Lab Assignment-04

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QUES 1 [A]: Program to print the corresponding grade for the given mark using if..else statement in Java.

SOLUTION:

```java
import java.util.Scanner;
public class Grade {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the marks: ");
        int marks = sc.nextInt();
        char grade = 'F';
        if (marks >= 90)
            grade = 'O';
        else if (marks >= 80)
            grade = 'E';
        else if (marks >= 70)
            grade = 'A';
        else if (marks >= 60)
            grade = 'B';
        else if (marks >= 50)
            grade = 'C';
        else if (marks >= 40)
            grade = 'D';
        System.out.println("Grade: " + grade);
        sc.close();
    }
}
```

OUTPUT:

```
Enter the marks:
80
Grade: E
```

QUES 1 [B]: Program to check a user entered number is palindrome or not.

SOLUTION:

```java
import java.util.Scanner;
class Palindrome {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number to check:");
        int num = sc.nextInt();
        int reversedNum = 0;
        int remainder;
        int temp = num;
        while (num != 0) {
            remainder = num % 10;
            reversedNum = reversedNum * 10 + remainder;
            num /= 10;
        }
```

```
        if (temp == reversedNum) {
            System.out.println("Palindrome!");
        } else {
            System.out.println("Not a Palindrome");
        }
        sc.close();
    }
}
```

OUTPUT:

```
Enter the number to check:
101
Palindrome!
```

QUES 2 [A]: Print the following pattern:

A

C D

F G H

J K L M

SOLUTION:

```
import java.util.Scanner;
class PatternA {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the height of pattern: ");
        int size = sc.nextInt();
        char ch = 'A';
        for (int i = 1; i <= size; i++) {
            for (int j = 1; j <= i; j++) {
                System.out.print(ch + "");
                ch++;
            }
            ch++;
            System.out.println();
        }
        sc.close();
    }
}
```

OUTPUT:

```
Enter the height of pattern:
4
A
CD
FGH
JKLM
```

QUES 2 [B]: Print the following pattern:

      1

```
    2 3 2
  3 4 5 4 3
4 5 6 7 6 5 4
```

SOLUTION:

```java
import java.util.*;

class Pattern1 {

    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the size of the pattern:");
        int size = sc.nextInt();
        for (int i = 1; i < size; i++) {
            System.out.print("  ");
        }
        System.out.print("1");
        System.out.println();

        for (int i = 2; i <= size; i++) {
            for (int j = 1; j <= size - i; j++) {
                System.out.print("  ");
            }
            for (int j = i; j <= 2 * i - 1; j++) {
                System.out.print(j);
                System.out.print(" ");
            }
            for (int j = 2 * i - 2; j >= i; j--) {
                System.out.print(j);
                System.out.print(" ");
            }
            System.out.println();
        }
        sc.close();
    }
}
```

OUTPUT:

```
Enter the size of the pattern:
4

      1
    2 3 2
  3 4 5 4 3
4 5 6 7 6 5 4
```
