

Python Exercises with Questions and Answers

1, 16 - Assign different grades to students based on their scores.

Question:

If a student scores above 90, assign grade A

If a student scores above 75, assign grade B

If a student scores above 65, assign grade C

Answer (Code):

```
def assign_grade(score):  
    if score > 90:  
        return "A"  
    elif score > 75:  
        return "B"  
    elif score > 65:  
        return "C"  
    else:  
        return "F"
```

21 - Assign different grades to students based on their scores.

Question:

- If a student scores above 85 assign grade A+
- If a student scores above 75 and below 85, assign grade B
- If a student scores above 65 and below 75, assign grade C

Answer (Code):

```
def assign_grade_advanced(score):  
    if score > 85:  
        return "A+"  
    elif 75 < score <= 85:  
        return "B"  
    elif 65 < score <= 75:  
        return "C"  
    else:  
        return "F"
```

2, 32 - Slice [2:5]

Question:

Write a code in Python to do slice [2:5] for string "THISISWORLDBESTPRATICE"

Answer (Code):

```
s = "THISISWORLDBESTPRATICE"
print(s[2:5]) # Output: "ISI"
```

3, 8, 13, 28, 33, 38 - File Read and Write

Question:

Perform following file operation: Read file content, Write into the file

Answer (Code):

```
with open("sample.txt", "r") as file:
    content = file.read()
print(content)

with open("sample.txt", "w") as file:
    file.write("This is new content.")
```

4, 9, 14, 19, 24 - Single class with two data members

Question:

Develop a code with a class having two data members

Answer (Code):

```
class MyClass:
    def __init__(self, a, b):
        self.a = a
        self.b = b
```

5, 10, 15, 20, 25, 30, 40 - Draw a line

Question:

Draw a line in a diagram from position (x1, y1) to (x2, y2)

Answer (Code):

```
import matplotlib.pyplot as plt

def draw_line(x1, y1, x2, y2):
    plt.plot([x1, x2], [y1, y2], marker='o')
    plt.title("Line from ({} ,{}) to ({} ,{})".format(x1, y1, x2, y2))
    plt.grid(True)
    plt.show()
```

6 - Print 5th Table

Question:

Develop a code in python using for loop to print 5th table.

Answer (Code):

```
for i in range(1, 11):
    print(f"5 x {i} = {5*i}")
```

7, 17 - Slice [4:12] and [4:13]

Question:

Slice string "THISISWORLDBESTPRATICE" as [4:12] and [4:13]

Answer (Code):

```
s = "THISISWORLDBESTPRATICE"
print(s[4:12])    # ISWORLD
print(s[4:13])    # ISWORLDBES
```

11, 26 - Print 9th Table

Question:

Develop a code in python using for loop to print 9th table.

Answer (Code):

```
for i in range(1, 11):
    print(f"9 x {i} = {9*i}")
```

12 - Slice [-2:-12]

Question:

Write a code in Python to do slice [-2:-12] for string "THISISWORLDBESTPRATICE"

Answer (Code):

```
s = "THISISWORLDBESTPRATICE"
print(s[-2:-12:-1])  # ECITARP
```

18, 23 - Append and Write

Question:

Perform following file operation: Append file content, Write into the file

Answer (Code):

```
with open("sample.txt", "a") as file:
    file.write("\nAppending more content.")

with open("sample.txt", "w") as file:
    file.write("Overwriting with this content.")
```

22 - Dictionary Operations

Question:

Use dictionary to store student names and grades. Write functions to add, update, delete.

Answer (Code):

```
students = {}

def add_student(name, grade):
    students[name] = grade

def update_student(name, grade):
    if name in students:
        students[name] = grade

def delete_student(name):
    if name in students:
        del students[name]
```

27 - Slice [-12:-2]

Question:

Write a code in Python to do slice [-12:-2] for string "THISISWORLDBESTPRATICE"

Answer (Code):

```
s = "THISISWORLDBESTPRATICE"
print(s[-12:-2]) # DBESTPRATI
```

31 - Odd or Even

Question:

Write a code in python to check whether a number is odd or even

Answer (Code):

```
def check_odd_even(num):
    if num % 2 == 0:
        print("Even")
    else:
        print("Odd")
```

34 - Class with Four Data Members

Question:

Develop a class with four data members

Answer (Code):

```
class MyClassFour:
    def __init__(self, a, b, c, d):
        self.a = a
        self.b = b
        self.c = c
        self.d = d
```

35 - Square Root

Question:

Find the square root of a user-defined number using the math library

Answer (Code):

```
import math
```

```
num = float(input("Enter a number: "))
print("Square root is:", math.sqrt(num))
```

36 - Age Categorization

Question:

Categorize a person based on their age

Answer (Code):

```
age = int(input("Enter your age: "))
if age < 13:
    print("You are a Child.")
elif age <= 19:
    print("You are a Teenager.")
elif age <= 64:
    print("You are an Adult.")
else:
    print("You are a Senior.")
```

37 - Reverse a String

Question:

Write a code in Python to reverse string "THISISWORLDBESTPRATICE" using slicing

Answer (Code):

```
s = "THISISWORLDBESTPRATICE"
reversed_str = s[::-1]
print(reversed_str)
```

39 - Inheritance

Question:

Class A with two object attributes; class B inherits and prints them

Answer (Code):

```
class A:
    def __init__(self, x, y):
        self.x = x
        self.y = y
```

```
class B(A):  
    def display(self):  
        print(f"x: {self.x}, y: {self.y}")
```