**PYTHON INTERNSHIP**

**CODE 1**

def reverse\_string(s):

reversed = ""

for i in range(len(s) - 1, -1, -1):

reversed += s[i]

return reversed

def main():

input\_string = "Hello, world!"

reversed\_string = reverse\_string(input\_string)

print(f"Reversed string: {reversed\_string}")

if \_\_name\_\_ == "\_\_main\_\_":

main()

**Corrections:** There are no errors in the above code,code1.

**CODE 2**

def get\_age():

age = input("Please enter your age: ")

if age.isnumeric() and age >= 18:

return int(age)

else:

return None

def main():

age = get\_age()

if age:

print(f"You are {age} years old and eligible.")

else:

print("Invalid input. You must be at least 18 years old.")

if \_\_name\_\_ == "\_\_main\_\_":

main()

**Corrections:** In the above code, code 2, we are trying to compare age , which is a string directly with the integer 18,therefore there is a TypeError in this code. To fix this issue, we should convert age to an integer before making the comparison.

**Correct code:**

def get\_age():

age = input("Please enter your age: ")

if age.isnumeric() and **int(age)** >= 18:

return int(age)

else:

return None

def main():

age = get\_age()

if age:

print(f"You are {age} years old and eligible.")

else:

print("Invalid input. You must be at least 18 years old.")

if \_\_name\_\_ == "\_\_main\_\_":

main()

**CODE 3**

def read\_and\_write\_file(filename):

try:

with open(filename, 'r') as file:

content = file.read()

with open(filename, 'w') as file:

file.write(content.upper())

print(f"File '{filename}' processed successfully.")

except Exception as e:

print(f"An error occurred: {str(e)}")

def main():

filename = "sample.txt"

read\_and\_write\_file(filename)

if \_\_name\_\_ == "\_\_main\_\_":

main()

**Corrections:** The code itself doesn't contain any critical errors, but there is a small concern since the code reads the content of a file named "sample.txt". The error encountered is-

**No such file or directory**: The code assumes that the file "sample.txt" already exists. If the file doesn't exist in the location, this error is encountered. This can be handled by checking whether the file exists before attempting to read it.

**CODE 4**

def merge\_sort(arr):

if len(arr) <= 1:

return arr

mid = len(arr) // 2

left = arr[:mid]

right = arr[mid:]

merge\_sort(left)

merge\_sort(right)

i = j = k = 0

while i < len(left) and j < len(right):

if left[i] < right[j]:

arr[k] = left[i]

i += 1

else:

arr[k] = right[j]

j += 1

k += 1

while i < len(left):

arr[k] = left[i]

i += 1

k += 1

while j < len(right):

arr[k] = right[j]

j += 1

k += 1

arr = [38, 27, 43, 3, 9, 82, 10]

merge\_sort(arr)

print(f"The sorted array is: {arr}")

**Corrections:** The given code is performing the sorting of the input list but there is a small error that is, it does not return the sorted array.

We just have to add ‘return arr’ statement at the end of the function for the program to return the sorted array.

**Corrected code:**

def merge\_sort(arr):

if len(arr) <= 1:

return arr

mid = len(arr) // 2

left = arr[:mid]

right = arr[mid:]

merge\_sort(left)

merge\_sort(right)

i = j = k = 0

while i < len(left) and j < len(right):

if left[i] < right[j]:

arr[k] = left[i]

i += 1

else:

arr[k] = right[j]

j += 1

k += 1

while i < len(left):

arr[k] = left[i]

i += 1

k += 1

while j < len(right):

arr[k] = right[j]

j += 1

k += 1

**return arr**

arr = [38, 27, 43, 3, 9, 82, 10]

merge\_sort(arr)

print(f"The sorted array is: {arr}")

By

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