Python Practice Set

This practice set ccovers following topics:

1. **Strings**
2. **Type Casting**
3. **Format Strings**
4. **If-Else Statements**

Each question is designed to improve your **problem-solving skills** with **real-world examples**.

Instructions:

- Read each question carefully.
- Solve the problem using Python.
- Use **string methods, type casting, f-strings, and if-else logic** where necessary.
- Avoid using external libraries; focus on **core Python concepts**.

Q1: User Input - Name Formatting

`name = input('Enter your full name: ')`

Convert the name to title case and print it.

In [1]:
```
name = input('Enter your full name: ')
print(name.capitalize())
print(name.upper())
print(name.lower())
```

```
Hadia naseer
HADIA NASEER
hadia naseer
```

Q2: Type Casting - Total Bill Calculation

- `price = input('Enter price of item: ')`
- `quantity = input('Enter quantity: ')`

Convert values to appropriate types and calculate total bill.

In [5]:
```
price = int(input('Enter price of item: '))
quantity = int(input('Enter quantity: '))
print(price*quantity)
print(type(price))
print(type(quantity))
#else its type is string
```

```
340
<class 'int'>
<class 'int'>
```

Q3: String Manipulation - Username Creation

`email = input('Enter your email: ')`

Extract username from email (everything before '@')

In [7]:
```
email = input('Enter your email: ')
mymail=email.split('@')[0]
print(mymail)
```

```
hadianaseer
```

Q4: If-Else - Voting Eligibility

`age = input('Enter your age: ')`

Check if the user is eligible to vote (18+).

In [10]:
```
age = int(input('Enter your age: '))
if(age>=18):
   print("you are eligible for vote")
else:
   print("you are not eligible ")
```

```
you are eligible for vote
```

Q5: Format String - Invoice Generation

`name = 'Alice'`

`product = 'Laptop'`

`price = 799.99`

Print an invoice using an f-string.

In [14]:
```
name = 'Alice'

product = 'Laptop'

price = 799.99

invoice= "A customer named {name} ,bought a propduct that is {product} and its price is {price}"
print(invoice)
```

```
A customer named {name} ,bought a propduct that is {product} and its price is {price}
```

Q6: String Operations - Word Count

`paragraph = 'Python is easy to learn. Python is powerful.'`

Count occurrences of the word 'Python'.

In [ ]:
```
paragraph = 'Python is easy to learn. Python is powerful.'

counts= paragraph.count("Python") #what i learned in this code , case sensitivity i was searching for 'python' l
print(counts)
```

Q7: Type Casting - Area Calculation

`length = input('Enter length: ')`

`width = input('Enter width: ')`

Convert inputs to float and calculate area.

In [ ]:
```
length =float( input('Enter length: '))

width = float(input('Enter width: '))
area=length*width
print(area)
print(type(length))
print(type(width))
```

Q8: If-Else - Password Strength Checker

`password = input('Enter password: ')`

Check if password length is at least 8 characters.

In [ ]:
```
while True:
  password = input('Enter password: ')
  if len(password)==8 :
    print("strong password")
    break
  elif len(password)>=9 :
    print("not allowed")

  else:
    print("weak password")
```

Q9: Format String - Personalized Message

`name = input('Enter your name: ')`

Print a greeting message using an f-string.

In [ ]:
```
name = input('Enter your name: ')
greeting=f"Assalam-o-alaikum {name} hope you are doing well , May allah bless you with deen and iman"
print(greeting)
```

Q10: String Replacement - Censorship

`text = 'This is a bad word!'`

Replace 'bad' with '***'.

In [ ]:
```
text = 'This is a bad word!'
rep=text.replace('bad' ,'*')
print(rep)
```

Q11: If-Else - Even or Odd Number

`num = input('Enter a number: ')`

Check if number is even or odd.

In [2]:
```
num = int(input('Enter a number: '))
if(num%2==0):
  print("even")
else:
    print("odd")
```

```
even
```

Q12: String Slicing - Extracting Initials

`name = input('Enter your full name: ')`

Extract initials from the name.

Hint:

1. "Elon Musk" → "E.M."
2. "Ada Lovelace" → "A.L."
3. "Alan Turing" → "A.T."

In [34]:
```
name = input('Enter your full name: ')
hee= name.split()  # this function will split words from input string
erm=''.join(he[0] for he in hee) # it will concat letters  of zero index
print(erm)
```

```
hn
```

Q13: Type Casting - Temperature Converter

`celsius = input('Enter temperature in Celsius: ')`

Convert to Fahrenheit.

In [39]:
```
celsius =float( input('Enter temperature in Celsius: '))
f=(9/5)*celsius+32
print(f,"Degrees Fahrenheit.")
```

```
98.60000000000001 Degrees  Fahrenheit.
```

Q14: If-Else - Grading System. Assign grades based on marks.

`marks = input('Enter your marks: ')`

Example Grading Criteria:

Percentage	Grade
90 - 100%	A+
80 - 89%	A

70 - 79%	B
60 - 69%	C
50 - 59%	D
Below 50%	F

Hint:

1. Take user input for **obtained marks**.
2. Convert it to percentage: [\text{percentage} = (\text{obtained marks} / 200) \times 100]
3. Use **if-elif-else** to assign grades.

Test Cases:

1. **180 → 90% → A+**
2. **160 → 80% → A**
3. **140 → 70% → B**
4. **120 → 60% → C**
5. **100 → 50% → D**
6. **90 → 45% → F**

In [36]:
```
marks = float(input('Enter your marks: '))

if marks >= 180:
    print("90% A+ GRADE")
elif marks >= 160:
    print("80% A GRADE")
elif marks >= 140:
    print("70% B GRADE")
elif marks >= 120:
    print("60% C GRADE")
elif marks >= 100:
    print("50% D GRADE")
else:
    print("Fail")
```

```
60% C GRADE
```

Q15: Format String - Receipt Printing

`item = 'Burger'`

`price = 5.99`

`qty = 2`

Example Output:

```
********** RECEIPT **********
Item:       Laptop
Quantity:   2
Unit Price: $800
Total:      $1600
******************************
Thank you for shopping with us!
```

In [30]:
```
item = 'Burger'

price = 5.99

qty = 2
print('*'*10,'RECEIPT','*'*10)
print(f'ITtem:     {item}')
print(f'Quantity:  {qty}')
print(f'unit price: ${price}')
total= price*qty
print(f'Total:   ${total}')
print('*'*30)
print("Thank you for shopping with us!")
```

```
********** RECEIPT **********
ITtem:     Burger
Quantity:  2
unit price: $5.99
Total:   $11.98
******************************
Thank you for shopping with us!
```

Q16: String Methods - Checking Email Validity

`email = input('Enter your email: ')`

Check if '@' is present in email.

In [27]:
```
email = input('Enter your email: ')
if('@' in email):
  print("valid email")
else :
     print("invalid email")
```

```
valid email
```

Q17: If-Else - Leap Year Checker

`year = input('Enter a year: ')`

Check if it's a leap year.

1. **Divisible by 4** → If a year is **divisible by 4**, it might be a leap year.
2. **Not divisible by 100** → If a year is **divisible by 100**, it is **not** a leap year **unless**...
3. **Divisible by 400** → If a year is **divisible by 400**, it **is** a leap year.

In [24]:
```
year =int( input('Enter a year: '))
if(year%4==0):
    print("it's a leap year")
elif(year%100==0):
    print(" it is not a leap year ")
elif(year%400==0):
    print("it's a leap year")
else:
      print(" it is not a leap year ")
```

```
it's a leap year
```

Q18: String Operations - Remove Extra Spaces

`text = '  Hello   World  '`

Remove extra spaces.

In [21]:
```
text = '  Hello   World  '
a=''.join(text.split())
print(a)
```

```
HelloWorld
```

Q19: Type Casting - Discount Calculation

```
original_price = input('Enter original price: ')
discount = input('Enter discount percentage: ')
```

Calculate final price after discount.

$$\text{Discount Amount} = \left(\frac{\text{discount}}{100}\right) \times \text{original price}$$

$$\text{Final Price} = \text{Original Price} - \text{Discount Amount}$$

In [18]:
```
original_price = int(input('Enter original price: '))
discount = int(input('Enter discount percentage: '))
da=(discount/100)*original_price
final=original_price-da
```

```
print(final)
```

```
0.0
```

Q20: If-Else - ATM Withdrawal

```
balance = 5000
withdraw = input('Enter amount to withdraw: ')
```

Check if withdrawal is possible.

In [16]:
```
balance = 5000
withdraw = int(input('Enter amount to withdraw: '))

if(withdraw>5000):
    print("Check your Balance")
else:
    print(withdraw,"PLEASE COLLECT YOUR CASH")
```

```
not possible
```

Q21: String Formatting - Dynamic Table Display

```
name = 'Alice'
age = 25
```

Display formatted table row.

Example Output:

```
    -----------------------------------
    | Name        | Age | Department  |
    -----------------------------------
    | Alice       | 25  | HR          |
    | Bob         | 30  | IT          |
    | Charlie     | 28  | Marketing   |
    -----------------------------------
```

In [12]:
```
name = 'Alice'
age = 25
depart='AI'
print('-'* 30)

print("| Name          | Age |Department"|)
print('-'* 30)

print( f'|{name}         | {age}    | {depart}|')
print('-'* 30)
```

```
------------------------------
| Name          | Age |Department
------------------------------
|Alice         | 25    | AI|
------------------------------
```

Q22: String Manipulation - Reverse String

```
text = input('Enter a string: ')
```

Reverse the string.

In [2]:
```
text = input('Enter a string: ')
elf=text[::-1]
print(elf)
```

```
eye ym fo elppa
```

Q23: If-Else - Comparing Two Numbers

```
num1 = input('Enter first number: ')
num2 = input('Enter second number: ')
```

Print the larger number.

In [19]:
```
num1 = int(input('Enter first number: '))
num2 = int(input('Enter second number: '))
```

```
if(num1>num2):
    print(num1," is larger")
elif(num2>num1):
    print(num2 ," is larger")
else:
    print("we are comparing two numbers please Try Again")
```

```
we are comparing two numbers please Try Again
```

Q24: Type Casting - Currency Converter

`usd = input('Enter amount in USD: ')`

Convert to PKR (1 USD = 280 PKR).

In [5]:
```
usd = float(input('Enter amount in USD: '))
pkr=280
amm=pkr*usd
print("usd currency in pkr is ", amm)
```

```
usd currency in pkr is  3360.0
```

Q25: Format String - Email Template Generator

`event = 'AI Conference'`

Generate an email template using an f-string.

In [12]:
```
name='Hadia Naseer'
date= '2-2-2025'
event = 'AI Conference'
location='multipurpose hall'
email=f"""Dear {name},
we  want to invite you in an out class event "{event}" which will held on {date} in {location}.
our Staff will provide you pick and drop service
Thank You
regards
AI STAFF"""
print(email)
```

```
Dear Hadia Naseer,
we  want to invite you in an out class event "AI Conference" which will held on 2-2-2025 in multipurpose hall.
our Staff will provide you pick and drop service
Thank You
regards
AI STAFF
```

In [ ]:

In [ ]: