

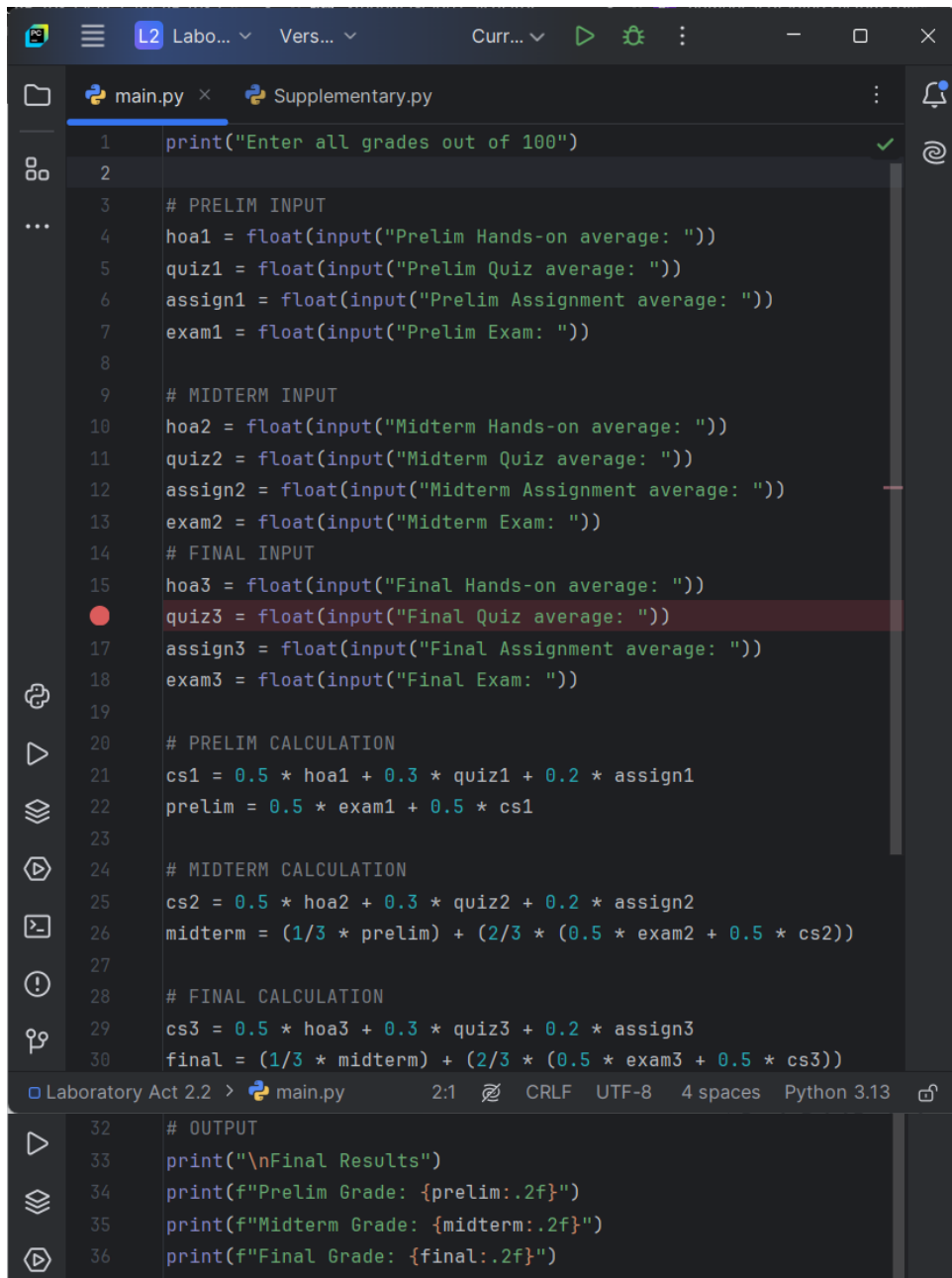
1. Objective/s:
  1. Implement literals and variables in a python program.
2. ILO/s: at the end of this activity, students should be able to:
  1. Write a simple program implementing literals and variables.
  2. Use comments and identify keywords from identifiers created by users.
3. Discussion:
  1. Discuss the use of variables, constants and literals in a python program.
4. Tasks:
  1. A teacher wants to calculate the final grade in a CpE course and want to write it in a python program. The following are the requirements:
    1. PRELIM GRADE = 50% Prelim Exam + 50% Prelim Class Standing (CS)
    2. PRELIM CS = 50% Hands-on activity + 30% Quiz + 20% Assignment
    3. MIDTERM GRADE = 1/3 of PRELIM GRADE + 2/3 of (50% Midterm Exam + 50% Midterm Class Standing (CS))
    4. MIDTERM CS = 50% Hands-on activity + 30% Quiz + 20% Assignment
    5. FINAL GRADE = 1/3 of MIDTERM GRADE + 2/3 of (50% Final Exam + 50% Final Class Standing (CS))
    6. FINAL CS = 50% Hands-on activity + 30% Quiz + 20% Assignment
    7. HOAs, Quizzes and Assignments are inputted as average of all submissions and are out of 100%.
    8. Major exams are inputted out of 100%.
    9. Show the codes that successfully run the program.
    10. Provide comments or documentation strings for your program.
5. Supplementary Activity:
  1. Test 3 students from the program you created.
  2. The program should show the name of the student, the PRELIM, MIDTERM and FINAL grades.
  3. Convert the final grade into the UCCs numerical grade. Please refer to the grading system.
6. Document your lab activity properly using Markdown codes.
7. Answer all the supplementary activities (programs and questions).
8. Write your conclusion.
9. Convert your notebook into a PDF file and submit the PDF to the link.

Note: Submission beyond the due date with no valid excuse letter / valid reason will not be accepted.

## DISCUSSIONS:

In Python, **variables** are used to store data that can change or be modified during the execution of the program, allowing flexibility, while **constants** are values that are meant to remain unchanged throughout the program, typically written in all capital letters to indicate their fixed nature, and **literals** are the actual values (such as numbers, strings, or booleans) directly written in the code that represent fixed data.

## TASKS:



```
1 print("Enter all grades out of 100")
2
3 # PRELIM INPUT
4 hoa1 = float(input("Prelim Hands-on average: "))
5 quiz1 = float(input("Prelim Quiz average: "))
6 assign1 = float(input("Prelim Assignment average: "))
7 exam1 = float(input("Prelim Exam: "))
8
9 # MIDTERM INPUT
10 hoa2 = float(input("Midterm Hands-on average: "))
11 quiz2 = float(input("Midterm Quiz average: "))
12 assign2 = float(input("Midterm Assignment average: "))
13 exam2 = float(input("Midterm Exam: "))
14 # FINAL INPUT
15 hoa3 = float(input("Final Hands-on average: "))
16 quiz3 = float(input("Final Quiz average: "))
17 assign3 = float(input("Final Assignment average: "))
18 exam3 = float(input("Final Exam: "))
19
20 # PRELIM CALCULATION
21 cs1 = 0.5 * hoa1 + 0.3 * quiz1 + 0.2 * assign1
22 prelim = 0.5 * exam1 + 0.5 * cs1
23
24 # MIDTERM CALCULATION
25 cs2 = 0.5 * hoa2 + 0.3 * quiz2 + 0.2 * assign2
26 midterm = (1/3 * prelim) + (2/3 * (0.5 * exam2 + 0.5 * cs2))
27
28 # FINAL CALCULATION
29 cs3 = 0.5 * hoa3 + 0.3 * quiz3 + 0.2 * assign3
30 final = (1/3 * midterm) + (2/3 * (0.5 * exam3 + 0.5 * cs3))
31
32 # OUTPUT
33 print("\nFinal Results")
34 print(f"Prelim Grade: {prelim:.2f}")
35 print(f"Midterm Grade: {midterm:.2f}")
36 print(f"Final Grade: {final:.2f}")
```

## SUPPLEMENTARY ACTIVITY:

```
1 # Student Name Input
2 name = input("Enter student name: ")
3 print("\nEnter all grades out of 100")
4
5 # PRELIM INPUT
6 hoa1 = float(input("Prelim Hands-on average: "))
7 quiz1 = float(input("Prelim Quiz average: "))
8 assign1 = float(input("Prelim Assignment average: "))
9 exam1 = float(input("Prelim Exam: "))
10
11 # MIDTERM INPUT
12 hoa2 = float(input("Midterm Hands-on average: "))
13 quiz2 = float(input("Midterm Quiz average: "))
14 assign2 = float(input("Midterm Assignment average: "))
15 exam2 = float(input("Midterm Exam: "))
16
17 # FINAL INPUT
18 hoa3 = float(input("Final Hands-on average: "))
19 quiz3 = float(input("Final Quiz average: "))
20 assign3 = float(input("Final Assignment average: "))
21 exam3 = float(input("Final Exam: "))
22
23 # PRELIM CALCULATION
24 cs1 = 0.5 * hoa1 + 0.3 * quiz1 + 0.2 * assign1
25 prelim = 0.5 * exam1 + 0.5 * cs1
26
27 # MIDTERM CALCULATION
28 cs2 = 0.5 * hoa2 + 0.3 * quiz2 + 0.2 * assign2
29 midterm = (1/3 * prelim) + (2/3 * (0.5 * exam2 + 0.5 * cs2))
30
```

```
31 # FINAL CALCULATION
32 cs3 = 0.5 * hoa3 + 0.3 * quiz3 + 0.2 * assign3
33 final = (1/3 * midterm) + (2/3 * (0.5 * exam3 + 0.5 * cs3))
34
35 # CONVERT TO UCC NUMERICAL GRADE
36 def convert_to_ucc_grade(grade): 1 usage
37     if grade >= 96:
38         return 1.00
39     elif grade >= 94:
40         return 1.25
41     elif grade >= 91:
42         return 1.50
43     elif grade >= 88:
44         return 1.75
45     elif grade >= 85:
46         return 2.00
47     elif grade >= 83:
48         return 2.25
49     elif grade >= 80:
50         return 2.50
51     elif grade >= 78:
52         return 2.75
53     elif grade >= 75:
54         return 3.00
55     else:
56         return 5.00
57
58 ucc_grade = convert_to_ucc_grade(final)
59
60 # OUTPUT
```

```
60 # OUTPUT
61 print("\nFinal Results")
62 print(f"Student Name: {name}")
63 print(f"Prelim Grade: {prelim:.2f}")
64 print(f"Midterm Grade: {midterm:.2f}")
65 print(f"Final Grade: {final:.2f}")
66 print(f"UCC Numerical Grade: {ucc_grade:.2f}")
```

## CONCLUSION

This program helps compute a student's grades step by step from Prelim to Final by using the given scores in hands-on tasks, quizzes, assignments, and exams. It also converts the final grade into UCC's numerical grading system, making it easier to know if the student passed or failed.

By using this program, teachers can save time and avoid mistakes when calculating grades. It shows how useful programming can be in helping with school tasks like grading.