INTERNET OF THINGS – IT134IU

LAB 3

Instructions: Please follow the steps:
1 – Students work in groups. Please answer the questions clearly. Remember to include your name and your student ID.
2 - Each group leader (ONLY the group leader, please!) submits the report in Pdf format before the deadline.

Group Name:			
No	**ID**	**Name**	**No Contribution (0 point)**
1	ITITIU21045	Nguyễn Minh Đức	16%
2	ITITIU21123	Trần Hoàng Thế Bảo	16%
3	ITITIU21217	Đỗ Đức Huy	16%
4	ITITIU21076	Bùi Đức Mạnh	16%
5	ITITIU21347	Phạm Quang Vinh	16%
6	ITITIU20021	Hàng Huỳnh Công Thuận	20%

LAB 3

1.Activity 1

1. What year did the first Raspberry Pi come out?

-The first Raspberry Pi was released in 2012.

2. What upgrades did the Raspberry Pi 3 Model B+ have over the previous version?

-The Raspberry Pi 3 Model B+ featured a faster processor, more RAM, and improved wireless connectivity compared to the Raspberry Pi 3 Model B.

3. What does NOOBS stand for?

-NOOBS stands for New Out Of the Box Software. It's a user-friendly operating system installer for Raspberry Pi.

4. What is the name of the pre-installed application that allows for creating music with Python code?

-The list doesn't mention a pre-installed application specifically designed for creating music with Python code. However, Raspberry Pi supports Python programming, and there are libraries available for creating music.

5. Where is the operating system stored for the Raspberry Pi?

-The operating system for Raspberry Pi is typically stored on a microSD card.

6. What is the name of the visual programming environment designed for children that comes pre-installed with Raspbian?

-The most popular visual programming environment for Raspberry Pi is Scratch.

7. What is the name of the language used in Mathematica?

-Mathematica uses its own language, also called Mathematica.

8. What is the default username and password for Raspbian?

-The default username for Raspbian is pi and the default password is raspberry. It's recommended to change the default password for security reasons.

9. What does GPIO stand for?

-GPIO stands for General Purpose Input/Output. These are pins on the Raspberry Pi that can be used to interact with electronic components.

10. What is RetroPie?

-RetroPie is a free and open-source emulator that allows you to play classic video games on your Raspberry Pi.

11. True or false? Clicking on the two-folders icon on the main bar loads the home folder.

-True

12. True or false? The microSD card slot is located at the bottom of the Raspberry Pi.

-False. The microSD card slot is typically located on the side of the Raspberry Pi.

13. True or false? To shutdown the Raspberry Pi, select Shutdown from the Application menu.

-True

14. True or false? You may only install the Raspbian OS with NOOBS.

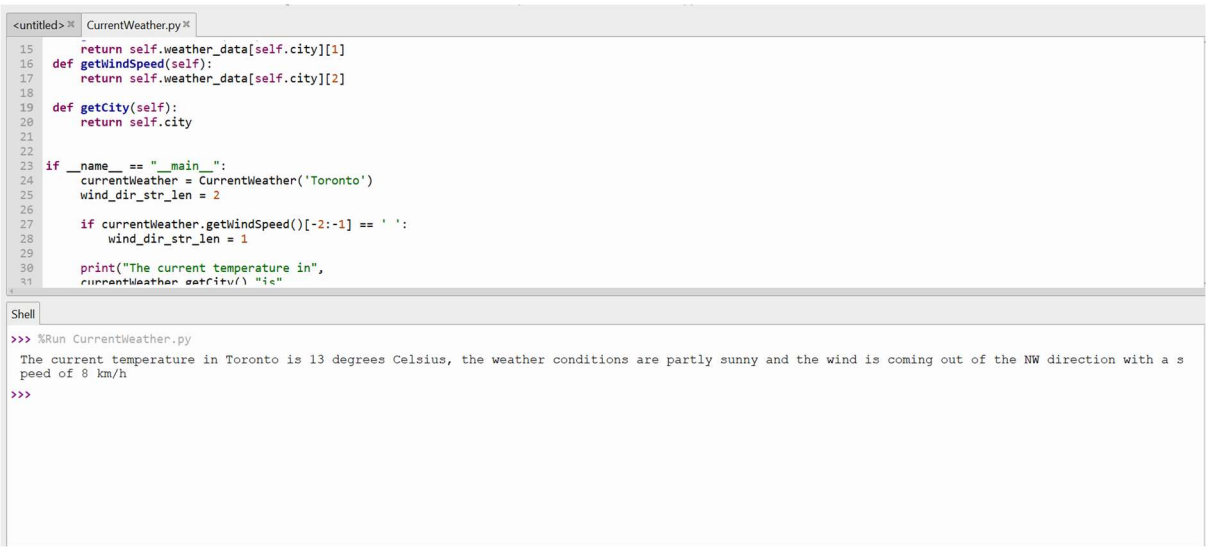
-False. NOOBS is an installer, you can install other operating systems on Raspberry Pi.

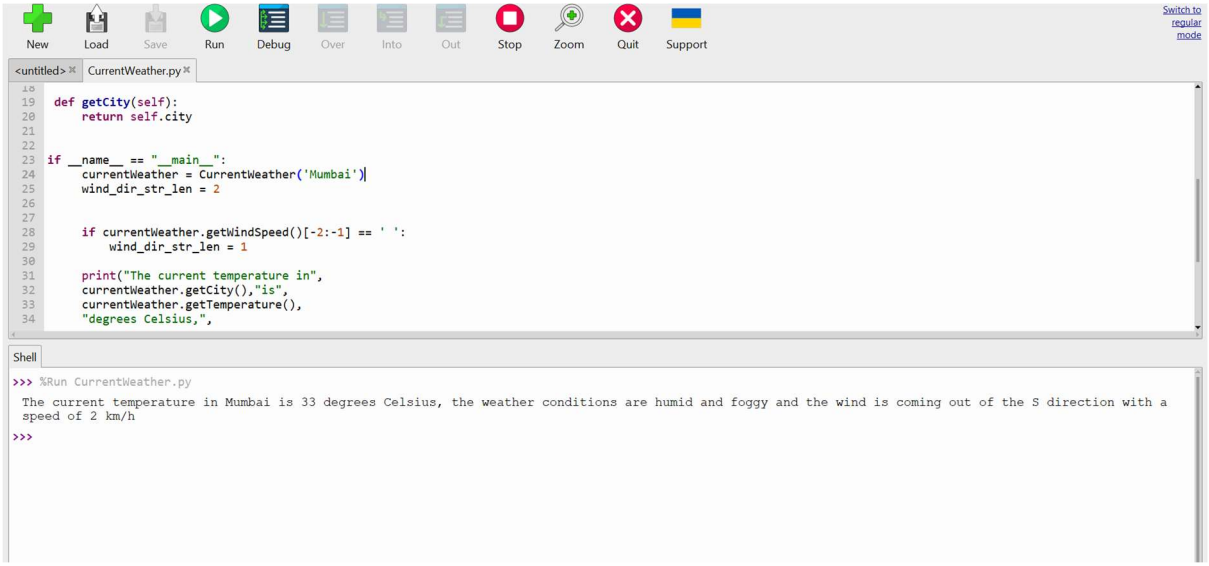
15. True or false? Bluetooth low energy refers to people that eat too many blueberries and have a hard time waking up in the morning.

-False. Bluetooth Low Energy (BLE) is a wireless technology designed for low power consumption.

2.Activity 2

a) Take the result screenshot photos





b) Answer all the questions

1. **Which operating systems is Thonny available for?**

Thonny is available for Windows, macOS, and Linux.

2. **How do we enter Python 2 from the Terminal command line?**

There are a couple of ways to enter Python 2 from the terminal command line, depending on how Python 2 is installed on your system.

If you have both Python 2 and 3 installed: You can check which version of Python is the default by running python --version in your terminal. If Python 3 is the default, you can specify Python 2 using the python2 command followed by your Python script. For example, python2 hello.py would run the Python 2 script hello.py.

If you only have Python 2 installed: You can usually just run your Python script directly from the terminal. For example, if your script is named hello.py, you can run it by typing python hello.py in your terminal.

3. **Which tool in Thonny do we use to view what is inside an object?**

Thonny has a built-in variable explorer that allows you to view the contents of variables, including objects. In the Thonny interface, the variable explorer is usually

located on the right side of the window. You can expand objects in the variable explorer to see their attributes and values.

4. **Give two reasons as to why we are using an object in our weather example code.**

There are several reasons why you might use objects in your weather example code. Here are two reasons:

Encapsulation: Objects allow you to encapsulate data (attributes) and functionality (methods) together. This can help to improve code organization and maintainability.

Data modeling: Objects can be used to model real-world entities, such as weather conditions. By using objects, you can create a more accurate representation of the data you are working with.

5. **What is the advantage of adding a method called getCity to the CurrentWeather class?**

The advantage of adding a method called getCity to the CurrentWeather class is that it provides a way to access the city data in a clean and organized way. Without a method, you would need to directly access the city attribute, which can make your code less readable and maintainable. By using a method, you can encapsulate the logic for retrieving the city data and potentially add additional functionality in the future, such as formatting the city name before returning it.

6. **What language is IDLE written in?**

IDLE is written in Python itself . This is a common approach for creating development tools, as it allows the developers to leverage the power and familiarity of the language they are already using.

3.Activity 3


admin@raspberrypi:~ $ pip install pyjokes
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting pyjokes
Downloading https://www.piwheels.org/simple/pyjokes/pyjokes-0.6.0-py2.py3-n
-any.whl (26 kB)
Installing collected packages: pyjokes
WARNING: The scripts pyjoke and pyjokes are installed in '/home/admin/.loca
in' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this w
ing, use --no-warn-script-location.
Successfully installed pyjokes-0.6.0
admin@raspberrypi:~ $ python3
Python 3.9.2 (default, Mar 12 2021, 04:06:34)
[GCC 10.2.1 20210110] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import pyjokes
>>> pyjokes.get_joke()
'A programmer walks into a bar and orders 1.38 root beers. The bartender info
her it's a root beer float. She says 'Make it a double!'"
>>>
admin@raspberrypi:~ $ python3
Python 3.9.2 (default, Mar 12 2021, 04:06:34)
[GCC 10.2.1 20210110] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import weather
Traceback (most recent call last):
File "<stdin>", line 1, in <module>
ModuleNotFoundError: No module named 'weather'
>>>