Python Advance

Lesson 1

Revisit

- Math operators, data type, variables, list,

- Logical operations: logical operators, Boolean operators, if-elif-else

- Functions: print(), input(), float(), int(), ran(), range,

- Branching: for and while loop

- File Operations: read / write / append

- PyGame Basic

- GUI Basic: tkinter

- Mini-projects:
    - TEXT base - hangman, bunny,
    - PyGame – Spaceship
    - GUI – Currency convertor, To-do List

Data Structure: List

- A list is a collection of items stored in a specific order.
- The items can be of any type, like numbers, words, or even other lists.
- What is the output of below *print* statement?

```
mylist = [1, 2, 3, 4, 5]
print(mylist[2])
```

List - Positioning

- Try to print below content:

```
print(mylist[2])
print(mylist[-2])
```

mylist:	1	2	3	4	5
forward position:	0	1	2	3	4
backward position:	-5	-4	-3	-2	-1

List - Slicing

mylist:	1	2	Apple	3.141516	[4, 5]	Banana
forward position:	0	1	2	3	4	5

					0	1

backward position:	-6	-5	-4	-3	-2	-1

					0	1

```
1  mylist = [1, 2, 'Apple', 3.141516, [4, 5], 'Banana']
2  print(mylist[3] , mylist[4][1])
3  print(mylist[3] , mylist[-2][1])
4
```

Running: lab4-1.py

```
3.141516 5
3.141516 5
>>>
```

Data Collections

List

Tuple
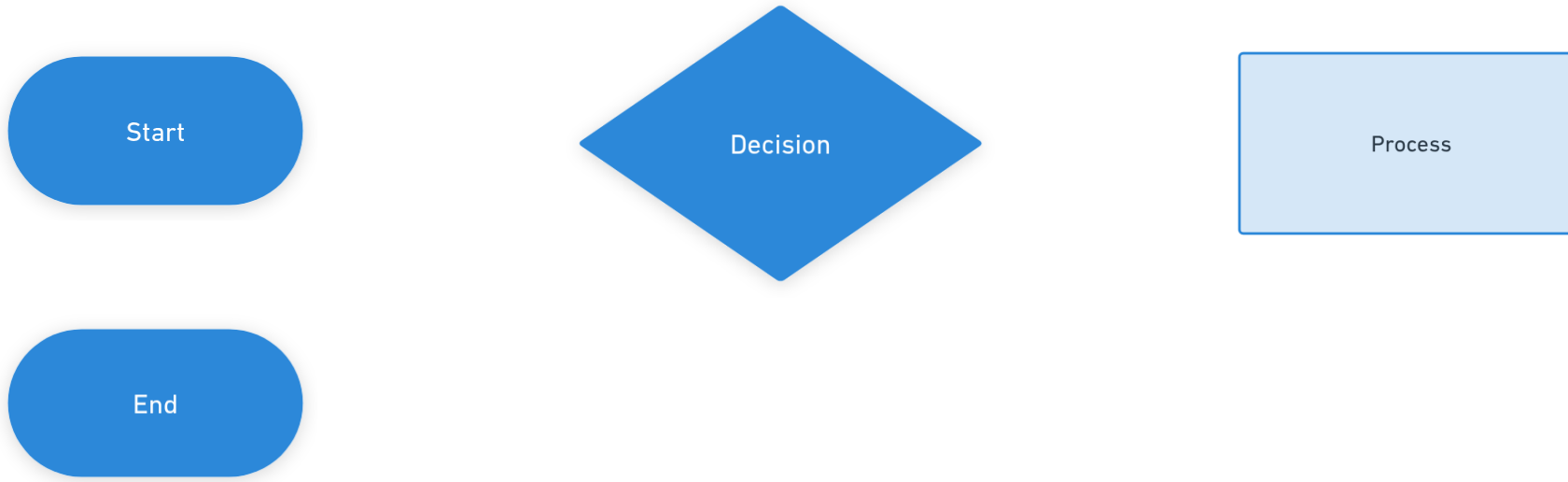
Set

Dictionary

Materials

Explanation and Labs

Quiz - Fundamental

https://www.w3schools.com/python/python_quiz.asp

Whimsical

Please register an free personal account on whimsical.com

Flow Chart – Basic Shaps

Start

Decision

Process

End

Create a Flowchart

- DECISION: Do I have homework due? If yes, complete homework.

- DECISION: Are parents home? If no, call parents.

- Ask permission

- DECISION: Did they say yes? If no, stay home
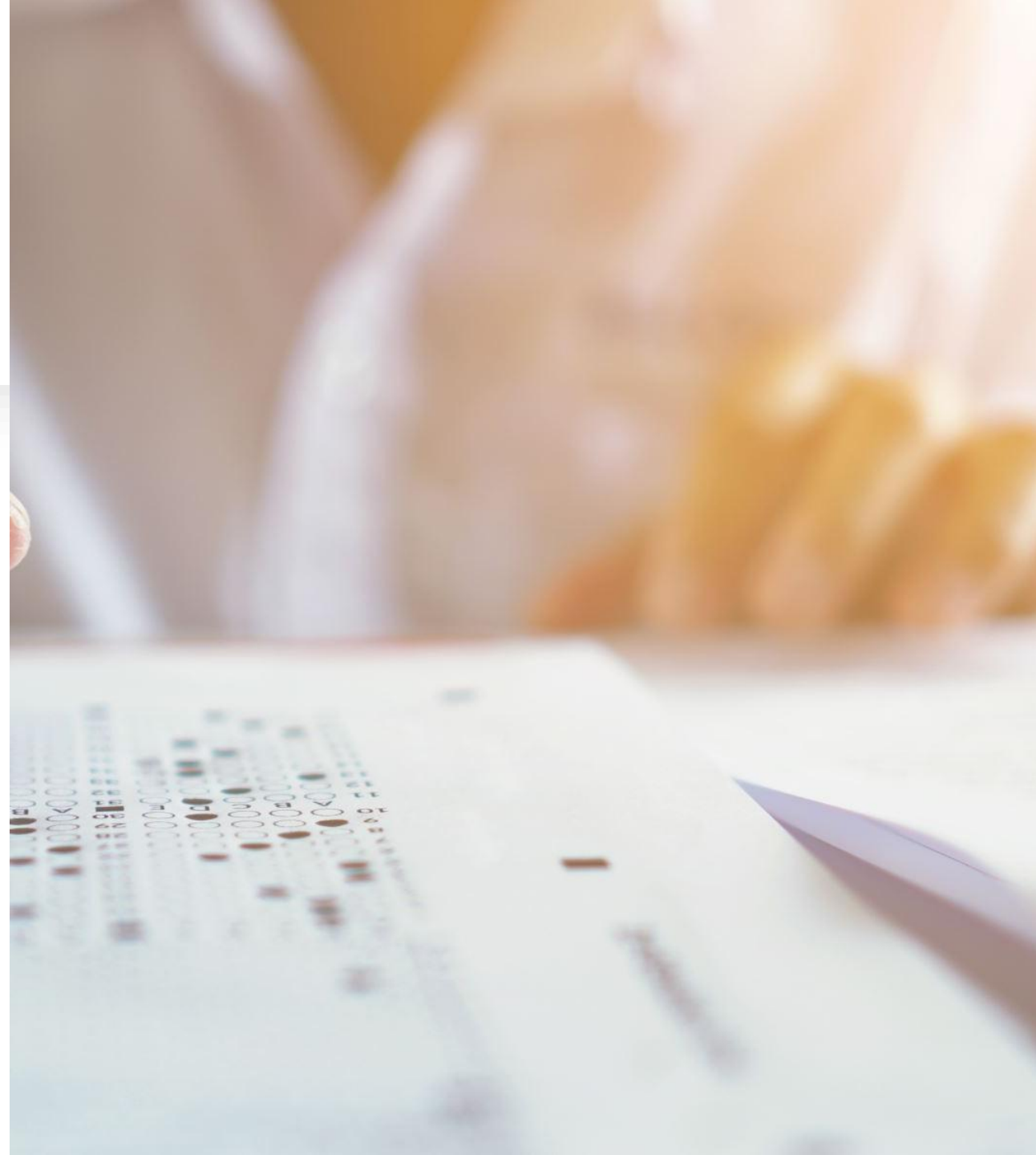
- Go Out

Simple Flowchart

- DECISION: Do I have homework due? If yes, complete homework.

- DECISION: Are parents home? If no, call parents.

- Ask permission

- DECISION: Did they say yes? If no, stay home

- Go Out
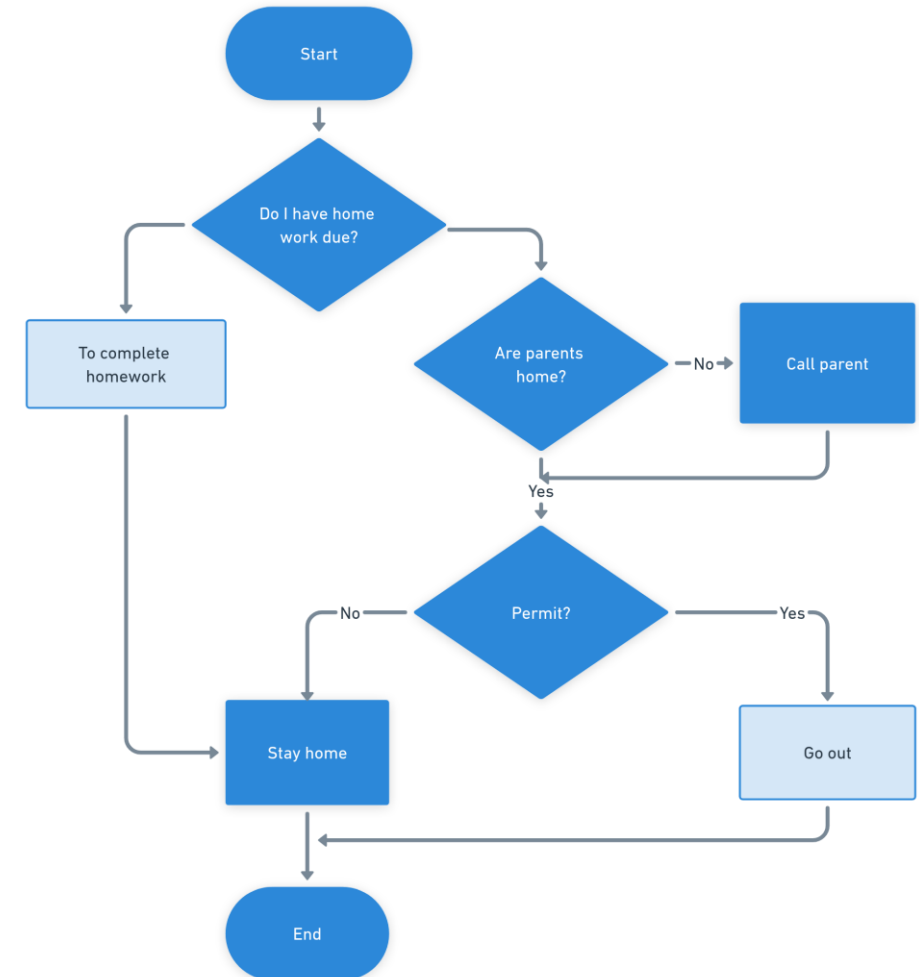
Pick a Project

- Family Movie/Game Collection

- Personal Expense Tracker

- Recipe Collection & Meal Planner

- Study Planner & Time Tracker

- Weather Station Data Logger