Python Programming

Sample Problem sets for Final Exam

Here are three sample problems to give you an overall idea of the problem sets for the final exam. The actual questions will follow the similar pattern and vary in difficulty.

Problem 1:

Write a Python program that does the following:

1. Take a list of integers from the user.

2. Find and print the sum of all even numbers and the sum of all odd numbers in the list.

3. Check if the sum of the even numbers is greater than the sum of the odd numbers. Print "*Even sum is greater*" if true, otherwise print "*Odd sum is greater*".

Sample Input:

```
Enter numbers4 7 9 2 8 5
```

Sample Output:

```
Sum of even numbers: 14
Sum of odd numbers: 21
Odd sum is greater.
```

Problem 2:

Write a Python program that includes a function to do the following:

1. Define a function is_palindrome that takes a string as input and returns True if the string is a palindrome, otherwise False.

2. The program should take a list of strings as input and call the function on each string.

3. If the string is a palindrome, print "Palindrome", otherwise print "Not Palindrome".

4. Store all the palindromes in a tuple and print the tuple at the end.

Sample Input:

```
Enter strings (separated by spaces): level racecar hello world noon
```

Sample Output:

```
level: Palindrome
racecar: Palindrome
hello: Not Palindrome
world: Not Palindrome
noon: Palindrome
Palindrome Tuple: ('level', 'racecar', 'noon')
```

Problem 3: String operations

Write a Python program that includes a module with the following:

1. Define a class Student in a module that stores a student's name and score.

2. The class should have a method is_passing() that returns True if the student's score is above 60, otherwise False.

3. The program should take input from the user for multiple students' names and scores.

4. Use the class to create Student objects, store them in a list, and print each student's name and whether they are passing or failing.

5. Also, implement a function that calculates the average score of all students and prints it.

Sample Input:

```
Enter the number of students: 3
Enter name and score: John 75
Enter name and score: Alice 58
Enter name and score: Bob 92
```

Sample Output:

```
John: Passing
Alice: Failing
Bob: Passing
Average Score: 75.0
```