

IT 166 Lab 3

Making decisions in Python

Objectives

- Be able to write Python programs that make simple decisions.
- Be able to write Python programs that involve the usage of logical operators.

Preparation

- Launch the Jupyter notebook.
- Rename the notebook page as “lab3”.

Please provide solutions to the problems below.

Problem 1

ULID Analysis

Every student, faculty, or staff member at ISU is assigned with a university login ID (ULID). A valid ULID can only contain alphabetical letters or have numbers appended to the end of it. Write a Python program that can make the following decisions based on a given ULID:

1. If the ULID has only English letters, display it.
2. If the ULID ends with numbers, display the reversed ULID.
3. If the ULID does not belong to any of the previous two categories, display the ULID is not valid.

Expected outcomes with three different examples:

```
Enter a ULID: jding
jding consists of only alphabetical letters.
```

```
Enter a ULID: xfang13
xfang13 ends with a number.
The reversed ULID is: 3lgnafx
```

```
Enter a ULID: apple
apple is not a valid ULID.
```

Problem 2

Numbers

Write a Python program that can distinguish whether a given number is a floating-point number or an integer. If the number is an integer, the program can further tell if the number is an even number or an odd one; if the number is a floating-point number, the program simply displays its value.

Expected outcomes with three examples:

```
Enter a number: 3.14
It is a floating-point number and the value is 3.14.
```

```
Enter a number: -10
It is an even number and the value is -10.
```

```
Enter a number: 15
It is an odd number and the value is 15.
```

Problem 3

Numbers (Advanced)

Modify your solution to Problem 2 such that the modified program is able to tell whether the given number is a positive number or a negative one. (You do not have to consider when the number is 0.)

Expected outcomes with three examples:

```
Enter a number: -3.14
-3.14 is a negative floating-point number.
```

```
Enter a number: 20
20 is a positive even number.
```

```
Enter a number: -17
-17 is a negative odd number.
```