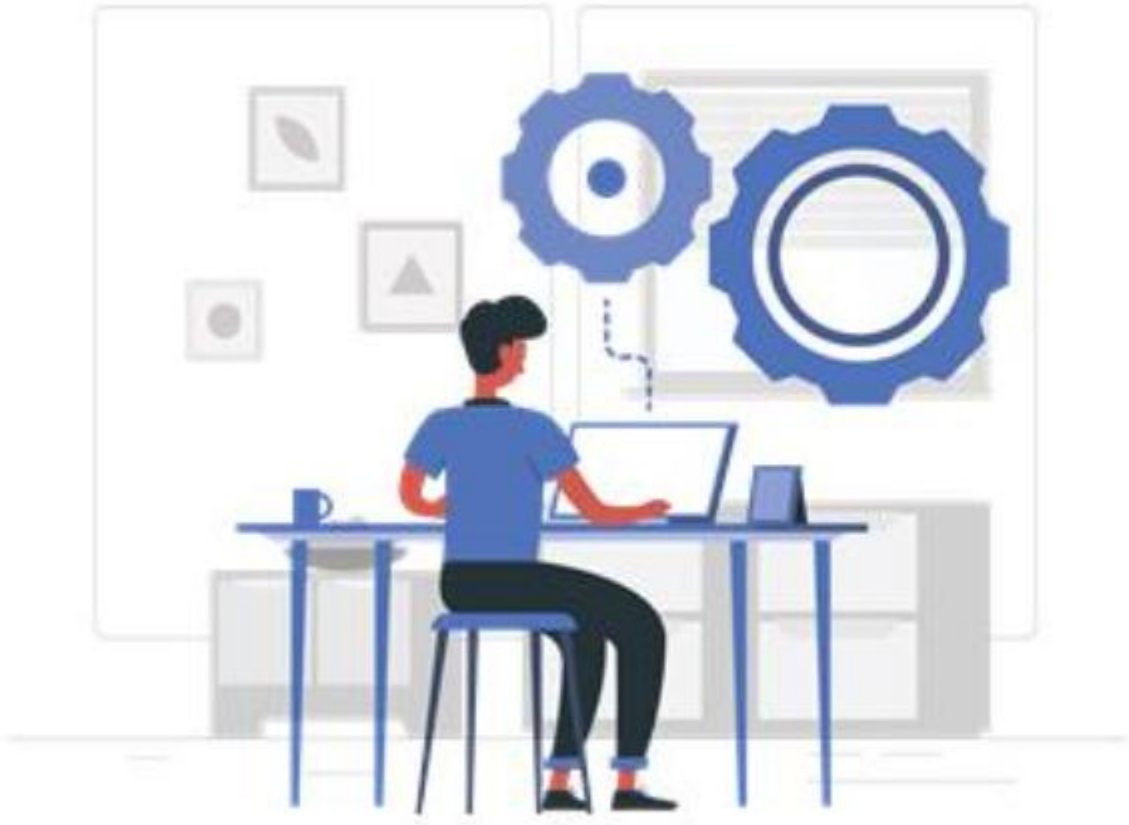

Practice

Implement Conditional Constructs

Practice Exercises

- Practice 1: Aquarium Water pH Value
- Practice 2: Fencing a Barn

PRACTICE 1

Practice 1: Aquarium Water pH Value

The chemical formula of water is H2O (2 hydrogen atoms + 1 oxygen atom). The pH of an aquarium measures how acidic or basic the water is. It ranges from 0 to 14, with 0 being the most acidic and 14 the most alkaline (basic). Neutral water has a pH value of 7.

For a goldfish to survive in an aquarium, the pH value must range between 7 to 8. The pH of the aquarium itself can change over time.

Write a program that takes the aquarium water's pH value, checks the condition of the pH value of water and displays the result.

Practice 1: Tasks

- Write a class called **PhLevelAnalyser**.
- Inside the class write the main method.
- Write all the lines of code inside the main method.
- Accept the number as input from the user utilizing the Scanner and store it in a variable.
- Write the logic to check the condition of the pH value of water.
- Display the message as shown in the upcoming slide.

Practice 1: Tasks (cont'd)

- **Condition 1:** If the pH value is below 7:
  - `Display "pH value is low, partial water change required."`
- **Condition 2:** If the value is between 7 to 8:
  - `Display "pH value is fine."`
- **Condition 3:** If the value is greater than 8:
  - `Display "pH value is high, partial water change required."`

Input and Output: 1

Sample Input

```
8
```

Expected Output

Note that the output must contain the below line in the same format.

```
pH value is fine.
```

Input and Output: 2

Sample Input

```
10
```

Expected Output

Note that the output must contain the below line in the same format.

```
pH value is high, partial water change required.
```

PRACTICE 2

Practice 2: Fencing a Barn

Ron wants to build fences around his barn to keep the animals separate. This will help him feed the animals more easily and solve the problem of animals getting mixed up. Ron plans to divide the area into three parts: a square for the chickens, a circular area for the ducks, and a rectangular area for the cows.

Create a program in Java to help Ron calculate the area for each fence separately.

Practice 2: Tasks

- Create a Java class and name it as **AreaCalculator.**
- Inside the class, write the main method.
- Write all the lines of code inside the main method.
    - You can calculate the **area of the square** by taking the side as input, storing the area in a variable, and printing it.
    - To calculate the **area of the circle**, take the radius as input, store the area in a variable and print it.
    - In order to calculate the **area of the rectangle**, take its length and width as inputs, store the area in a variable, and print it.
    - Use Switch case.
- All inputs must be taken using the Scanner.

Input and Output: 1

Sample Input

```
1

20
```

Expected Output

Note that the output must contain the below lines in the same format.

```
Area of square fence for chickens is 400.
```

Input and Output: 2

Sample Input

```
2

10
```

Expected Output

Note that the output must contain the below lines in the same format.

```
Area of circular fence for ducks is 314.0.
```

Input and Output: 3

Sample Input

```
3

10

20
```

Expected Output

Note that the output must contain the below lines in the same format.

```
Area of rectangular fence for cows is 200.0.
```