# University of Caloocan City
## Computer Engineering Department
## Bagong Silang Campus

**Course: CPE 103**                                      **Program: BSCpE**

**Course Title**: Object Oriented Programming          **Date Performed:** 02-01-2025

**Section**: BSCpE - 1A                                  **Date Submitted:** 02-01-2025

**Student Name**: Acebedo, Sebastian C.                 **Instructor's Name:** Engr. Sayo


**Objective/s of the activity:**

1. This activity helps the student to enhance the knowledge of using literals and variables which is fundamental to any variety of programming such as python programming.

**Intended Learning Outcome:**

1. Write a simple program implementing literals and variables.

2. Use comments and identify keywords from identifiers created by users.

**Discussion:**

- Python Programming used variables, constants, and literals to manipulate and store the code. Variables let you assign a name and assign a value to it. In simple terms, It allows to store and manipulate the given code. On the other hand, Constants are like variables but its value do not change once it assigned. Lastly, Literals. literals are the the values that unexchangeable. this values represent the data such as name, numbers or special values like pi.

**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:

2. PRELIM GRADE = 50% Prelim Exam + 50% Prelim Class Standing (CS)

3. PRELIM CS = 50% Hands-on activity + 30% Quiz + 20% Assignment

4. MIDTERM GRADE = 1/3 of PRELIM GRADE + 2/3 of (50% Midterm Exam + 50% Midterm Class Standing (CS))

5. MIDTERM CS = 50% Hands-on activity + 30% Quiz + 20% Assignment

6. FINAL GRADE = 1/3 of MIDTERM GRADE + 2/3 of (50% Final Exam + 50% Final Class Standing (CS))

7. FINAL CS = 50% Hands-on activity + 30% Quiz + 20% Assignment

8. HOAs, Quizzes and Assignments are inputted as average of all submissions and are out of 100%.

9. Major exams are inputted out of 100%.

10. Show the codes that successfully run the program.

11. Provide comments or documentation strings for your program.

**Materials and Equipment:**

1. Desktop Computer with Python Google Colab

2. Windows Operating System

**Procedure:**

1. **LOOP 3 STUDENT**

- To loop the asssigned code

2. **STUDENT DETAILS**

- prompt the user to enter the student's name

3. **PRELIM**

- Prompt the user to enter grades for the Prelim Exam (PEX), Hands-on Activity (PHOA), Prelim Quiz (PQUIZ), and Prelim Assignment (PAS).

4. **CALCULATE PRELIM**

- Calculate the Prelim Class Standing (PCS) using the formula: PCS = PROA * 0.5 + POUIZ * 0.3 + PAS * 0.2.

- Calculate the Prelim Grade (PG) using the formula: PG = PEX * 0.5 + PCS * 0.5.

5. **MIDTERM**

- Prompt the user to enter grades for the Midterm Exam (MEX), Hands-on Activity (MHOA), Midterm Quiz (MQUIZ), and Midterm Assignment (MAS).

6. **CALCULATE MIDTERM**

- Calculate the Midterm Class Standing (MCS) using the formula: MCS = MHOA * 0.5 + MQUIZ * 0.3 + MAS * 0.2.

- Calculate the Midterm Grade (MG) using the formula: MG = PG * 1/3 + 2/3 * (0.5 * MEX + 0.5 * MCS).

## 7. FINAL GRADE

- Prompt the user to enter grades for the Final Exam (FEX), Hands-on Activity (FHOA), Final Quiz (FQUIZ), and Final Assignment (FAS).

## 8. CALCULATE FINAL GRADE

- Calculate the Final Class Standing (FCS) using the formula: FCS = FHOA * 0.5 + FOUIZ * 0.3 + FAS * 0.2.

- Calculate the Final Grade (FG) using the formula: FG = MG * 1/3 + 2/3 * (0.5 * FEX + 0.5 * FCS).

## 9. CONVERSION TO UCC NUMBER SYSTEM GRADE

- Define a function number_System(grade) that converts the numerical grade to the UCC number system grade based on the provided ranges.

## 10. CALCULATE GWA/GPA

- Print the student's name and their Prelim, Midterm, and Final Grades.

## 11. FOR SPACING

- Print an empty line to create spacing in the output for better readability.

```python
#TO LOOP 3 STUDENT
for i in range(3):
  #STUDENT DETAILS
  student_name = input("Enter student name: ")
  print ()

  #PRELIM
  PEX = float(input("Enter Prelim Exam grade: "))
  PHOA = float(input("Enter Hands-on Activity grade: "))
  PQUIZ = float(input("Enter Prelim Quiz grade: "))
  PAS = float(input("Enter Prelim Assignment grade: "))
  print () #FOR SPACING

  #CALCULATE PRELIM
  PCS = PHOA*.5 + PQUIZ*.3 + PAS*.2
  PG = PEX*.5 + PCS*.5

  #MIDTERM
  MEX = float(input("Enter Midterm Exam grade: "))
  MHOA = float(input("Enter Hands-on Activity grade: "))
  MQUIZ = float(input("Enter Midterm Quiz grade: "))
  MAS = float(input("Enter Midterm Assignment grade: "))
  print () #FOR SPACING

  #CALCULATE MIDTERM
  MCS = MHOA*.5 + MQUIZ*.3 + MAS*.2
  MG = PG* 1/3 + 2/3* ((0.5* MEX + 0.5* MCS))
```

```python
# FINAL GRADE
FEX = float(input("Enter Final Exam grade: "))
FHOA = float(input("Enter Hands-on Activity grade: "))
FQUIZ = float(input("Enter Final Quiz grade: "))
FAS = float(input("Enter Final Assignment grade: "))
print () # FOR SPACING

#CALCULATE FINAL GRADE
FCS = FHOA*.5 + FQUIZ*.3 + FAS*.2
FG = MG* 1/3 + 2/3* ((0.5* FEX + 0.5* FCS))

#CALCULATE GWA/GPA
print("Student Name: ", student_name)
print("Prelim Grade: ", "%.2f" % PG)

#CONVERSION TO UCC NUMBER SYSTEM GRADE
def number_system(grade):
  if 99 <= grade <= 100:
    return 1.00
  elif 96 <= grade <= 98:
    return 1.25
  elif 93 <= grade <= 95:
    return 1.50
  elif 90 <= grade <= 92:
    return 1.75
  elif 87 <= grade <= 89:
    return 2.00
  elif 84 <= grade <= 86:
    return 2.25
  elif 81 <= grade <= 83:
    return 2.50
  elif 78 <= grade <= 80:
    return 2.75
  elif 75 <= grade <= 77:
    return 3.00
  else:
    return 5.00

print("UCC Number System Grade: ", "%.2f" % number_system(FG))
print () # FOR SPACING
```

```
Enter student name: Sebastian

Enter Prelim Exam grade: 90
Enter Hands-on Activity grade: 91
Enter Prelim Quiz grade: 92
Enter Prelim Assignment grade: 93

Enter Midterm Exam grade: 94
Enter Hands-on Activity grade: 88
Enter Midterm Quiz grade: 90
Enter Midterm Assignment grade: 99

Enter Final Exam grade: 99
Enter Hands-on Activity grade: 92
Enter Final Quiz grade: 91
Enter Final Assignment grade: 92

Student Name:   Sebastian
Prelim Grade:   90.85
Midterm Grade:   91.88
Final Grade:   94.19
UCC Number System Grade:   1.50


Enter student name: Kevin

Enter Prelim Exam grade: 96
Enter Hands-on Activity grade: 95
Enter Prelim Quiz grade: 94
Enter Prelim Assignment grade: 91

Enter Midterm Exam grade: 92
Enter Hands-on Activity grade: 89
Enter Midterm Quiz grade: 89
Enter Midterm Assignment grade: 99

Enter Final Exam grade: 89
Enter Hands-on Activity grade: 90
Enter Final Quiz grade: 92
Enter Final Assignment grade: 91

Student Name:   Kevin
Prelim Grade:   94.95
Midterm Grade:   92.65
Final Grade:   90.82
UCC Number System Grade:   1.75
```

```
Enter student name: Ken

Enter Prelim Exam grade: 91
Enter Hands-on Activity grade: 90
Enter Prelim Quiz grade: 87
Enter Prelim Assignment grade: 86

Enter Midterm Exam grade: 98
Enter Hands-on Activity grade: 92
Enter Midterm Quiz grade: 90
Enter Midterm Assignment grade: 91

Enter Final Exam grade: 92
Enter Hands-on Activity grade: 90
Enter Final Quiz grade: 89
Enter Final Assignment grade: 92

Student Name:   Ken
Prelim Grade:   89.65
Midterm Grade:  92.95
Final Grade:  91.68
UCC Number System Grade:  1.75
```

**Questions**: (write your answers in blue font color and questions in black)

1. How can looping be used to input grades for multiple students?

- Use a loop to repeatedly ask for student names and grades until the user stops. For each student, calculate their Prelim, Midterm, and Final Grades using the given formulas, then store and display the results.

2. What is the purpose of the number_System(grade) function, and what does it return for a grade of 94?

- The number_System(grade) converts a numerical grade into the UCC (University Grading System) number system. For a grade of 94, the function would return 1.50, as 93–95 corresponds to a UCC grade of 1.50.

**Conclusion**:

In this activity, we learned about literals, variables, and constants of Python programming. These are important because they aid in storing and working with data in our programs. We practiced writing a simple program to compute a student's final grade depending on their Prelim, Midterm, and Final grades. The program will use formulas for

combining exam scores, quizzes, assignments, and hands-on activities. We made the code easier to understand by including comments. In this activity, we saw how Python could be used for real-life problems, such as grade calculations.