```
  #1
print("Hello world")
def reverse_string(s):
    reversed_str = ""
    for i in range(len(s) - 1, -1, -1):
        reversed_str += s[i]
    return reversed_str

def main():
    input_string = "Hello, world!"
    reversed_string = reverse_string(input_string)
    print(f"Reversed string: {reversed_string}")

if __name__ == "__main__":
    main()
output:
Hello world
Reversed string: !dlrow ,olleH
#2
  def get_age():
    age_str = input("Please enter your age: ")
    if age_str.isnumeric() and int(age_str) >= 18:
        return int(age_str)
    else:
        return None

def main():
    age = get_age()
    if age is not None:
        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()
output:
Please enter your age: 19
You are 19 years old and eligible.
```

#3
```
def read_and_write_file(ashish):
  try:
    # Read content from the file
    with open(ashish, 'r') as file:
      content = file.read()

    # Open the file again for writing (this will truncate the file)
    with open(ashish, 'w') as file:
      # Write the uppercase content
      file.write(content.upper())

    print(f"File '{ashish}' processed successfully.")
  except Exception as e:
    print(f"An error occurred: {str(e)}")
```
output:
An error occurred: [Errno 2] No such file or directory:
'sample.txt'

#4

```
 ef 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}")
```

output:

The sorted array is: [3, 9, 10, 27, 38, 43, 82]