

2303A51563

batch=10

Task 1: Zero-Shot Prompting – Leap Year Check

Scenario

Zero-shot prompting involves giving instructions without providing examples.

Task Description

Use zero-shot prompting to instruct an AI tool to generate a Python function that:

- Accepts a year as input
- Checks whether the given year is a leap year
- Returns an appropriate result

Note: No input-output examples should be provided in the prompt.

Expected Output

- AI-generated leap year checking function
- Correct logical conditions
- Sample input and output
- Screenshot of AI-generated response (if required)

```
def is_leap_year(year):
```

```
    """
```

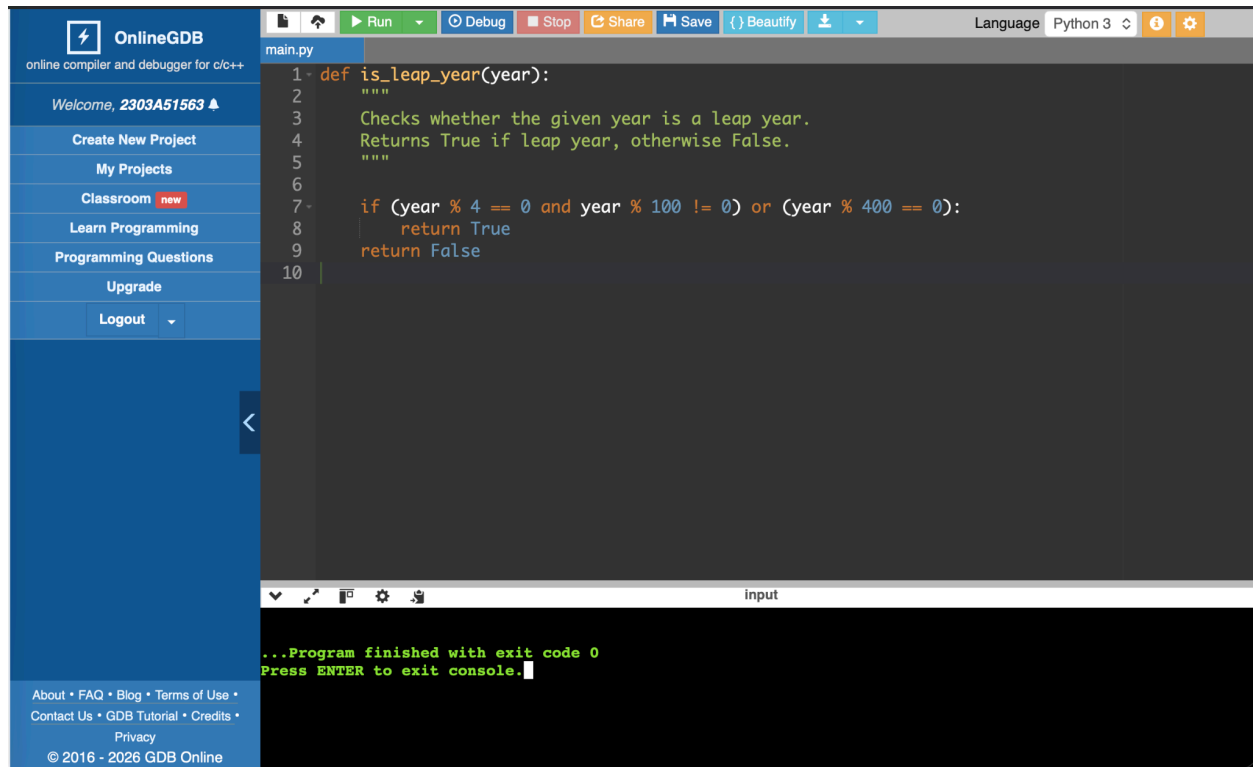
```
        Checks whether the given year is a leap year.
```

```
        Returns True if leap year, otherwise False.
```

```
code
```

```
    """
```

```
if (year % 4 == 0 and year % 100 != 0) or (year % 400
== 0):
    return True
return False
```



The screenshot shows the OnlineGDB web interface. On the left is a blue sidebar with navigation links: 'Welcome, 2303A51563', 'Create New Project', 'My Projects', 'Classroom new', 'Learn Programming', 'Programming Questions', 'Upgrade', and 'Logout'. The main area has a top toolbar with buttons for 'Run', 'Debug', 'Stop', 'Share', 'Save', 'Beautify', and a download icon. Below the toolbar is a code editor with a dark background, showing a Python file named 'main.py'. The code defines a function 'is_leap_year(year)' with a docstring and a conditional return. The console at the bottom shows the message '...Program finished with exit code 0' and 'Press ENTER to exit console.'.

```
1 def is_leap_year(year):
2     """
3     Checks whether the given year is a leap year.
4     Returns True if leap year, otherwise False.
5     """
6
7     if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
8         return True
9     return False
10
```

...Program finished with exit code 0
Press ENTER to exit console.

ask 2: One-Shot Prompting – Centimeters to Inches Conversion

Scenario

One-shot prompting guides AI using a single example.

Task Description

Use one-shot prompting by providing one input-output example to generate a Python function that:

- Converts centimeters to inches
- Uses the correct mathematical formula

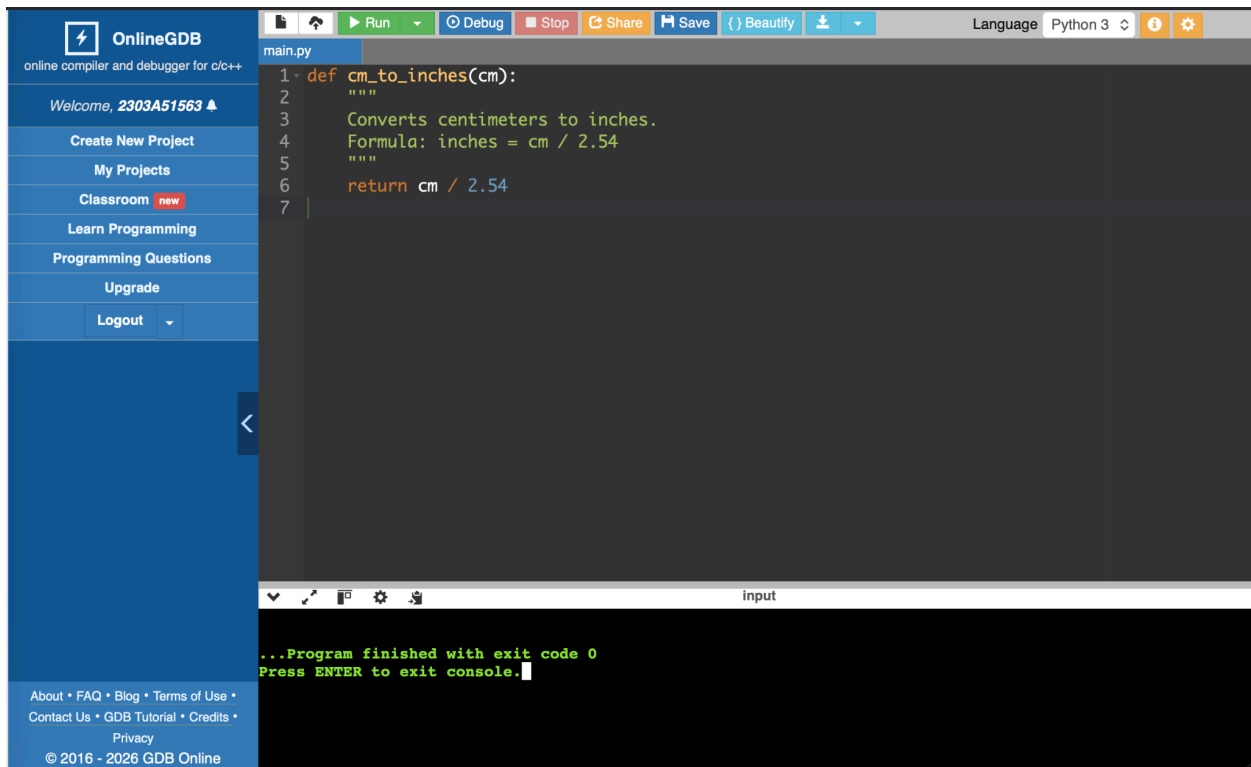
Example provided in prompt:

Input: 10 cm → Output: 3.94 inches

Expected Output

- Python function with correct conversion logic
- Accurate calculation
- Sample test cases and outputs

Code

The screenshot shows the OnlineGDB web interface. On the left is a blue sidebar with navigation links: 'Create New Project', 'My Projects', 'Classroom' (with a 'new' badge), 'Learn Programming', 'Programming Questions', 'Upgrade', and 'Logout'. The main area has a top toolbar with buttons for 'Run', 'Debug', 'Stop', 'Share', 'Save', 'Beautify', and a download icon. Below the toolbar, the file 'main.py' is open, showing a Python function 'cm_to_inches(cm)'. The function has a docstring: 'Converts centimeters to inches. Formula: inches = cm / 2.54'. The function body contains 'return cm / 2.54'. At the bottom, a console window shows the output: '...Program finished with exit code 0' and 'Press ENTER to exit console.' The language is set to 'Python 3'.

```
def cm_to_inches(cm):  
    """  
  
    Converts centimeters to inches.  
    Formula: inches = cm / 2.54  
    """
```

```
return cm / 2.54
```

Scenario

Few-shot prompting improves accuracy by providing multiple examples.

Task Description

Use few-shot prompting with 2–3 examples to generate a Python function that:

- Accepts a full name as input
- Formats it as “Last, First”

Example formats:

- "John Smith" → "Smith, John"
- "Anita Rao" → "Rao, Anita"

Expected Output

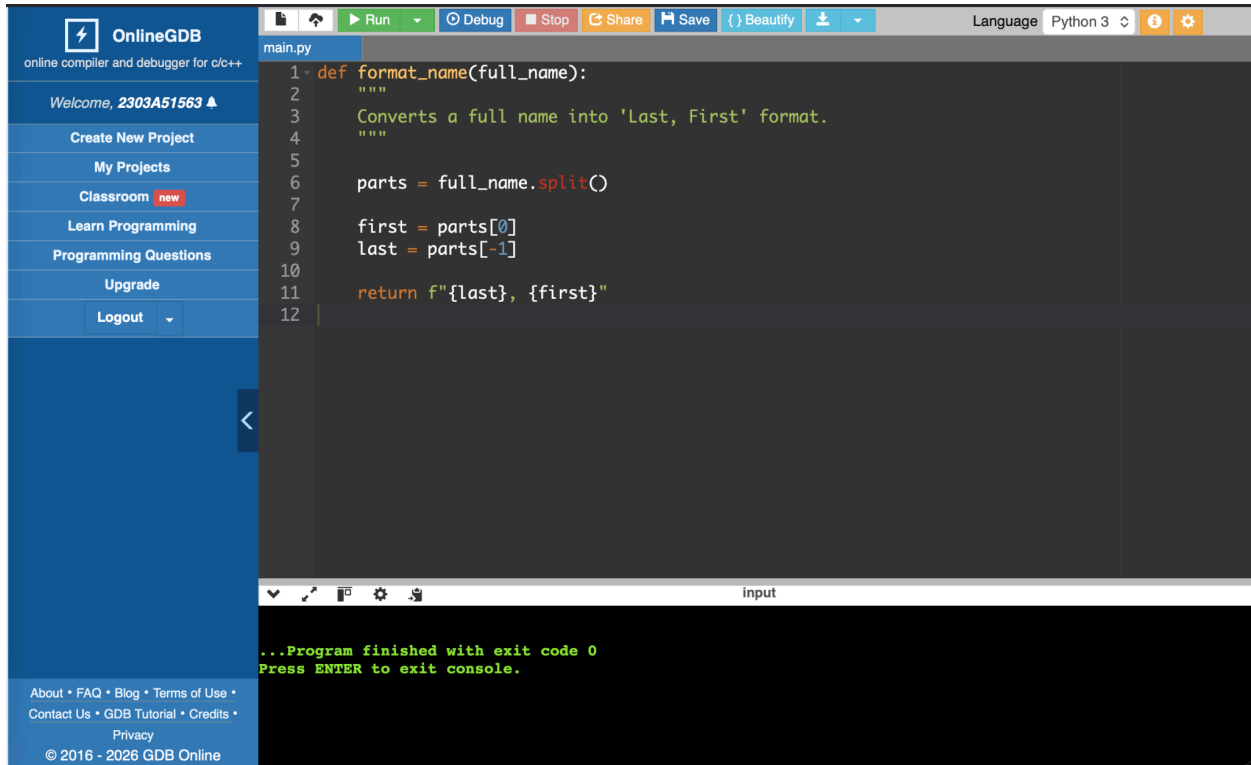
- Well-structured Python function
- Output strictly following example patterns
- Correct handling of names
- Sample inputs and outputs

Code

```
def format_name(full_name):  
    """  
    Converts a full name into 'Last, First' format.  
    """  
  
    parts = full_name.split()  
  
    first = parts[0]
```

```
last = parts[-1]
```

```
return f"{last}, {first}"
```



The screenshot shows the OnlineGDB web interface. On the left is a blue sidebar with navigation links: 'Create New Project', 'My Projects', 'Classroom' (marked 'new'), 'Learn Programming', 'Programming Questions', 'Upgrade', and 'Logout'. The main area displays a Python file named 'main.py' with the following code:

```
1 def format_name(full_name):  
2     """  
3     Converts a full name into 'Last, First' format.  
4     """  
5  
6     parts = full_name.split()  
7  
8     first = parts[0]  
9     last = parts[-1]  
10  
11     return f"{last}, {first}"  
12
```

Below the code editor is a console window showing the output: '...Program finished with exit code 0' and 'Press ENTER to exit console.'

ask 4: Comparative Analysis – Zero-Shot vs Few-Shot Scenario

Different prompt strategies may produce different code quality.

Task Description

- Use zero-shot prompting to generate a function that counts vowels in a string
- Use few-shot prompting for the same problem
- Compare both outputs based on:
 - o Accuracy

- o Readability
- o Logical clarity

Expected Output

- Two vowel-counting functions
- Comparison table or short reflection paragraph
- Conclusion on prompt effectiveness

Code

```
def count_lines(filename):
```

```
    """
```


```
    Reads a text file and returns the number of lines in it.
```

```
    """
```

```
    with open(filename, "r") as file:
```

```
        lines = file.readlines()
```

```
    return len(lines)
```

**OnlineGDB**
online compiler and debugger for c/c++

Welcome, **2303A51563** ▲

Create New Project

My Projects








Classroom **new**

Learn Programming

Programming Questions

Upgrade

Logout ▼



main.py

```
1 def count_lines(filename):
2     """
3     Reads a text file and returns the number of lines in it.
4     """
5
6     with open(filename, "r") as file:
7         lines = file.readlines()
8
9     return len(lines)
10
```

input

```
...Program finished with exit code 0
Press ENTER to exit console.
```

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