. The correct answer is 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 correct answer is a) load() method.

15. **A text file contains only textual information consisting of ___.**
A. Alphabets
B. Numbers
C. Special symbols
D. All of the mentioned above

Ans. The correct answer is 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. The correct answer is d) Both a and b

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```
In [1]: captains = { "Enterprise": "Picard", "Voyager": "Janeway", "Defiant": "Sisko", }
        captains
Out[1]: {'Enterprise': 'Picard', 'Voyager': 'Janeway', 'Defiant': 'Sisko'}

In [2]: for ship, captain in captains.items(): print(ship, captain)

        Enterprise Picard
        Voyager Janeway
        Defiant Sisko

In [3]: for ship in captains: print(ship, captains[ship])

        Enterprise Picard
        Voyager Janeway
        Defiant Sisko
```

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. The correct answer is d) captains = { }

```
In [7]: captains = {}
        print(type(captains))

        <class 'dict'>
```

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. The correct answer is b) **captains["Enterprise"] = "Picard" captains["Voyager"] = "Janeway" captains["Defiant"] = "Sisko"**

```
In [11]: captains
Out[11]: {}

In [12]: captains["Enterprise"] = "Picard"
         captains["Voyager"] = "Janeway"
         captains["Defiant"] = "Sisko"

In [13]: captains
Out[13]: {'Enterprise': 'Picard', 'Voyager': 'Janeway', 'Defiant': 'Sisko'}
```

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

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

```
In [15]: for item in captains.items(): print(f"The [ship] is captained by [captain].")

         The [ship] is captained by [captain].
         The [ship] is captained by [captain].
         The [ship] is captained by [captain].

In [16]: for ship, captain in captains.items(): print(f"The {ship} is captained by {captain}.")

         The Enterprise is captained by Picard.
         The Voyager is captained by Janeway.
         The Defiant is captained by Sisko.

In [17]: for captain, ship in captains.items(): print(f"The {ship} is captained by {captain}.")

         The Picard is captained by Enterprise.
         The Janeway is captained by Voyager.
         The Sisko is captained by Defiant.
```

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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. The correct answer is c) **del captains["Discovery"]**

```
In [25]: del captains["Discovery"]
```

```
In [26]: captains
Out[26]: {'Enterprise': 'Picard', 'Voyager': 'Janeway', 'Defiant': 'Sisko'}
```