DAY 1

1) Count Digits

```
package Ass_1;
import java.util.Scanner;
public class Count_Digits {
    public static void main(String[] args) {
         Scanner sc = new Scanner(System.in);
         System.out.print("Enter a number: ");
         int num = sc.nextInt();

         int count = 0;
         int temp = Math.abs(num); // To handle negative numbers

         if (temp == 0) {
             count = 1; // Special case: 0 has 1 digit
         } else {
             while (temp > 0) {
                 temp /= 10;
                 count++;
             }
         }

         System.out.println("Total digits: " + count);
     }
}
```

Output : Enter a number: 12345

Total digits: 5

2) Diamond

```
package Ass_1;

public class Diamond {
        public static void main(String[] args) {
               int rows = 5;

            for (int i = 1; i <= rows; i++) {

                for (int j = i; j < rows; j++) {
                    System.out.print(" ");
                }


                for (int k = 1; k <= (2 * i - 1); k++) {
                    System.out.print("*");
                }

                System.out.println();
            }
```

```
            for (int i = rows - 1; i >= 1; i--) {

                for (int j = rows; j > i; j--) {
                    System.out.print(" ");
                }


                for (int k = 1; k <= (2 * i - 1); k++) {
                    System.out.print("*");
                }

                System.out.println();
            }
        }
```

Output :

```
    *
   ***
  *****
 *******
*********
 *******
  *****
   ***
    *
```

3) Factorial_Num

```
package Ass_1;
import java.util.Scanner;

public class Factorial_Num {
	public static void main(String[] args) {
		Scanner Sc= new Scanner(System.in);
		int n= Sc.nextInt();
		int prd=1;
		for (int i=1;i<=n;i++) {
			prd*=i;
		}
		System.out.println(prd);
	}
}
```

Output : Enter a number: 5
120

4) Fibonacci_Series

```
package Ass_1;

public class Fibonacci_Series {
```

```
        public static void main(String[] args) {
                            int n = 10; // Number of terms
                            int a = 0, b = 1;

                            System.out.print("Fibonacci Series up to " + n
+ " terms: ");

                            for (int i = 1; i <= n; i++) {
                                System.out.print(a + " ");
                                int next = a + b;
                                a = b;
                                b = next;
                            }

        }
}
```

Output :

```
Fibonacci Series up to 10 terms: 0 1 1 2 3 5 8 13 21 34
```

5) Multiples of 17

```
    package Ass_1;


    public class Multiples_Of_17 {

public static void main(String[] args) {

       for (int i=1;i<=10;i++) {

              System.out.println("17 x "+i+ " " +" = "+17*i);

       }

}


        }
```

Output :

```
17 x 1  = 17

17 x 2  = 34

17 x 3  = 51

17 x 4  = 68

17 x 5  = 85

17 x 6  = 102

17 x 7  = 119

17 x 8  = 136

17 x 9  = 153

17 x 10  = 170
```

6) Odd Even Numbers

```
package Ass_1;

public class Odd_Even_num {
	public static void main (String[]args) {
		for (int i=2;i<=50;i++) {
			if (i%2==0) {
				System.out.println(i);
			}
		}
	}
}
```

Output:

```
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
```

7) Palindrome

```
package Ass_1;
import java.util.Scanner;


public class Pali {
	public static void main(String[] args) {
	  Scanner sc = new Scanner(System.in);
	  System.out.print("Enter a number: ");
	  int num = sc.nextInt();

	  int original = num;
	  int reversed = 0;

	  while (num != 0) {
	      int digit = num % 10;
	      reversed = reversed * 10 + digit;
	      num /= 10;
	  }
```

```
        if (original == reversed) {
            System.out.println(original + " is a Palindrome number.");
        } else {
            System.out.println(original + " is NOT a Palindrome number.");
        }
    }
}
```

Output :

```
Enter a number: 121
121 is a Palindrome number.

Enter a number: 123
123 is NOT a Palindrome number.
```

8) Prime Number

```
package Ass_1;
import java.util.Scanner;


public class Prime_Num {
	public static void main(String[] args) {
		Scanner sc= new Scanner(System.in);
		int n=sc.nextInt();
		int t=0;
		for (int i=2;i<=n/2;i++) {
			if (n%i==0) {
				t++;
			}
		}
		if(t==0) {
			System.out.println("The given number is a Prime");
		}
		else {
			System.out.println("The given number is Not a prime");
		}
	}
}
```

Output :

```
5
The given number is a Prime

10
The given number is Not a prime
```

9) Pyramid

```
package Ass_1;

public class Pyramid {
```

```
        public static void main(String[] args) {
         int rows = 8;

         for (int i = 1; i <= rows; i++) {

             for (int j = i; j < rows; j++) {
                 System.out.print(" ");
             }


             for (int k = 1; k <= (2 * i - 1); k++) {
                 System.out.print("*");
             }


             System.out.println();
         }

}
}
```

Output :

```
        *
       ***
      *****
     *******
    *********
   ***********
  *************
***************
```

10) Reversing a Number

```
package Ass_1;

public class Reverse_a_Num {
        public static void main(String[] args) {
                for (int i=20;i>=1;i--) {
                        System.out.println(i);
                }
        }

}
```

Output :

11) Sqr Number

```
package Ass_1;

public class Sqr_num {
	public static void main(String[] args) {
		for (int i=1;i<=10;i++) {
			System.out.println(i*i);
		}
	}
}
```

Output :

```
1
4
9
16
25
36
49
64
81
100
```

12) Sum Of Digits

```
package Ass_1;
import java.util.Scanner;



public class Sum_Of_Digits {


public static void main(String[] args) {
   Scanner sc = new Scanner(System.in);
   System.out.print("Enter a number: ");
   int num = sc.nextInt();


   int sum = 0;
   int temp = Math.abs(num); // To handle negative numbers
```

```
    while (temp > 0) {
        sum += temp % 10;
        temp /= 10;
    }

    System.out.println("Sum of digits: " + sum);
}
}
```

Output :

Enter a number: 1234

Sum of digits: 10

13) Sum Of Digits

```
package Ass_1;

public class SumOf_Num {
        public static void main(String[] args) {
                int sum=0;
                for (int i=1; i<=50;i++) {
                        sum+=i;
                }
                System.out.println(sum);
        }
}
```

Output :