University of Caloocan City
Computer Engineering Department
Bagong Silang Campus

Activity No. 2 and Title:

Course: CPE 103	Program: BSCpE
Course Title: Object Oriented Programming	**Date Performed: 01-02-2025**
Section: 1A	**Date Submitted: 01-02-2025**
Student Name: Ruperto, April Anne A.	**Instructor's Name: Maria Rizette H. Sayo**

Objective/s of the activity:

1. Implement literals and variables in a python program.

Intended Learning Outcome:

1. Write a simple program implementing literals and variables.
2. Use comments and identify keywords from identifiers created by users.

Discussion:

Discuss the use of variables, constants and literals in a python program.

Materials and Equipment:

1. Desktop Computer with Python Colab
2. Windows Operating System

Procedure:

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.

Output of the Procedures

```
class student():
  def __init__(self, name, section):
    self.name = name
    self.section = section

#Calculates Class Standing (CS)
  def compute_class_standing (self,hands_on, quiz, assignment):
    return (hands_on * 0.50) + (quiz * 0.30) + (assignment * 0.20)

#Calculates Prelim Grade
  def compute_prelim_grade (self,prelim_exam, hands_on, quiz, assignment):
    prelim_cs = self.compute_class_standing(hands_on, quiz, assignment)
    return (prelim_exam * 0.50) + (prelim_cs * 0.50)

#Calculates Midterm Grade
  def compute_midterm_grade (self,prelim_grade, midterm_exam, hands_on, quiz, assignment):
    midterm_cs = self.compute_class_standing(hands_on, quiz, assignment)
    midterm_avg = (midterm_exam * 0.50) + (midterm_cs * 0.50)
    return (prelim_grade * 1/3) + (midterm_avg * 2/3)

#Calculates Final Grade
  def compute_final_grade (self,midterm_grade, final_exam, hands_on, quiz, assignment):
    final_cs = self.compute_class_standing(hands_on, quiz, assignment)
    final_avg = (final_exam * 0.50) + (final_cs * 0.50)
    return (midterm_grade * 1/3) + (final_avg * 2/3)
```

```
  def grades_input(self):
    self.prelim_exam = float(input("Enter Prelim Exam Score: "))
    self.prelim_hands_on = float(input("Enter Prelim Hands-on Score: "))
    self.prelim_quiz = float(input("Enter Prelim Quiz Score: "))
    self.prelim_assignment = float(input("Enter Prelim Assignment Score: "))
    self.midterm_exam = float(input("\nEnter Midterm Exam Score: "))
    self.midterm_hands_on = float(input("Enter Midterm Hands-on Score: "))
    self.midterm_quiz = float(input("Enter Midterm Quiz Score: "))
    self.midterm_assignment = float(input("Enter Midterm Assignment Score: "))
    self.final_exam = float(input("\nEnter Final Exam Score: "))
    self.final_hands_on = float(input("Enter Final Hands-on Score: "))
    self.final_quiz = float(input("Enter Final Quiz Score: "))
    self.final_assignment = float(input("Enter Final Assignment Score: "))
    self.prelim_grade = self.compute_prelim_grade(self.prelim_exam, self.prelim_hands_on, self.prelim_quiz, self.prelim_assignment)
    self.midterm_grade = self.compute_midterm_grade(self.prelim_grade, self.midterm_exam, self.midterm_hands_on, self.midterm_quiz, self.
    self.final_grade = self.compute_final_grade(self.midterm_grade, self.final_exam, self.final_hands_on, self.final_quiz, self.final_ass

#Display
  def print_grades(self):
    print("\nRESULTS")
    print(f"Prelim Grade: {self.prelim_grade:.2f}")
    print(f"Midterm Grade: {self.midterm_grade:.2f}")
    print(f"Final Grade: {self.final_grade:.2f}")

class CPE_A(student):
  pass

class CPE_B(student):
  pass

#Taking User Input
name = input ("ENTER YOUR NAME: ")
section = input ("ENTER YOUR SECTION: ")
cpe_a = CPE_A (name, section)
cpe_a.grades_input()
cpe_a.print_grades()
```

Show hidden output

Output of the 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.

```
class student():
  def __init__(self, name, section):
    self.name = name
    self.section = section

#Calculates Class Standing (CS)
  def compute_class_standing (self,hands_on, quiz, assignment):
    return (hands_on * 0.50) + (quiz * 0.30) + (assignment * 0.20)

#Calculates Prelim Grade
  def compute_prelim_grade (self,prelim_exam, hands_on, quiz, assignment):
    prelim_cs = self.compute_class_standing(hands_on, quiz, assignment)
    return (prelim_exam * 0.50) + (prelim_cs * 0.50)

#Calculates Midterm Grade
  def compute_midterm_grade (self,prelim_grade, midterm_exam, hands_on, quiz, assignment):
    midterm_cs = self.compute_class_standing(hands_on, quiz, assignment)
    midterm_avg = (midterm_exam * 0.50) + (midterm_cs * 0.50)
    return (prelim_grade * 1/3) + (midterm_avg * 2/3)

#Calculates Final Grade
  def compute_final_grade (self,midterm_grade, final_exam, hands_on, quiz, assignment):
    final_cs = self.compute_class_standing(hands_on, quiz, assignment)
    final_avg = (final_exam * 0.50) + (final_cs * 0.50)
    return (midterm_grade * 1/3) + (final_avg * 2/3)

  def grades_input(self):
    self.prelim_exam = float(input("Enter Prelim Exam Score: "))
    self.prelim_hands_on = float(input("Enter Prelim Hands-on Score: "))
    self.prelim_quiz = float(input("Enter Prelim Quiz Score: "))
    self.prelim_assignment = float(input("Enter Prelim Assignment Score: "))
    self.midterm_exam = float(input("\nEnter Midterm Exam Score: "))
    self.midterm_hands_on = float(input("Enter Midterm Hands-on Score: "))
    self.midterm_quiz = float(input("Enter Midterm Quiz Score: "))
```

```
        self.midterm_assignment = float(input("Enter Midterm Assignment Score: "))
        self.final_exam = float(input("\nEnter Final Exam Score: "))
        self.final_hands_on = float(input("Enter Final Hands-on Score: "))
        self.final_quiz = float(input("Enter Final Quiz Score: "))
        self.final_assignment = float(input("Enter Final Assignment Score: "))
        self.prelim_grade = self.compute_prelim_grade(self.prelim_exam, self.prelim_hands_on, self.prelim_quiz, self.prelim_assignment)
        self.midterm_grade = self.compute_midterm_grade(self.prelim_grade, self.midterm_exam, self.midterm_hands_on, self.midterm_quiz, self
        self.final_grade = self.compute_final_grade(self.midterm_grade, self.final_exam, self.final_hands_on, self.final_quiz, self.final_as

    #Display the Prelim, Midterm, Final
      def print_grades(self):
        print("\nRESULTS")
        print(f"Prelim Grade: {self.prelim_grade:.2f}")
        print(f"Midterm Grade: {self.midterm_grade:.2f}")
        print(f"Final Grade: {self.final_grade:.2f}")

    #Converted into UCC numerical grade
      def convert_grade (self):
        if 99 <= self.final_grade <= 100:
          print(f"Your grade is 1.00")
        elif 96 <= self.final_grade <= 98:
          print(f"Your grade is 1.25")
        elif 93 <= self.final_grade <= 95:
          print(f"Your grade is 1.50")
        elif 90 <= self.final_grade <= 92:
          print(f"Your grade is 1.75")
        elif 87 <= self.final_grade <= 89:
          print(f"Your grade is 2.00")
        elif 84 <= self.final_grade <= 86:
          print(f"Your grade is 2.25")
        elif 81 <= self.final_grade <= 83:
          print(f"Your grade is 2.50")
        elif 78 <= self.final_grade <= 80:
          print(f"Your grade is 2.75")
        elif 75 <= self.final_grade <= 77:
          print(f"Your grade is 3.00")
        elif 72 <= self.final_grade <=74:
          print(f"Your grade is 4.00")
        elif self.final_grade <= 71:
          print(f"Your grade is 5.00")

    class One(student):
      pass

    class Two(student):
      pass

    class Three(student):
      pass

    #Taking User Input A
    name = input("ENTER YOUR NAME: ")
    section = input ("ENTER YOUR SECTION: ")
    one = One (name, section)
    one.grades_input()
    one.print_grades()
    one.convert_grade()

    #Taking User Input B
    name = input("\nENTER YOUR NAME: ")
    section = input ("ENTER YOUR SECTION: ")
    two = Two (name, section)
    two.grades_input()
    two.print_grades()
    two.convert_grade()

    #Taking User Input C
    name = input("\nENTER YOUR NAME: ")
    section = input ("ENTER YOUR SECTION: ")
    three = Three (name, section)
    three.grades_input()
    three.print_grades()
    three.convert_grade()
```

```
ENTER YOUR NAME: Theo
ENTER YOUR SECTION: 1A
Enter Prelim Exam Score: 89
Enter Prelim Hands-on Score: 89
Enter Prelim Quiz Score: 97
Enter Prelim Assignment Score: 86

Enter Midterm Exam Score: 89
Enter Midterm Hands-on Score: 90
```

```
Enter Midterm Quiz Score: 89
Enter Midterm Assignment Score: 99

Enter Final Exam Score: 88
Enter Final Hands-on Score: 90
Enter Final Quiz Score: 80
Enter Final Assignment Score: 80

RESULTS
Prelim Grade: 89.90
Midterm Grade: 90.13
Final Grade: 87.71
Your grade is 2.00

ENTER YOUR NAME: Piggy
ENTER YOUR SECTION: 1B
Enter Prelim Exam Score: 90
Enter Prelim Hands-on Score: 98
Enter Prelim Quiz Score: 89
Enter Prelim Assignment Score: 78

Enter Midterm Exam Score: 89
Enter Midterm Hands-on Score: 90
Enter Midterm Quiz Score: 98
Enter Midterm Assignment Score: 96

Enter Final Exam Score: 96
Enter Final Hands-on Score: 97
Enter Final Quiz Score: 95
Enter Final Assignment Score: 99

RESULTS
Prelim Grade: 90.65
Midterm Grade: 91.08
Final Grade: 94.63
Your grade is 1.50

ENTER YOUR NAME: Ferdi
ENTER YOUR SECTION: 1A
Enter Prelim Exam Score: 87
Enter Prelim Hands-on Score: 80
Enter Prelim Quiz Score: 98
Enter Prelim Assignment Score: 93

Enter Midterm Exam Score: 92
Enter Midterm Hands-on Score: 90
Enter Midterm Quiz Score: 91
Enter Midterm Assignment Score: 89
```

Conclusion

> This Python program, will calculate and transform the evaluation marks of students. You will input the scores of the Prelims, Midterms, and Final exams and it will calculate the overall grades and convert them into a numeric grade system. The score of each student is a function of his or her status in the class, performance in exams, and weighted averages. The software is made in such a way that the teacher can input the student individually and can handle the grade calculations and grading conversions on a per-student basis in a simple and effective way.