

# Advance Programing Assignemnt 1

1. Given a string s , and two indices, begin and end , print a substring consisting of all characters in the inclusive range from begin to end -1 .

```
1 public class Solution {
2     public static void main(String[] args) {
3         Scanner in = new Scanner(System.in);
4         // your implementaion should go here
5     }
6 }
```

2. A palindrome is a word, phrase, number, or other sequence of characters which reads the same backward or forward. Given a string , print Yes if it is a palindrome, print No otherwise.
3. Consider the following implementation of a class Square:  
What are the errors and how to fix it?

```
1 public class Square{
2     private int sideLength;
3     private int area
4     public Square(String initialLength){
5         sideLength = initialLength;
6         area = sideLength * sideLength
7     }
8     public getArea() {
9         return area;
10    }
11    public void grow() {
12        sideLength = 2 * sideLen
13    }
14 }
15
```

- 
4. Write programs with loops that compute
    - a. The sum of all even numbers between 2 and 100 (inclusive).
    - b. The sum of all squares between 1 and 100 (inclusive)
  5. Create a simple **Student Management System** using Java. The system should be able to store and manage student information, including their name, age, and grades. The user should be able to:
    1. Add a new student.
    2. Display a list of all students along with their details.
    3. Calculate and display the average grade of all students.

### Requirements:

#### 1. Create a class **Student** :

- Fields: name (String), age (int), grade (double).
- Constructor: Initialize a new student with the provided name, age, and grade.
- Methods:
  - `public void displayStudentInfo()` : Print the student's name, age, and grade.

#### 2. Create a class **StudentManagement** :

- Fields: An `ArrayList<Student>` to store the students.
- Methods:
  - `public void addStudent(Student student)` : Add a new student to the list.
  - `public void displayAllStudents()` : Display the details of all students in the list.
  - `public double calculateAverageGrade()` : Return the average grade of all students.

#### 3. Create a **main** method in **StudentManagement** class:

- Allow the user to interact with the system through a console-based menu. The menu should have options to:

