Day 1 Adnan Sameer

Problem Solving Activities

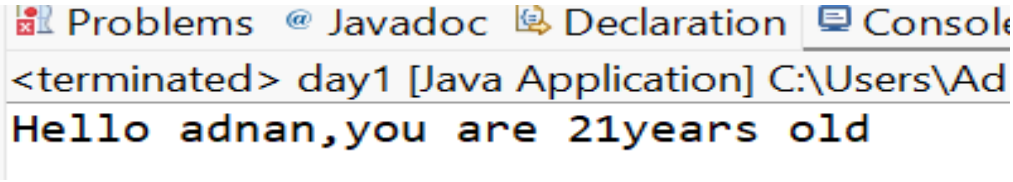
1. Input & Output Practice

Write a program that takes your name and age as input and prints a greeting like:

“Hello John, you are 20 years old.”bbbbkkkkouy

```
package Stemup;

public class day1 {

    public static void main(String[] args) {

        String name="adnan";
        String age="21";


        System.out.println("Hello "+name +","+"you are "+age+"years old");
    }

}
```

OUTPUT:



Algorithm:

- Seek input from user using scanner class
- Store the name in a variable
- Store the age in a variable
- Print the values and concatenate

2. Type Conversion Challenge

- Take two numbers as input (strings), convert them to integers, and print their sum, difference, and product.

Algorithm:

- Get input using Scanner class
- Using ParseInt convert the string to integer

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- Perform sum,difference,product of numbers
- Print the values

Code:

```
        String input1="2";
        String input2="4";
    System.out.println(Integer.parseInt(input1)+Integer.parseInt(input2));
```

Output:

```
<terminated> day12 [J
6
```

3. Data Type Classification

•Identify the data type of the following inputs in your language of choice: "123", 123, 123.45, True, "Hello"

```
        String var1="123";
        int var2=123;
        float var3= 123.45f;
        System.out.println(var3);
        //bolean var4=true;
        String var5="hello";
//
```

Output:

```
123
123
123.45
hello
```

4. Temperature Converter

Write a program that converts Celsius to Fahrenheit using a variable and formula: F=(C*9/5)+32

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```java
import java.util.Scanner;

public class Celsius {
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        Syst                                    :");
        int
        int fahrenheit =(celsius*9/5)+32;
        System.out.println("The degree celsius converted to fahrenheit as:"+fahrenheit);

    }
    }
```

Output:

```
Enter the degree celsius:
45
The degree celsius converted to fahrenheit as:113
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
```

2. Simple Calculator

Create a basic calculator that performs +,-,* and / between two user provided numbers.

```java
import java.util.Scanner;

public class switchCal {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter first number: ");
        double num1 = scanner.nextDouble();
        System.out.print("Enter second number: ");
        double num2 = scanner.nextDouble();
        System.out.print("Enter an operator (+, -, *, /): ");
        char operator = scanner.next().charAt(0);
        double result = 0;

        switch (operator) {
            case '+':
                result = num1 + num2;
                System.out.println("The result is: "+result);
                break;
```

```
            case '-':
                result = num1 - num2;
                System.out.println("The result is: "+result);
                break;

            case '*':
                result = num1 * num2;
                System.out.println("The result is: "+result);
                break;

            case '/':
                if (num2 != 0) {
                    result = num1 / num2;
                    System.out.println("The result is: "+result);

                } else {
                    System.out.println("Arithematic Exception.");

                }
                break;

            default:
                System.out.println("Error: Invalid operator.");

        }


    }
}
```

Output:

```
Enter first number: 4
Enter second number: 4
Enter an operator (+, -, *, /): +
The result is: 8.0
```

```
Enter first number: 3
Enter second number: 3
Enter an operator (+, -, *, /): _
Error: Invalid operator.
```

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```
Enter first number: 3
Enter second number: 3
Enter an operator (+, -, *, /): -
The result is: 0.0
```

1. Even or Odd Checker

- Accept a number from the user and print whether it is even or odd using if-else.

```java
import java.util.Scanner;
public class evenodd {
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println(x:"Enter your number:");
        int num=sc.nextInt();

        if(num % 2 == 0){
            System.out.println("the value is even: "+num);
        }else{
            System.out.println("the value is odd: "+num);

        }
    }
}
```

Output:

```
9e7c6c22373\redhat.java\jdt_ws\Stemup_dddf4c3\bin' 'evenodd'
Enter your number:
2
the value is even: 2
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
```

```
Enter your number:
1
the value is odd: 1
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
```

2. Grade Calculator

- Based on marks (0-100), print grade using:

  - A: 90+

  - B: 80-89

  - C: 70-79

  - D: 60-69

  - F: <60

```java
import java.util.Scanner;

public class gradecal {
    public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter your marks:");
            int num=sc.nextInt();
            if(num>100){
                System.out.println("invalid marks");
            }
            else if(num>90){
                System.out.println("The grade for your marks is A");

            }
            else if(num>=80){
                System.out.println("The grade for your marks is B");
            }
            else if(num>=70 ){
                System.out.println("The grade for your marks is C");
            } else if(num>=60 ){
                System.out.println("The grade for your marks is D");
```

```
            } else{
                System.out.println("Sorry! You have failed!");
            }
}
}
```

Output:

```
Enter your marks:
90
The grade for your marks is B
PS C:\Users\Admin\OneDrive\Desktop\Stemup> ^C
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
PS C:\Users\Admin\OneDrive\Desktop\Stemup>  c:; cd 'c:\Users\Admin\OneDrive\Desktop\Stemup'; & 'C:\Program Files\Eclipse Ad
optium\jdk-17.0.13.11-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Admin\AppData\Roaming
\Code\User\workspaceStorage\fd9c0637ef7e093cab2079e7c6c22373\redhat.java\jdt_ws\Stemup_dddf4c3\bin' 'gradecal'
Enter your marks:
70
The grade for your marks is C
PS C:\Users\Admin\OneDrive\Desktop\Stemup> ^C
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
PS C:\Users\Admin\OneDrive\Desktop\Stemup>  c:; cd 'c:\Users\Admin\OneDrive\Desktop\Stemup'; & 'C:\Program Files\Eclipse Ad
optium\jdk-17.0.13.11-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Admin\AppData\Roaming
\Code\User\workspaceStorage\fd9c0637ef7e093cab2079e7c6c22373\redhat.java\jdt_ws\Stemup_dddf4c3\bin' 'gradecal'
Enter your marks:
55
Sorry! You have failed!
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
```

3. Number Comparison

Accept two numbers and print which is greater, or if they are equal.

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```java
import java.util.Scanner;

public class numbercomparison {
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            System.out.println(x:"Enter the first number:");
            int num1=sc.nextInt();
            System.out.println(x:"Enter the second number:");
            int num2=sc.nextInt();

            if(num1>num2){
                System.out.println("the greater value is "+num1);
            }else if(num2>num1){
                System.out.println("the greater value is "+num2);
            }else{
                System.out.println(x:"both the values are equal");
            }

}
}
```

Output:

```
9e7c6c22373\redhat.java\jdt_ws\Stemup_dddf4c3\bin' 'numberco
Enter the first number:
1
Enter the second number:
6
the greater value is 6
```

```
Enter the first number:
21
Enter the second number:
2
the greater value is 21
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
```

```
Enter the first number:
20
Enter the second number:
20
both the values are equal
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
```

4. Countdown Timer

Using a while loop, print numbers from 10 down to 1.

```java
public class timer {
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
    int i = 10;

    while (i >= 1) {
    System.out.println(i);
      i--;
    }
}
}
```

Output:

```
10
9
8
7
6
5
4
3
2
1
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
```

5. Multiplication Table Generator

Accept a number from the user and print its multiplication table up to 10 using a for loop.

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


           for(int i=1; i<=10; i++){
               System.out.println(a + " x " + i + " = " + (a * i));

           }
       }
   }
```

Output:

```
\Code\User\workspaceStorage\fd9c0637ef7e093cab20
Enter a number:
4
4 x 1 = 4
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4 x 5 = 20
4 x 6 = 24
4 x 7 = 28
4 x 8 = 32
4 x 9 = 36
4 x 10 = 40
PS C:\Users\Admin\OneDrive\Desktop\Stemup>
```