1.Write a Python program to generate an invoice for a customer using their name, product, and price details.

```
def generate_invoice(customer_name, product, price):
    """Generates a simple invoice.

    Args:
        customer_name: The name of the customer.
        product: The name of the product.
        price: The price of the product.
    """

    # Create the invoice header.
    invoice = f"Invoice for {customer_name}\n\n"

    # Add the product details.
    invoice += f"Product: {product}\n"
    invoice += f"Price: ${price:.2f}\n"

    # Calculate the total amount.
    total_amount = price

    # Add the total amount to the invoice.
    invoice += f"\nTotal: ${total_amount:.2f}"

    # Print the invoice.
    print(invoice)


# Get the customer's name, product, and price.
customer_name = input("Enter customer name: ")
product = input("Enter product name: ")
price = float(input("Enter product price: "))

# Generate the invoice.
generate_invoice(customer_name, product, price)
```

```
Enter customer name: keerthana
Enter product name: ice cream
Enter product price: 45
Invoice for keerthana

Product: ice cream
Price: $45.00

Total: $45.00
```

2.Take a student's name and grade, and print a formatted report like:

"Student: Arjun Mehta\nFinal Grade: A"

```
def print_student_report(name, grade):
  report = f"Student: {name}\nFinal Grade: {grade}"
  print(report)

# Get the student's name and grade.
name = input("Enter student's name: ")
grade = input("Enter student's final grade: ")

# Print the formatted report.
print_student_report(name, grade)
```

```
Enter student's name: Keerthana
Enter student's final grade: 95
Student: Keerthana
Final Grade: 95
```

3.Write a program that removes extra spaces from a user-entered message.

```
def remove_extra_spaces(message):
   return " ".join(message.split())

# Get the message from the user.
message = input("Enter a message: ")

# Remove extra spaces.
processed_message = remove_extra_spaces(message)

# Print the processed message.
print("Processed message:", processed_message)
```

```
Enter a message:  This  is  a   message   with   extra    spaces.
Processed message: This is a message with extra spaces.
```

4.Take a feedback string and count how many times the word “good” appears in it (case-insensitive).

```
def count_good(feedback):
  """Counts the occurrences of "good" in a feedback string (case-
insensitive).

  Args:
    feedback: The feedback string.

  Returns:
    The number of times "good" appears in the feedback.
  """

  return feedback.lower().count("good")

# Get the feedback string from the user.
```

```
feedback = input("Enter feedback: ")

# Count the occurrences of "good".
count = count_good(feedback)

# Print the count.
print(f"The word 'good' appears {count} times in the feedback.")
```

```
Enter feedback: This is a good product. It's really good. Good job!
The word 'good' appears 3 times in the feedback.
```

5.Check if a password contains at least 1 uppercase letter, 1 lowercase letter, 1 digit, and is at least 8 characters long.

```
import re

def check_password(password):
  """Checks if a password meets the criteria:
  - At least 8 characters long
  - At least 1 uppercase letter
  - At least 1 lowercase letter
  - At least 1 digit

  Args:
    password: The password to check.

  Returns:
    True if the password meets the criteria, False otherwise.
  """

  if len(password) < 8:
    return False

  if not re.search("[a-z]", password):
    return False

  if not re.search("[A-Z]", password):
    return False

  if not re.search("[0-9]", password):
    return False

  return True

# Get the password from the user.
password = input("Enter password: ")

# Check the password.
if check_password(password):
  print("Password is valid.")
```

```
Enter password: Keer26@gmail.com
Password is valid.
```