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(Q1.) What type of errors do occur in Python, write the a program with different types of errors as well as write separate correction code?

Ans:There are different types of error in python.

1)Syntax Error:

- violate the rule of python.
- Syntax error also called grammatical mistake in programming languages.

Example:

```
In [1]: print"hello world"
```

```
File "<ipython-input-1-967a5b6875dd>", line 1
```

```
print"hello world"
```

```
^
```

```
SyntaxError: invalid syntax
```

```
In [2]: print("hello world")
```

```
hello world
```

```
In [7]: print("hello developers")
```

```
hello developers
```

2)**NameError**: Name error mean that python tried to used variable or function name.When the variable is not define the NameError will be created.

Example:

```
In [1]: print(name)#here the name is not define.So thats why we get error
        #Error code.
```

```
-----
NameError                                Traceback (most recent call last)
<ipython-input-1-9ba126b17b03> in <module>
----> 1 print(name)

NameError: name 'name' is not defined
```

```
In [2]: name="correct code"#here we define the variable.And program is run successfully|
        print(name)

correct code
```

3)**TypeError**: A type error occurs when an operation or function is applied to an object of inappropriate type.

Example:

```
In [5]: number=123456 #this is the example of typeerror we try to concate
        name="this is my personal number" #two variables the help of + sign but we not able to
        print(name+number) #concate and we get typeerror.
```

```
-----
TypeError                                Traceback (most recent call last)
<ipython-input-5-73a2606e7381> in <module>
     1 number=123456 #this is the example of typeerror we try to concate
     2 name="this is my personal number" #two variables the help of + sign but we not able to
----> 3 print(name+number) #concate and we get typeerror.

TypeError: can only concatenate str (not "int") to str
```

```
In [6]: number=123456 #Correction of previous code we use , sign instead of
        name="this is my personal number" # + sign.
        print(name,number)
```

this is my personal number 123456

Q2. What are Boolean String test, write the code for each Boolean string test code?

Answer 2: Boolean string return two possible values which is true or false in numeric 0 or 1.

Example: 1).isalnum() 2).isalpha() 3).isdigit() 4).istitle() 5).isupper() and many more.

```
In [15]: my_string="hello world"
print(my_string.isalnum()) #check if all char are numbers
print(my_string.isalpha()) #check if all char in the string are alphabetic
print(my_string.isdigit()) #test if string contains digits
print(my_string.isspace()) #test if string contains space
print(my_string.isupper()) #test if string contains upper case
print(my_string.islower()) #test if string contains lower case
```

False
False
False
False
False
True

Q3: What is formatting string input mean in Python, write a program in which formatting string input is used?

Ans: Formatting string are design to format the inputs.

The following are formatting string

- 1) Capitalize ()
- 2) Upper ()
- 3) Lower ()

Example: Formatting string input

```
name=input("what is your country name ?")  
print(name.capitalize())  
print(name.upper())  
print(name.lower())
```

```
what is your country name ?my country name is pakistan  
My country name is pakistan  
MY COUNTRY NAME IS PAKISTAN  
my country name is pakistan
```