Learning Python

- ## 1st step:

Print

In [3]:
```
print ("Hello World")
```

```
Hello World
```

In [4]:
```
print ("Hello, World")
```

```
Hello, World
```

- ## 2nd step:

Variables for Strings

In [5]:
```
name = "Hyper"
print (name)
```

```
Hyper
```

In [7]:
```
first_name = "Hyper"
last_name = "Spy"
print(first_name + last_name)
```

```
HyperSpy
```

In [9]:
```
country = "Pakistan"
comma = ","
city = "Karachi"
where_do_i_live = country + comma + city
print(where_do_i_live)
```

```
Pakistan,Karachi
```

- ## 3rd step:

Variables for Numbers

In [11]:
```
cars = 100
cars_sold = 25
cars_left = cars - cars_sold
print (cars_left)
```

```
75
```

In [14]:

```
number_of_mobiles = 50
number_of_mobiles_sold = 10
number_of_mobiles_left = number_of_mobiles - number_of_mobiles_sold
print(number_of_mobiles_left)
```

```
40
```

- ## 4rth step:

  ### Math expressions: Familiar operators

In [15]:

```
popular_number = 3.5 + 3.5
print(popular_number)
```

```
7.0
```

In [16]:

```
popular_number = 24/2
print(popular_number)
```

```
12.0
```

- ## 5th

  ### Variable Names Legal and Illegal

illegal words:

- user name
- user-name

legal words:

- user_name

- ## 6th step:

  ### Math expressions: Unfamiliar operators

In [19]:

```
left_over = 10 % 5
print(left_over)
```

```
0
```

In [20]:

```
left_over = 10 % 4
print(left_over)
```

```
2
```

In [21]:

```
age = 16
print(age+1)
```

```
17
```

In [22]:

```
age = 15
age = age + 1
print(age)
```

```
16
```

In [23]:

```
age = 15
age += 1
print(age)
```

```
16
```

In [24]:

```
age = 14
age -= 2
print(age)
```

```
12
```

- 7th step:

  Math expressions: Eliminating ambiguity

In [27]:

```
bread_cost = 1 * (3 + 2) * 2
print(bread_cost)
```

```
10
```

In [28]:

```
cookie_price = 8 * 10 - 20
print(cookie_price)
```

```
60
```

- 8th step:

  Concatenating text strings

In [1]:

```
name = "Hyper, Spy"
print(name)
```

```
Hyper, Spy
```

In [2]:

```
first_name = "Hyper"
space = ","
last_name = "Spy"
```

```
full_name = first_name + space + last_name
print(full_name)
```

```
Hyper,Spy
```

- ## 9th step:

  ### if statements

In [7]:

```
species = "dog"
if species == "dog":
    print("Yep,I wanna buy It")
```

```
Yep,I wanna buy It
```

In [11]:

```
car_company = "honda"
if car_company == "honda":
    print("yep,i wanna buy a car")
if car_company != "honda":
    print("i dont wanna buy the car")
```

```
yep,i wanna buy a car
```

- ## 10th step:

  ### Comparison operators

In [5]:

```
lottery_number = "12345"
if lottery_number == "12425":
    print("congrats, you won")
if lottery_number != "12425":
    print("Better luck next time")
```

```
Better luck next time
```

In [9]:

```
price = 100
if price >= 101:
    print("i cant afford this")
if price <= 100:
    print("i can afford this")
```

```
i can afford this
```

- ## 11th step:

  ### Comparison operators

In [10]:

```
bird = "parrot"
if bird == "parrot":
    print("yes i wanna buy it")
```

```
if bird != "parrot":
    print("i dont wanna buy")
```

```
yes i wanna buy it
```

In [19]:

```
mango_condition = "rotten"
if mango_condition == "fresh":
    price = "100"
elif mango_condition == "not fresh":
    price = "50"
else:
    mango_condition = "rotten"
    price = "0"
print(price)
```

```
0
```

- ## 12th step:

Comparison operators

In [14]:

```
height = 5
weight = 40
if weight >50 and height <= 7:
    status = "Good Physique"
if weight <50 and height <6:
    status = "Normal Physique"
print("You have a",status)
```

```
You have a Normal Physique
```

In [13]:

```
age = 11
ticket_price = 100
if age >= 60 or age <= 12:
    ticket_price = 0
if age >12 and age <60:
    ticket_price = 100
print("Your ticket price is",ticket_price)
```

```
Your ticket price is 0
```

- ## 13th step:

if statements nested

In [16]:

```
day = "saturday"
end_of_the_day = "Good Night"
if day == "saturday":
    print("cook some pancakes")
    print("do the house cleaning")
    print("watch some tv")
print(end_of_the_day)
```

```
cook some pancakes
do the house cleaning
watch some tv
Good Night
```

In [17]:

```
day = "monday"
endoftheday = "Sweet Dreams"
if day == "monday":
    print("make your breakfast")
    print("go to the school")
    print("comeback home")
print(endoftheday)
```

```
make your breakfast
go to the school
comeback home
Sweet Dreams
```

In [18]:

```
a = 1
b = 1
c = 2
d = 2
x = 3
y = 4

if a == b:
    if c == d:
        x = y
        print(x)
```

```
4
```

- 14th step:

Comments

In [21]:

```
if a == b:
    if c == d:
        x == y
        print(x)
# lets see where the issue is if the first two statements are false and make it a commen

if a == b:
    if c == d:
        # x == y
        print(x)
```

```
4
4
```

In [25]:

```
'''
ignore this
ignore this too
ignore this one too
```

```
'''
print("hello world")
```

```
hello world
```

- ## 15th step:

  ### Lists

In [27]:

```
classmate = ["alex", "stephen", "jhon"]
print("Hi there",classmate[0])
```

```
Hi there alex
```

- ## 16th step:

  ### Lists: Adding and changing elements

In [29]:

```
classmate = ["alex", "stephen", "jhon"]
classmate.append("jerry")
print(classmate[3])
```

```
jerry
```

In [30]:

```
classmate = ["alex", "stephen", "jhon"]
classmate = classmate + ["jerry", "thomas"]
print(classmate)
```

```
['alex', 'stephen', 'jhon', 'jerry', 'thomas']
```

- ## 17th step

  ### Lists: Taking slices out of them

In [52]:

```
classmate = ["alex", "stephen", "jhon"]
students = classmate[1:3]
print(students)
```

```
['stephen', 'jhon']
```

- ## 18th step:

  ### Lists: Deleting and removing elements

In [54]:

```
classmate = ["alex", "stephen", "jhon"]
del classmate[2]
print(classmate)
```

```
['alex', 'stephen']
```

In [55]:

```
classmate = ["alex", "stephen", "jhon"]
classmate.remove("alex")
print(classmate)
```

```
['stephen', 'jhon']
```

- 19th step:

  Lists: popping elements

In [67]:

```
past_scores = [85, 92, 78, 90]
present_scores = []
latest_scores = []
present_scores = past_scores.pop(2)
latest_scores.append (present_scores)
print(latest_scores)
```

```
[78]
```

In [ ]:

```
# steps:
#the varible that is handling the popped value
present_scores
#step 2
=
#step 3
#name of the list the thing is being popped off
past_scores
#step 4
.
#step 5
#the keyword
pop
#step 6
#the index number of the targated value
2
```

you can also pop and insert the value from only one line of code

tasks_accomplished.insert(1, tasks.pop(1))

first the variable that will hold the popped value

then keyword .insert

then(and the index value of the value that is being popped out (2

then comma,

then space

then the name of the list from which the value is being popped out

then the keyword.pop

then the index value of the value being popped out

finally close the brackets

- 20th step:

  Tuples

In [78]:

```
inventory = ("sword", "shield", "potion", "key")
second_inventory_item = inventory[1]
#now if we need to change the 2 item in inventory we need to write the whole code again
inventory = ("sword", "axe", "potion", "key")
```

- 21th step

  for loops

In [97]:

```
clean_cities = ["Islamabad", "Bahawalpur", "Sahiwal", "Rawalpindi", "Gwadar"]
city_to_check = "Gwadar"
for a_clean_city in clean_cities:
    if city_to_check == a_clean_city:
        print("its a clean  city")
        break
else: print("no its not a clean city")
```

```
its a clean  city
```

- 22th step:

  for loops nested

In [2]:
```
first_names = ["Ethan", "Sophia", "Marcus", "Elena"]
last_names = ["Vance", "Chen", "Rodger", "Kim"]
full_name = []
for a_first_name in first_names:
    for a_last_name in last_names:
        full_name.append(a_first_name + " " + a_last_name)
print(full_name)
```

```
['Ethan Vance', 'Ethan Chen', 'Ethan Rodger', 'Ethan Kim', 'Sophia Vance', 'Sophia Che
n', 'Sophia Rodger', 'Sophia Kim', 'Marcus Vance', 'Marcus Chen', 'Marcus Rodger', 'Marc
us Kim', 'Elena Vance', 'Elena Chen', 'Elena Rodger', 'Elena Kim']
```

- 23th step:

  Getting information from the user and converting strings and numbers

In [7]:
```
clean_cities = ["Islamabad", "Bahawalpur", "Sahiwal", "Rawalpindi", "Gwadar"]
city_to_check = input("Enter the name of a city")
for a_clean_city in clean_cities:
    if city_to_check == a_clean_city:
        print("yep its a clean city")
        break
else: print("its not a clean city")
```

```
its not a clean city
```

In [10]:
```
good_student = ["Jhon", "Alex"]
student = input("Enter student's name")
for a_good_student in good_student:
    if student == a_good_student:
        print("he is a good student")
        break
else: print("he's not a good student")
```

```
he is a good student
```

- 24th step:

  Changing case

In [2]:
```
city_to_check = input("Please Enter Your City Name: ")
city_to_check = city_to_check.lower()
clean_cities = ["islamabad", "bahawalpur", "sahiwal", "rawalpindi", "gwadar"]
for a_clean_city in clean_cities:
```

```
    if city_to_check == a_clean_city:
        print("Your City Is One Of The Cleanest Cities In Pakistan")
```