

Python Input / Output Introduction

Input To a Program Via the Keyboard

Input to a program via the keyboard is achieved using the **input()** function. A **function** in python is always followed by round brackets where it accepts the information that goes into the function. The **input("Prompt")** function will often contain a prompt that is displayed on the screen but it is not necessary. The **input()** function will read a line from the keyboard and convert it to a string. In most cases, this information is assigned to a variable. The prompt is always a **string**, a data type that accepts any character and is used for words or sentences. All strings are written between quotations as shown in the example below.

Example:

```
planet = input("Enter the name of a planet in our solar system: ")
```

In the example above, **planet** is a variable that is used to store the answer that was entered by the user after prompted by the question.

A variable is a storage location in the computer's memory that can hold a value.

Output From a Program To the Monitor

To display output from the program onto the monitor the **print** function is used. The **print** function evaluates each object in it and then outputs it onto the screen. Objects are separated by commas which automatically add spaces into the output. The output will appear on the screen and the cursor will move to the next line. Objects can be strings or variables or numbers and they're all treated the same in the print statement.

Example:

```
print("You entered",planet)
```

Example:

```
rockyPlanet = input("Name your favourite rocky planet: ")  
gasGiant = input("Name your favourite Gas Giant: ")  
print("Your favourite planets are:",rockyPlanet,"and",gasGiant)
```

Remember the variables hold the answers the user entered from when they were prompted. Always write the variable name and not the answers to the questions in the code itself. The print function knows to display the value of the variable and not the variable name itself.

Comments

Comments in Python start with the hashtag character, #, and extend to the end of the physical line. A comment may appear at the start of a line or following code. Comments are used to include any text that describes the code. Comments are ignored by the python interpreter when it is executed but are very important for the organization of our code.

Example:

```
# Name: Science North
# Purpose: To improve coding skills through space science
# Date: today

# Asking the user which planets are their favourites and waiting for input
rockyPlanet = input("Name your favourite rocky planet: ")
gasGiant = input("Name your favourite Gas Giant: ")

# Displaying an organized sentence containing the users answers
print("Your favourite planets are:", rockyPlanet, "and", gasGiant)
```

Exercises:

Ex. 1: Write a program that asks the user which planet in our solar system is on average closest to Earth. After they answer the question display the response: You said [answer]. If you said Mercury that's correct, Venus comes closest to Earth during it's orbit but Mercury on Average is the closest.

Ex. 2: Write a program that asks the user to name a new star that has been spotted and how many planets are around it and then displays a sentence letting them know what name they chose and how many planets can be seen around that star.