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```
def reverse_string(s):
    reversed=""            #A string containing reversed characters of s#
    for i in range(len(s)-1,-1,-1):
       reversed+=s[i]
    return reversed
def main():
  input_string="Hello,World!"    #Reversed the string "Hello,World!" and prints to the console#
  reversed_string=reverse_string(input_string)
  print(f"Reversed string:{reversed_string}")


if __name__=="__main__":
       main()



 #output:Reversed  string:!dlroW,olleH #
```

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```
def get_age():
  age=input("please enter your age:")     # user age should be integer or else .the users input is invalid#
  if age.isnumeric() and int(age) >=18:
     return int(age)
  else:
     return None
def main():
  age=get_age()           #prints the message depending on their 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()



#output:Please enter your age:20
#you are 20 years old and eligible.#
```

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```
def read_and_write_file(filename):        # reads and writes the file#
    try:
        with open(filename,'r')as file:    #the name of the file to read and write#
            content=file.read()
        with open(filename,'w')as file:
            file.write(content.upper())
        print(f"File'{filename}'processed successlly.")
    except FileNotFoundError as e:
        print(f"The file '{filename}'does not exist.")
    except Exception as e:
        print(f"An error occured:{str(e)}")

def main():
   filename="sample.txt"       #read and writes the filename {"sample.txt"}#
   read_and_write_file(filename)

if __name__=="__main__":
    main()



#output:The file 'sampe.txt'does not exist#
```

```
def merge_sort(arr):    #sort an array using merge sort algorithm#
    if len(arr)<=1:
        return arr       #sorted list of elements#

    mid=len(arr)//2
    left=arr[:mid]
    right=arr[mid:]

    merge_sort(left)
    merge_sort(right)      # merge the sorted left and right subarrays#

    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):     #add any remaining elements from the left subarray#
      arr[k]=left[i]
      i+=1
      k+=1

    while j<len(right):     #add any remaining elements from the right subarray#
      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}")


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