
University of Caloocan City
Computer Engineering Department
Bagong Silang Campus

Activity No. 2.2 and Title: Literals, Operators, and Variables-Supplementary Activity

Course: CPE 103

Program: BSCpE

Course Title: Object Oriented Programming

Date Performed: 2-1-2025

Section: BSCpE - 1A

Date Submitted:

Student Name: Monoy, Justin Rhey A.

Instructor's Name: Engr. Maria Rizette H. Sayo

Objective/s of the activity:

1. Implement literals and variables in a python program.
2. List item

Intended Learning Outcome:

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

Discussion:

(put your discussions here)

Materials and Equipment:

1. Python programming language
2. Windows 10 above
3. Desktop
4. Internet
5. Computer peripherals

Procedure:

1. Create a Python program to calculate student grades based on Prelim, Midterm, and Final exams, including Class Standing and activities. Key Concepts:

Variables store data (grades). Constants hold fixed values (percentages for weights). Literals are values used directly in the code (e.g., 50, 0.50).

2. Get inputs: exam scores and class standing for Prelim, Midterm, and Final. Calculate Prelim, Midterm, and Final grades using the formulas provided. Output the grades and the final numerical grade based on UCC grading system.

```

# Functions used to calculate data
def calculate_prelim_grade(prelim_exam, prelim_cs):
    return(0.50 * prelim_exam + 0.50 * prelim_cs)

def calculate_prelim_cs(hands_on_activity,quiz,assignment):
    return(0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment)

def calculate_midterm_grade(prelim_grade, midterm_exam, midterm_cs ):
    midterm_exam_cs = (0.50 * midterm_exam) + (0.50 * midterm_cs)
    return (1/3 * prelim_grade) + (2/3 * midterm_exam_cs)

def calculate_midterm_cs(hands_on_activity,quiz,assignment):
    return(0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment)

def calculate_final_grade(final_cs, midterm_grade, final_exam):
    final_exam_cs = (0.50 * final_exam) + (0.50 * final_cs)

    return (1/3 * midterm_grade) + (2/3 * final_exam_cs)

def calculate_final_cs(hands_on_activity,quiz,assignment):

    return(0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment)

def calculate_numerical_grade(prelim_grade):

    if 99 <= prelim_grade <= 100:
        return 1.00 # Excellent
    elif 96 <= prelim_grade <= 98:
        return 1.25 # Very Good
    elif 93 <= prelim_grade <= 95:
        return 1.50 # Good
    elif 90 <= prelim_grade <= 92:
        return 1.75 # Satisfactory
    elif 87 <= prelim_grade <= 89:
        return 2.00 # Passing
    elif 84 <= prelim_grade <= 86:
        return 2.25 # Fair
    elif 81 <= prelim_grade <= 83:
        return 2.50 # Conditional
    elif 78 <= prelim_grade <= 80:
        return 2.75 # Needs Improvement
    elif 75 <= prelim_grade <= 77:
        return 3.00 # Unsatisfactory
    elif 72 <= prelim_grade <= 74:
        return 4.00 # Needs Improvement
    else:
        return 5.00 # Failing

def calculate_numerical_grade(midterm_grade):

```

```
if 99 <= midterm_grade <= 100:
    return 1.00 # Excellent
elif 96 <= midterm_grade <= 98:
    return 1.25 # Very Good
elif 93 <= midterm_grade <= 95:
    return 1.50 # Good
elif 90 <= midterm_grade <= 92:
    return 1.75 # Satisfactory
elif 87 <= midterm_grade <= 89:
    return 2.00 # Passing
elif 84 <= midterm_grade <= 86:
    return 2.25 # Fair
elif 81 <= midterm_grade <= 83:
    return 2.50 # Conditional
elif 78 <= midterm_grade <= 80:
    return 2.75 # Needs Improvement
elif 75 <= midterm_grade <= 77:
    return 3.00 # Unsatisfactory
elif 72 <= midterm_grade <= 74:
    return 4.00 # Needs Improvement
else:
    return 5.00 # Failing
```

```
def calculate_numerical_grade(final_grade):
```

```
    if 99 <= final_grade <= 100:
        return 1.00 # Excellent
    elif 96 <= final_grade <= 98:
        return 1.25 # Very Good
    elif 93 <= final_grade <= 95:
        return 1.50 # Good
    elif 90 <= final_grade <= 92:
        return 1.75 # Satisfactory
    elif 87 <= final_grade <= 89:
        return 2.00 # Passing
    elif 84 <= final_grade <= 86:
        return 2.25 # Fair
    elif 81 <= final_grade <= 83:
        return 2.50 # Conditional
    elif 78 <= final_grade <= 80:
        return 2.75 # Needs Improvement
    elif 75 <= final_grade <= 77:
        return 3.00 # Unsatisfactory
    elif 72 <= final_grade <= 74:
        return 4.00 # Needs Improvement
    else:
        return 5.00 # Failing
```

```
# Input data
```

```
name = input("Enter your name (Last name, First name Middle): ")
section = input("Enter your section: ")
```

```

#Prelim
assignment = float(input("Enter Assignment Grade in Average (0-100): "))
hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
quiz = float(input("Enter Quiz Grade in Average (0-100): "))
prelim_exam = float(input("Enter Prelim Exam in Average (0-100): "))
#Midterm
assignment = float(input("Enter Assignment Grade in Average (0-100): "))
hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
quiz = float(input("Enter Quiz Grade in Average (0-100): "))
midterm_exam = float(input("Enter Midterm Exam in Average (0-100): "))
#Final
assignment = float(input("Enter Assignment Grade in Average (0-100): "))
hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
quiz = float(input("Enter Quiz Grade in Average (0-100): "))
final_exam = float(input("Enter Final Exam in Average (0-100): "))

# Grade calculations
#prelim
prelim_cs = calculate_prelim_cs(hands_on_activity, quiz, assignment)
prelim_grade = calculate_prelim_grade(prelim_exam, prelim_cs)
prelim_numerical_grade = calculate_numerical_grade(prelim_grade)
#midterm
midterm_cs = calculate_midterm_cs(hands_on_activity, quiz, assignment)
midterm_grade = calculate_midterm_grade(prelim_grade, midterm_exam, midterm_cs)
midterm_numerical_grade = calculate_numerical_grade(midterm_grade)
#final
final_cs = calculate_final_cs(hands_on_activity, quiz, assignment)
final_grade = calculate_final_grade(final_cs, midterm_grade, final_exam)
final_numerical_grade = calculate_numerical_grade(final_grade)

# Output
print("Name: ", name)
print("Section: ", section)
print("\nPrelim Grade: ", prelim_grade)
print("Prelim Numerical Grade: ", midterm_numerical_grade)
print("\nMidterm Grade: ", midterm_grade)
print("Midterm Numerical Grade: ", midterm_numerical_grade)
print("\nFinal Grade: ", final_grade)
print("Final Numerical Grade: ", final_numerical_grade)

```

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.

```
def calculate_prelim_grade(prelim_exam, prelim_cs):
    """
    Calculates the Prelim Grade by combining Prelim Exam and Prelim Class Standing (CS).
    - 50% Prelim Exam
    - 50% Prelim Class Standing (CS)

    Args:
        prelim_exam (float): The score for the Prelim Exam (out of 100).
        prelim_cs (float): The Prelim Class Standing score.

    Returns:
        float: The calculated Prelim Grade.
    """
    return 0.50 * prelim_exam + 0.50 * prelim_cs


def calculate_prelim_cs(hands_on_activity, quiz, assignment):
    """
    Calculates the Prelim Class Standing (CS) based on the given weights:
    - 50% Hands-on Activity
    - 30% Quiz
    - 20% Assignment

    Args:
        hands_on_activity (float): The average score for hands-on activity (out of 100).
        quiz (float): The average score for quizzes (out of 100).
        assignment (float): The average score for assignments (out of 100).

    Returns:
        float: The calculated Prelim Class Standing (CS).
    """
    return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment


def calculate_midterm_grade(prelim_grade, midterm_exam, midterm_cs):
    """
    Calculates the Midterm Grade by combining Prelim Grade, Midterm Exam, and Midterm Class
    - 50% Prelim Grade
    - 50% Midterm Exam and Midterm Class Standing (CS)

    Args:
        prelim_grade (float): The Prelim Grade (out of 100).
        midterm_exam (float): The Midterm Exam score (out of 100).
        midterm_cs (float): The Midterm Class Standing (CS) score (out of 100).

    Returns:
        float: The calculated Midterm Grade.
    """
    midterm_exam_cs = (0.50 * midterm_exam) + (0.50 * midterm_cs)
    return (1 / 3 * prelim_grade) + (2 / 3 * midterm_exam_cs)
```

```

def calculate_midterm_cs(hands_on_activity, quiz, assignment):
    """
    Calculates the Midterm Class Standing (CS) based on the given weights:
    - 50% Hands-on Activity
    - 30% Quiz
    - 20% Assignment

    Args:
        hands_on_activity (float): The average score for hands-on activity (out of 100).
        quiz (float): The average score for quizzes (out of 100).
        assignment (float): The average score for assignments (out of 100).

    Returns:
        float: The calculated Midterm Class Standing (CS).
    """
    return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment


def calculate_final_grade(final_cs, midterm_grade, final_exam):
    """
    Calculates the Final Grade by combining Midterm Grade, Final Exam, and Final Class Standing (CS)
    - 50% Midterm Grade
    - 50% Final Exam and Final Class Standing (CS)

    Args:
        midterm_grade (float): The Midterm Grade (out of 100).
        final_exam (float): The Final Exam score (out of 100).
        final_cs (float): The Final Class Standing (CS) score (out of 100).

    Returns:
        float: The calculated Final Grade.
    """
    final_exam_cs = (0.50 * final_exam) + (0.50 * final_cs)
    return (1 / 3 * midterm_grade) + (2 / 3 * final_exam_cs)


def calculate_final_cs(hands_on_activity, quiz, assignment):
    """
    Calculates the Final Class Standing (CS) based on the given weights:
    - 50% Hands-on Activity
    - 30% Quiz
    - 20% Assignment

    Args:
        hands_on_activity (float): The average score for hands-on activity (out of 100).
        quiz (float): The average score for quizzes (out of 100).
        assignment (float): The average score for assignments (out of 100).

    Returns:
        float: The calculated Final Class Standing (CS).
    """

```

```
"""
```

```
return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment
```

```
def calculate_numerical_grade(grade):
```

```
"""
```

```
Converts the grade (out of 100) to the University of Caloocan City's numerical grading s
based on the provided image.
```

```
- 1.00: 99-100
- 1.25: 96-98
- 1.50: 93-95
- 1.75: 90-92
- 2.00: 87-89
- 2.25: 84-86
- 2.50: 81-83
- 2.75: 78-80
- 3.00: 75-77
- 4.00: 72-74
- 5.00: Below 71
```

```
Args:
```

```
    grade (float): The grade (out of 100).
```

```
Returns:
```

```
    float: The corresponding numerical grade.
```

```
"""
```

```
if 99 <= grade <= 100:
    return 1.00 # Excellent
elif 96 <= grade <= 98:
    return 1.25 # Very Good
elif 93 <= grade <= 95:
    return 1.50 # Good
elif 90 <= grade <= 92:
    return 1.75 # Satisfactory
elif 87 <= grade <= 89:
    return 2.00 # Passing
elif 84 <= grade <= 86:
    return 2.25 # Fair
elif 81 <= grade <= 83:
    return 2.50 # Conditional
elif 78 <= grade <= 80:
    return 2.75 # Needs Improvement
elif 75 <= grade <= 77:
    return 3.00 # Unsatisfactory
elif 72 <= grade <= 74:
    return 4.00 # Needs Improvement
else:
    return 5.00 # Failing
```

```

def main():
    """Main function collects the user's inputs for scores and calculates the final grades."""

    # Collecting user's name and section
    name = input("Enter your name (Last name, First name Middle): ")
    section = input("Enter your section: ")

    # Prelim scores input
    print("\nPRELIM")
    assignment = float(input("Enter Assignment Grade in Average (0-100): "))
    hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
    quiz = float(input("Enter Quiz Grade in Average (0-100): "))
    prelim_exam = float(input("Enter Prelim Exam in Average (0-100): "))

    # Calculate Prelim Class Standing and Prelim Grade
    prelim_cs = calculate_prelim_cs(hands_on_activity, quiz, assignment)
    prelim_grade = calculate_prelim_grade(prelim_exam, prelim_cs)

    # Midterm scores input
    print("\nMIDTERM")
    assignment = float(input("Enter Assignment Grade in Average (0-100): "))
    hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
    quiz = float(input("Enter Quiz Grade in Average (0-100): "))
    midterm_exam = float(input("Enter Midterm Exam Grade in Average (0-100): "))

    # Calculate Midterm Class Standing and Midterm Grade
    midterm_cs = calculate_midterm_cs(hands_on_activity, quiz, assignment)
    midterm_grade = calculate_midterm_grade(prelim_grade, midterm_exam, midterm_cs)

    # Final scores input
    print("\nFINAL")
    assignment = float(input("Enter Assignment Grade in Average (0-100): "))
    hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
    quiz = float(input("Enter Quiz Grade in Average (0-100): "))
    final_exam = float(input("Enter Final Exam Grade in Average (0-100): "))

    # Calculate Final Class Standing and Final Grade
    final_cs = calculate_final_cs(hands_on_activity, quiz, assignment)
    final_grade = calculate_final_grade(midterm_grade, final_exam, final_cs)

    # Convert to numerical grade
    prelim_numerical_grade = calculate_numerical_grade(prelim_grade)
    midterm_numerical_grade = calculate_numerical_grade(midterm_grade)
    final_numerical_grade = calculate_numerical_grade(final_grade)

    print("\nRESULTS")

    print("Name: ", name)
    print("Section: ", section)
    print("\nPrelim Grade: ", prelim_grade)
    print("Prelim Numerical Grade: ", prelim_numerical_grade)

```



```
print("\nMidterm Grade: ", midterm_grade)
print("Midterm Numerical Grade: ", midterm_numerical_grade)
print("\nFinal Grade: ", final_grade)
print("Final Numerical Grade: ", final_numerical_grade)
```

```
main()
```



Enter your name (Last name, First name Middle): Vasig, Yuan Hessed O.
Enter your section: BSCPE - 1A

PRELIM

Enter Assignment Grade in Average (0-100): 94
Enter Hands on Activity Grade in Average (0-100): 89
Enter Quiz Grade in Average (0-100): 85
Enter Prelim Exam in Average (0-100): 80

MIDTERM

Enter Assignment Grade in Average (0-100): 95
Enter Hands on Activity Grade in Average (0-100): 84
Enter Quiz Grade in Average (0-100): 82
Enter Midterm Exam Grade in Average (0-100): 84

FINAL

Enter Assignment Grade in Average (0-100): 93
Enter Hands on Activity Grade in Average (0-100): 89
Enter Quiz Grade in Average (0-100): 84
Enter Final Exam Grade in Average (0-100): 80

RESULTS

Name: Vasig, Yuan Hessed O.
Section: BSCPE - 1A

Prelim Grade: 84.4
Prelim Numerical Grade: 2.25

Midterm Grade: 84.66666666666666
Midterm Numerical Grade: 2.25

Final Grade: 84.32222222222222
Final Numerical Grade: 2.25

```
def calculate_prelim_grade(prelim_exam, prelim_cs):
```

```
    """
```

Calculates the Prelim Grade by combining Prelim Exam and Prelim Class Standing (CS).
- 50% Prelim Exam
- 50% Prelim Class Standing (CS)

Args:

prelim_exam (float): The score for the Prelim Exam (out of 100).
prelim_cs (float): The Prelim Class Standing score.

Returns:

float: The calculated Prelim Grade.

"""

return 0.50 * prelim_exam + 0.50 * prelim_cs

```
def calculate_prelim_cs(hands_on_activity, quiz, assignment):
```

"""

Calculates the Prelim Class Standing (CS) based on the given weights:

- 50% Hands-on Activity
- 30% Quiz
- 20% Assignment

Args:

hands_on_activity (float): The average score for hands-on activity (out of 100).

quiz (float): The average score for quizzes (out of 100).

assignment (float): The average score for assignments (out of 100).

Returns:

float: The calculated Prelim Class Standing (CS).

"""

return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment

```
def calculate_midterm_grade(prelim_grade, midterm_exam, midterm_cs):
```

"""

Calculates the Midterm Grade by combining Prelim Grade, Midterm Exam, and Midterm Class

- 50% Prelim Grade
- 50% Midterm Exam and Midterm Class Standing (CS)

Args:

prelim_grade (float): The Prelim Grade (out of 100).

midterm_exam (float): The Midterm Exam score (out of 100).

midterm_cs (float): The Midterm Class Standing (CS) score (out of 100).

Returns:

float: The calculated Midterm Grade.

"""

midterm_exam_cs = (0.50 * midterm_exam) + (0.50 * midterm_cs)

return (1 / 3 * prelim_grade) + (2 / 3 * midterm_exam_cs)

```
def calculate_midterm_cs(hands_on_activity, quiz, assignment):
```

"""

Calculates the Midterm Class Standing (CS) based on the given weights:

- 50% Hands-on Activity
- 30% Quiz
- 20% Assignment

Args:

hands_on_activity (float): The average score for hands-on activity (out of 100).

quiz (float): The average score for quizzes (out of 100).
 assignment (float): The average score for assignments (out of 100).

Returns:

float: The calculated Midterm Class Standing (CS).

"""

return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment

```
def calculate_final_grade(final_cs, midterm_grade, final_exam):
```

"""

Calculates the Final Grade by combining Midterm Grade, Final Exam, and Final Class Standing (CS)

- 50% Midterm Grade
- 50% Final Exam and Final Class Standing (CS)

Args:

midterm_grade (float): The Midterm Grade (out of 100).

final_exam (float): The Final Exam score (out of 100).

final_cs (float): The Final Class Standing (CS) score (out of 100).

Returns:

float: The calculated Final Grade.

"""

final_exam_cs = (0.50 * final_exam) + (0.50 * final_cs)
 return (1 / 3 * midterm_grade) + (2 / 3 * final_exam_cs)

```
def calculate_final_cs(hands_on_activity, quiz, assignment):
```

"""

Calculates the Final Class Standing (CS) based on the given weights:

- 50% Hands-on Activity
- 30% Quiz
- 20% Assignment

Args:

hands_on_activity (float): The average score for hands-on activity (out of 100).

quiz (float): The average score for quizzes (out of 100).

assignment (float): The average score for assignments (out of 100).

Returns:

float: The calculated Final Class Standing (CS).

"""

return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment

```
def calculate_numerical_grade(grade):
```

"""

Converts the grade (out of 100) to the University of Caloocan City's numerical grading scale based on the provided image.

- 1.00: 99-100

- 1.25: 96-98
- 1.50: 93-95
- 1.75: 90-92
- 2.00: 87-89
- 2.25: 84-86
- 2.50: 81-83
- 2.75: 78-80
- 3.00: 75-77
- 4.00: 72-74
- 5.00: Below 71

Args:

grade (float): The grade (out of 100).

Returns:

float: The corresponding numerical grade.

"""

```

if 99 <= grade <= 100:
    return 1.00 # Excellent
elif 96 <= grade <= 98:
    return 1.25 # Very Good
elif 93 <= grade <= 95:
    return 1.50 # Good
elif 90 <= grade <= 92:
    return 1.75 # Satisfactory
elif 87 <= grade <= 89:
    return 2.00 # Passing
elif 84 <= grade <= 86:
    return 2.25 # Fair
elif 81 <= grade <= 83:
    return 2.50 # Conditional
elif 78 <= grade <= 80:
    return 2.75 # Needs Improvement
elif 75 <= grade <= 77:
    return 3.00 # Unsatisfactory
elif 72 <= grade <= 74:
    return 4.00 # Needs Improvement
else:
    return 5.00 # Failing

```

def main():

"""Main function collects the user's inputs for scores and calculates the final grades."""

Collecting user's name and section

name = input("Enter your name (Last name, First name Middle): ")

section = input("Enter your section: ")

Prelim scores input

print("\nPRELIM")

assignment = float(input("Enter Assignment Grade in Average (0-100): "))

```

hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
quiz = float(input("Enter Quiz Grade in Average (0-100): "))
prelim_exam = float(input("Enter Prelim Exam in Average (0-100): "))

# Calculate Prelim Class Standing and Prelim Grade
prelim_cs = calculate_prelim_cs(hands_on_activity, quiz, assignment)
prelim_grade = calculate_prelim_grade(prelim_exam, prelim_cs)

# Midterm scores input
print("\nMIDTERM")
assignment = float(input("Enter Assignment Grade in Average (0-100): "))
hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
quiz = float(input("Enter Quiz Grade in Average (0-100): "))
midterm_exam = float(input("Enter Midterm Exam Grade in Average (0-100): "))

# Calculate Midterm Class Standing and Midterm Grade
midterm_cs = calculate_midterm_cs(hands_on_activity, quiz, assignment)
midterm_grade = calculate_midterm_grade(prelim_grade, midterm_exam, midterm_cs)

# Final scores input
print("\nFINAL")
assignment = float(input("Enter Assignment Grade in Average (0-100): "))
hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
quiz = float(input("Enter Quiz Grade in Average (0-100): "))
final_exam = float(input("Enter Final Exam Grade in Average (0-100): "))

# Calculate Final Class Standing and Final Grade
final_cs = calculate_final_cs(hands_on_activity, quiz, assignment)
final_grade = calculate_final_grade(midterm_grade, final_exam, final_cs)

# Convert to numerical grade
prelim_numerical_grade = calculate_numerical_grade(prelim_grade)
midterm_numerical_grade = calculate_numerical_grade(midterm_grade)
final_numerical_grade = calculate_numerical_grade(final_grade)

print("\nRESULTS")

print("Name: ", name)
print("Section: ", section)
print("\nPrelim Grade: ", prelim_grade)
print("Prelim Numerical Grade: ", prelim_numerical_grade)
print("\nMidterm Grade: ", midterm_grade)
print("Midterm Numerical Grade: ", midterm_numerical_grade)
print("\nFinal Grade: ", final_grade)
print("Final Numerical Grade: ", final_numerical_grade)

```

main()



Enter your name (Last name, First name Middle): Amutan, Rogenvan B.
Enter your section: BSCPE-1A

PRELIM

Enter Assignment Grade in Average (0-100): 94
 Enter Hands on Activity Grade in Average (0-100): 89
 Enter Quiz Grade in Average (0-100): 90
 Enter Prelim Exam in Average (0-100): 86

MIDTERM

Enter Assignment Grade in Average (0-100): 96
 Enter Hands on Activity Grade in Average (0-100): 90
 Enter Quiz Grade in Average (0-100): 86
 Enter Midterm Exam Grade in Average (0-100): 86

FINAL

Enter Assignment Grade in Average (0-100): 97
 Enter Hands on Activity Grade in Average (0-100): 92
 Enter Quiz Grade in Average (0-100): 86
 Enter Final Exam Grade in Average (0-100): 82

RESULTS

Name: Amutan, Rogenvan B.
 Section: BSCPE-1A

Prelim Grade: 88.15
 Prelim Numerical Grade: 2.0

Midterm Grade: 88.05
 Midterm Numerical Grade: 2.0

Final Grade: 87.08333333333333
 Final Numerical Grade: 2.0

```
def calculate_prelim_grade(prelim_exam, prelim_cs):
    """
    Calculates the Prelim Grade by combining Prelim Exam and Prelim Class Standing (CS).
    - 50% Prelim Exam
    - 50% Prelim Class Standing (CS)

    Args:
        prelim_exam (float): The score for the Prelim Exam (out of 100).
        prelim_cs (float): The Prelim Class Standing score.

    Returns:
        float: The calculated Prelim Grade.
    """
    return 0.50 * prelim_exam + 0.50 * prelim_cs
```

```
def calculate_prelim_cs(hands_on_activity, quiz, assignment):
    """
    Calculates the Prelim Class Standing (CS) based on the given weights:
    - 50% Hands-on Activity
    - 30% Quiz
```

- 20% Assignment

Args:

hands_on_activity (float): The average score for hands-on activity (out of 100).
 quiz (float): The average score for quizzes (out of 100).
 assignment (float): The average score for assignments (out of 100).

Returns:

float: The calculated Prelim Class Standing (CS).

"""

return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment

```
def calculate_midterm_grade(prelim_grade, midterm_exam, midterm_cs):
```

"""

Calculates the Midterm Grade by combining Prelim Grade, Midterm Exam, and Midterm Class

- 50% Prelim Grade

- 50% Midterm Exam and Midterm Class Standing (CS)

Args:

prelim_grade (float): The Prelim Grade (out of 100).

midterm_exam (float): The Midterm Exam score (out of 100).

midterm_cs (float): The Midterm Class Standing (CS) score (out of 100).

Returns:

float: The calculated Midterm Grade.

"""

midterm_exam_cs = (0.50 * midterm_exam) + (0.50 * midterm_cs)

return (1 / 3 * prelim_grade) + (2 / 3 * midterm_exam_cs)

```
def calculate_midterm_cs(hands_on_activity, quiz, assignment):
```

"""

Calculates the Midterm Class Standing (CS) based on the given weights:

- 50% Hands-on Activity

- 30% Quiz

- 20% Assignment

Args:

hands_on_activity (float): The average score for hands-on activity (out of 100).

quiz (float): The average score for quizzes (out of 100).

assignment (float): The average score for assignments (out of 100).

Returns:

float: The calculated Midterm Class Standing (CS).

"""

return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment

```
def calculate_final_grade(final_cs, midterm_grade, final_exam):
```

"""

Calculates the Final Grade by combining Midterm Grade, Final Exam, and Final Class Standing

- 50% Midterm Grade
- 50% Final Exam and Final Class Standing (CS)

Args:

midterm_grade (float): The Midterm Grade (out of 100).
 final_exam (float): The Final Exam score (out of 100).
 final_cs (float): The Final Class Standing (CS) score (out of 100).

Returns:

float: The calculated Final Grade.

"""

```
final_exam_cs = (0.50 * final_exam) + (0.50 * final_cs)
return (1 / 3 * midterm_grade) + (2 / 3 * final_exam_cs)
```

```
def calculate_final_cs(hands_on_activity, quiz, assignment):
```

"""

Calculates the Final Class Standing (CS) based on the given weights:

- 50% Hands-on Activity
- 30% Quiz
- 20% Assignment

Args:

hands_on_activity (float): The average score for hands-on activity (out of 100).
 quiz (float): The average score for quizzes (out of 100).
 assignment (float): The average score for assignments (out of 100).

Returns:

float: The calculated Final Class Standing (CS).

"""

```
return 0.50 * hands_on_activity + 0.30 * quiz + 0.20 * assignment
```

```
def calculate_numerical_grade(grade):
```

"""

Converts the grade (out of 100) to the University of Caloocan City's numerical grading scale based on the provided image.

- 1.00: 99-100
- 1.25: 96-98
- 1.50: 93-95
- 1.75: 90-92
- 2.00: 87-89
- 2.25: 84-86
- 2.50: 81-83
- 2.75: 78-80
- 3.00: 75-77
- 4.00: 72-74
- 5.00: Below 71

Args:

grade (float): The grade (out of 100).

Returns:

float: The corresponding numerical grade.

"""

```
if 99 <= grade <= 100:
    return 1.00 # Excellent
elif 96 <= grade <= 98:
    return 1.25 # Very Good
elif 93 <= grade <= 95:
    return 1.50 # Good
elif 90 <= grade <= 92:
    return 1.75 # Satisfactory
elif 87 <= grade <= 89:
    return 2.00 # Passing
elif 84 <= grade <= 86:
    return 2.25 # Fair
elif 81 <= grade <= 83:
    return 2.50 # Conditional
elif 78 <= grade <= 80:
    return 2.75 # Needs Improvement
elif 75 <= grade <= 77:
    return 3.00 # Unsatisfactory
elif 72 <= grade <= 74:
    return 4.00 # Needs Improvement
else:
    return 5.00 # Failing
```

def main():

"""Main function collects the user's inputs for scores and calculates the final grades."""

Collecting user's name and section

name = input("Enter your name (Last name, First name Middle): ")

section = input("Enter your section: ")

Prelim scores input

print("\nPRELIM")

assignment = float(input("Enter Assignment Grade in Average (0-100): "))

hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))

quiz = float(input("Enter Quiz Grade in Average (0-100): "))

prelim_exam = float(input("Enter Prelim Exam in Average (0-100): "))

Calculate Prelim Class Standing and Prelim Grade

prelim_cs = calculate_prelim_cs(hands_on_activity, quiz, assignment)

prelim_grade = calculate_prelim_grade(prelim_exam, prelim_cs)

Midterm scores input

print("\nMIDTERM")

assignment = float(input("Enter Assignment Grade in Average (0-100): "))

```

hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
quiz = float(input("Enter Quiz Grade in Average (0-100): "))
midterm_exam = float(input("Enter Midterm Exam Grade in Average (0-100): "))

# Calculate Midterm Class Standing and Midterm Grade
midterm_cs = calculate_midterm_cs(hands_on_activity, quiz, assignment)
midterm_grade = calculate_midterm_grade(prelim_grade, midterm_exam, midterm_cs)

# Final scores input
print("\nFINAL")
assignment = float(input("Enter Assignment Grade in Average (0-100): "))
hands_on_activity = float(input("Enter Hands on Activity Grade in Average (0-100): "))
quiz = float(input("Enter Quiz Grade in Average (0-100): "))
final_exam = float(input("Enter Final Exam Grade in Average (0-100): "))

# Calculate Final Class Standing and Final Grade
final_cs = calculate_final_cs(hands_on_activity, quiz, assignment)
final_grade = calculate_final_grade(midterm_grade, final_exam, final_cs)

# Convert to numerical grade
prelim_numerical_grade = calculate_numerical_grade(prelim_grade)
midterm_numerical_grade = calculate_numerical_grade(midterm_grade)
final_numerical_grade = calculate_numerical_grade(final_grade)

print("\nRESULTS")

print("Name: ", name)
print("Section: ", section)
print("\nPrelim Grade: ", prelimD_grade)
print("Prelim Numerical Grade: ", prelim_numerical_grade)
print("\nMidterm Grade: ", midterm_grade)
print("Midterm Numerical Grade: ", midterm_numerical_grade)
print("\nFinal Grade: ", final_grade)
print("Final Numerical Grade: ", final_numerical_grade)

```

main()



Enter your name (Last name, First name Middle): Beguia, Den Mark T.
Enter your section: BSCPE-1a

PRELIM

Enter Assignment Grade in Average (0-100): 89
Enter Hands on Activity Grade in Average (0-100): 84
Enter Quiz Grade in Average (0-100): 80
Enter Prelim Exam in Average (0-100): 79

MIDTERM

Enter Assignment Grade in Average (0-100): 90
Enter Hands on Activity Grade in Average (0-100): 89
Enter Quiz Grade in Average (0-100): 94

Enter Midterm Exam Grade in Average (0-100): 80

FINAL

Enter Assignment Grade in Average (0-100): 95

Enter Hands on Activity Grade in Average (0-100): 89

Enter Quiz Grade in Average (0-100): 81

Enter Final Exam Grade in Average (0-100): 81

RESULTS

Name: Beguia, Den Mark T.

Section: BSCPE-1a

Prelim Grade: 81.4

Prelim Numerical Grade: 2.5

Midterm Grade: 84.03333333333333

Midterm Numerical Grade: 2.25

Final Grade: 84.27777777777777

Final Numerical Grade: 2.25

1. How can you calculate a student's final semester grade, considering Prelim, Midterm, and Final grades?

- the final semester can be calculated by assigning weights to the Prelim, Midterm, and Final grades. For example:

Prelim = 30% of the final grade

Midterm = 30% of the final grade

Final = 40% of the final grade

2. How can you determine if a student passed or failed based on the final semester grade?

- by the use if-else statements to determine whether the student passed or failed based on a threshold. For instance, a grade of 60 or above might be considered a passing grade.

Conclusion: To sum it up, this program will apply core concepts of programming to create a functioning grading system that includes function definitions, conditional statements, and mathematical operations. Because the program was structured into modular functions, readability and maintainability are improved to make it easier to modify as needed in the future. This program also supports the handling of user input and the presentation of formatted output. It therefore provided us with hands-on experience in Python programming, which greatly enhanced our capacity to develop applications that are well-structured and practical.

```
PHOA = float(input("Enter Hands-on Activity grade: "))
```

```
PQUIZ = float(input("Enter Prelim Quiz grade: "))
```

```
PAS = float(input("Enter Prelim Assignment grade: "))
PCS = PH0A*.5 + PQUIZ*.3 + PAS*.2
print("Prelim CS is: ", PCS)
PEX = float(input("Enter Prelim Exam grade: "))
PG = PEX*.5 + PCS*.5
print("Prelim Grade is: ", "%.2f" % PG)
```