Piscine Discovery

Administration guide

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Summary:
Guide for the administrators of the Discovery Piscine.

Version: 1

Contents

Chapter I

Overview

Cells overview:

- **Cell 0 shell**: Discover the shell.

- **Cell 1 Python**: Manipulation of variables

- **Cell 2 Python**: Discovery of the conditional.

- **Cell 3 Python**: Discovery of the loops.

- **Cell 4 Python**: Discovery simple objects.

- **Cell 5 Python**: Discovery advanced objects.

- **Cell 6 Python**: Discovery of classes/methods.

- **Cell 7 Python**: Discovery of dictionaries.

Chapter II

Typical day

Hours	Activities
8h00 - 10h00	Project of the day
10h00 - 10h30	Exchange between supervisors and students in a group format
10h30 - 12h00	Project of the day
12h00 - 13h00	Lunch break
13h00 - 15h00	Project of the day
15h00 - 16h00	Mandatory evaluation with the help of the supervisors
16h00 - 18h00	Project of the day

Ideally, the students of the campus could help the Discovery Piscine' students.

Please give the Discovery Piscine's students some advice about using a text editor such as Vim.

Chapter III

First day

Hours	Activities
8h00 - 9h00	Presentation of the Piscine in group format
9h00 - 10h00	Project of the day
10h00 - 10h30	Exchange between supervisors and students in a group format
10h30 - 12h00	Project of the day
12h00 - 13h00	Lunch break
13h00 - 15h00	Project of the day
15h00 - 16h00	Mandatory evaluation with the help of the supervisors
16h00 - 18h00	Project of the day

The Discovery session should begin with a group presentation including an explanation of how the Discovery Piscine works.

Introducing the staff members to the students is optional but highly recommended.
Explaining the curriculum of the Discovery Piscine days is expected.
During the first days, do not hesitate to help the students who struggle with the exercises.

The daily moment of exchange allows the students to seek for help, between them in priority. A supervisor will be there to facilitate the exchange.

Chapter IV

Last day

Hours	Activities
9h00 - 9h30	Presentation of the Ending
9h30 - 10h30	Project of the day
10h30 - 11h00	Exchange between supervisors and students in a group format
11h00 - 12h00	Projects
12h00 - 13h00	Lunch break
13h00 - 15h00	Projects
15h00 - 16h00	Mandatory evaluation with the help of the supervisors
16h00 - 17h00	End of the Piscine

This last day should be the Discovery Piscine closing day.

Students will be able to continue past days.
A group presentation is expected at the beginning of the day.
You will have to be careful not to leave any student behind.

The last moment to discuss the whole Discovery Piscine will be at the end of the day.
We can imagine some animations, like the presentation of the best Project to other students, and so forth.
You should not hesitate to listen and take note of the things that worked or didn't work, in order to improve the next Discovery Piscines.

Chapter V

Cell 0: Shell

	Exercise 00
	The basic
Turn-in directory : $ex00/$	
Files to turn in : `None`	
Allowed functions : `None`	

Solution:

```
> mkdir -p ~/discovery\_piscine/cell00/ex00
```

	Exercise 01
	My first script
Turn-in directory : $ex01/$	
Files to turn in : `42.py`	
Allowed functions : `None`	

Solution:

```
> echo 'print(42)' >> ~/discovery\_piscine/cell00/ex01/42.py
```

	Exercise 02
	Hello !
Turn-in directory : *ex*02/	
Files to turn in : `hello_world.py`	
Allowed functions : `None`	

Solution:

```
> echo 'print(Hello World)' >> ~/discovery\_piscine/cell00/ex02/hello_world.py
```

Chapter VI

Cell 1: Python

	Exercise 00
	Displaying a name
Turn-in directory : *ex*00/	
Files to turn in : `name.py`	
Allowed functions : `All`	

Solution:

```
> cat ~/discovery\_piscine/cell01/ex00/name.py
first_name = 'Wil'
last_name = '42'

print(first_name, last_name)
>
```

	Exercise 01
	Displaying a name, improved
Turn-in directory : *ex*01/	
Files to turn in : `name.py`	
Allowed functions : `All`	

Solution:

```
> cat ~/discovery\_piscine/cell01/ex01/name.py
first_name = 'Wil'
last_name = '42'
whole_name = first_name + ' ' + last_name

print(whole_name)
>
```

![]	Exercise 02
	Displaying your age in 42 years
Turn-in directory : *ex*02/	
Files to turn in : `age.py`	
Allowed functions : `All`	

Solution:

```
> cat ~/discovery\_piscine/cell01/ex02/age.py
age = 25

print(age + 42)
>
```

![]	Exercise 03
	What's your name
Turn-in directory : *ex*03/	
Files to turn in : `whatsyourname.py`	
Allowed functions : `All`	

Solution:

```
> cat ~/discovery\_piscine/cell01/ex03/whatsyourname.py
first_name = input("Hey, what's your first name? : ")
last_name = input("And your last name? : ")

first_name = first_name.strip()
last_name = last_name.strip()

print(f"Well, pleased to meet you, {first_name} {last_name}.")
>
```

Chapter VII

Cell 2: Python

	Exercise 00
	Am I Null?
Turn-in directory : *ex00/*	
Files to turn in : `iszero.py`	
Allowed functions : `All`	

Solution:

```
> cat ~/discovery\_piscine/cell02/ex00/iszero.py
#!/usr/bin/env python

# Ask the user to enter a number
number = float(input("Enter a number: "))

# Check if the number is equal to zero
if number == 0:
    print("This number is equal to zero.")
else:
    print("This number is different from zero.")
>
```

	Exercise 01
	Am I Negative?
Turn-in directory : *ex*01/	
Files to turn in : `isneg.py`	
Allowed functions : `All`	

Solution:

```
> cat ~/discovery\_piscine/cell02/ex01/isneg.py
#!/usr/bin/env python

# Ask the user to enter a number
number = float(input("Enter a number: "))

# Check if the number is negative
if number < 0:
    print("This number is negative.")
elif number > 0:
    print("This number is positive.")
else:
    print("This number is both positive and negative.")
>
```

![]	Exercise 02
	Passwords
Turn-in directory : *ex*02/	
Files to turn in : `password.py`	
Allowed functions : `All`	

Solution:

```
> cat ~/discovery\_piscine/cell02/ex02/password.py
#!/usr/bin/env python

# Define the correct password
password = "Python is awesome"

# Ask the user to enter a password
entered_password = input("Enter the password: ")

# Check if the entered password is correct
if entered_password == password:
    print("ACCESS GRANTED")
else:
    print("ACCESS DENIED")
>
```

![]	Exercise 03
	Multiplication
Turn-in directory : *ex*03/	
Files to turn in : `mult.py`	
Allowed functions : `None`	

Solution:

```
> cat ~/discovery\_piscine/cell02/ex03/mult.py
#!/usr/bin/env python

# Ask the user to enter the first number
num1 = int(input("Enter the first number:\n"))

# Ask the user to enter the second number
num2 = int(input("Enter the second number:\n"))

# Calculate the result of the multiplication
result = num1 * num2

# Display the multiplication equation and result
print(f"{num1} x {num2} = {result}")

# Check the sign of the result
if result > 0:
    print("The result is positive.")
elif result < 0:
    print("The result is negative.")
else:
    print("The result is positive and negative.")
>
```

Chapter VIII

Cell 3: Python

	Exercise 00
	Up to 25
Turn-in directory : *ex00/*	
Files to turn in : `to25.py`	
Allowed functions : `All`	

```
?> cat ~/discovery\_piscine/cell03/ex00/to25.py
#!/usr/bin/env python

# Ask the user to enter a number
num = int(input("Enter a number less than 25:\n"))

# Check if the number is greater than 25
if num > 25:
    print("Error")
else:
  # Create a loop to display numbers from the input up to 25
  while num <= 25:
      print(f"Inside the loop, my variable is {num}")
      num += 1
?>
```

	Exercise 01
	The return of multiplication tables
Turn-in directory : *ex01/*	
Files to turn in : `multiplication_table.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 02
	Do you got it?
Turn-in directory : *ex02/*	
Files to turn in : `i_got_that.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 03
	The Return of the Return of Multiplication Tables
Turn-in directory : *ex03/*	
Files to turn in : `advanced_mult.py`	
Allowed functions : `All`	

Solution in resources.

Chapter IX

Cell 4: Python

	Exercise 00
	See it in Capital
Turn-in directory : *ex00/*	
Files to turn in : `upcase_it.py`	
Allowed functions : `All`	

```
?> cat ~/discovery\_piscine/cell04/ex00/upcase_it.py
 #!/usr/bin/env python

 # Ask the user for a word
 word = input("Give me a word: ")

 # Convert the word to uppercase and display it
 uppercase_word = word.upper()
 print(uppercase_word)
?>
```

	Exercise 01
	Retrieve and Modify a Number
Turn-in directory : *ex01/*	
Files to turn in : `age.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 02
	Performing Basic Operations
Turn-in directory : *ex*02/	
Files to turn in : `calculator.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 03
	Working with Floating-Point Numbers
Turn-in directory : *ex*03/	
Files to turn in : `float.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 04
	I Don't Like Commas
Turn-in directory : *ex*04/	
Files to turn in : `round_up.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 05
	Working with Floating-Point Numbers
Turn-in directory : *ex*05/	
Files to turn in : `float.py`	
Allowed functions : `All`	

Solution in resources.

Chapter X

Cell 5: Python

All solution in resources.

Chapter XI

Cell 6: Python

	Exercise 00
	Discovering Methods!
Turn-in directory : *ex00/*	
Files to turn in : `hello_all.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 01
	The Return of upcase!
Turn-in directory : *ex01/*	
Files to turn in : `upcase_it.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 02

Let's Stroll in the Array
Turn-in directory : *ex02/*
Files to turn in : `downcase_all.py`
Allowed functions : `All`

Solution in resources.

	Exercise 03

Let's Say Hello to everyone!
Turn-in directory : *ex03/*
Files to turn in : `greetings_for_all.py`
Allowed functions : `All`

Solution in resources.

	Exercise 04

Methods Everywhere!
Turn-in directory : *ex04/*
Files to turn in : `methods_everywhere.py`
Allowed functions : `All`

Solution in resources.

	Exercise 05
	Can't touch this!
Turn-in directory : *ex05/*	
Files to turn in : `scope_that.py`	
Allowed functions : `All`	

Solution in resources.

Chapter XII

Cell 7: Python

	Exercise 00
	Organize this list of names for me!
Turn-in directory : *ex00/*	
Files to turn in : `your_namebook.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 01
	Family Matters
Turn-in directory : *ex01/*	
Files to turn in : `family_affairs.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 02
	Give Your Professor a Helping Hand
Turn-in directory : *ex02/*	
Files to turn in : `help_your_professor.py`	
Allowed functions : `All`	

Solution in resources.

	Exercise 03
	People Worth Knowing
Turn-in directory : *ex03/*	
Files to turn in : `persons_of_interest.py`	
Allowed functions : `All`	

Solution in resources.