```java
package com.kunal;

public class Conditionals {

    public static void main(String[] args) {
        /*
            Syntax of if statements:
            if (boolean expression T or F) {
                // body
            } else {
                // do this
            }
        */

        int salary = 25400;
//        if (salary > 10000) {
//            salary = salary + 2000;
//        } else {
//            salary = salary + 1000;
//        }

        // multiple if-else

//        if (salary > 10000) {
//            salary += 2000; // salary = salary + 2000
//        } else if (salary > 20000) {
//            salary += 3000;
//        } else {
//            salary += 1000;
//        }
//
//        System.out.println(salary);

        int a = 10;
        int b = 40;

        if (a != 35) {
            System.out.println("Hello World");
        }
    }
}
```

```java
package com.kunal;

import java.util.Scanner;

public class Loops {
    public static void main(String[] args) {

        /*
            Syntax of for loops:

            for (initialisation; condition; increment/decrement) {
                // body
            }
        */

        // Q: Print numbers from 1 to 5
//        for (int num = 1; num <= 5; num += 2) {
//            System.out.println(num);
//        }

        // print numbers from 1 to n
        Scanner in = new Scanner(System.in);
//        int n = in.nextInt();

//        for (int num = 1; num <= n; num++) {
////            System.out.print(num + " ");
//            System.out.println("Hello World");
//        }

        // while loops
        /*
            Syntax:
            while (condition) {
                // body
            }
         */

//        for (int num = 1; num <= 5; num += 2) {
//            System.out.println(num);
//        }

        int num  = 1;
        while (num <= 5) {
//            System.out.println(num);
            num += 1;
        }

        // do while
        /*

            do {
                // body
            } while (condition);

         */
        int n = 1;
        do {
            System.out.println("Hello World");
        } while (n != 1);

    }
}
```

```java
package com.kunal;

import java.util.Scanner;

public class Largest {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);

        int a = in.nextInt();
        int b = in.nextInt();
        int c = in.nextInt();

        // Q: Find the largest of the 3 numbers
//        int max = a;
//        if (b > max) {
//            max = b;
//        }
//        if (c > max) {
//            max = c;
//        }

//        int max = 0;
//        if (a > b) {
//            max = a;
//        } else {
//            max = b;
//        }
//
//        if (c > max) {
//            max = c;
//        }

        int max = Math.max(c, Math.max(a, b));

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

```java
package com.kunal;

import java.util.Scanner;

public class CaseCheck {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        char ch = in.next().trim().charAt(0);

        if (ch >= 'a' && ch <= 'z') {
            System.out.println("Lowercase");
        } else {
            System.out.println("Uppercase");
        }

    }
}
```

```java
package com.kunal;

import java.util.Scanner;

public class Fibo {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        int n = in.nextInt();
        int a = 0;
        int b = 1;
        int count = 2;

        while (count <= n) {
            int temp = b;
            b = b + a;
            a = temp;
            count++;
        }

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

```java
package com.kunal;

public class CountNums {
    public static void main(String[] args) {
        int n = 45535;

        int count = 0;
        while (n > 0) {
            int rem = n % 10;
            if (rem == 5) {
                count++;
            }
            n = n / 10; // n /= 10
        }

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

```java
package com.kunal;

public class Reverse {
    public static void main(String[] args) {
        int num = 123456;

        int ans = 0;

        while (num > 0) {
            int rem = num % 10;
            num /= 10;

            ans = ans * 10 + rem;
        }

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

```java
package com.kunal;

import java.util.Scanner;

public class Calculator {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        // Take input from user till user does not press X or x
        int ans = 0;
        while (true) {
            // take the operator as input
            System.out.print("Enter the operator: ");
            char op = in.next().trim().charAt(0);

            if (op == '+' || op == '-' || op == '*' || op == '/' || op == '%') {
                // input two numbers
                System.out.print("Enter two numbers: ");
                int num1 = in.nextInt();
                int num2 = in.nextInt();

                if (op == '+') {
                    ans = num1 + num2;
                }
                if (op == '-') {
                    ans = num1 - num2;
                }
                if (op == '*') {
                    ans = num1 * num2;
                }
                if (op == '/') {
                    if (num2 != 0) {
                        ans = num1 / num2;
                    }
                }
                if (op == '%') {
                    ans = num1 % num2;
                }
            } else if (op == 'x' || op == 'X') {
                break;
            } else {
                System.out.println("Invalid operation!!");
            }
            System.out.println(ans);
        }
    }
}
```

```java
package com.kunal;

import java.util.Scanner;

public class Main {

    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
//        String fruit = in.next();
//
//        switch (fruit) {
//            case "Mango" -> System.out.println("King of fruits");
//            case "Apple" -> System.out.println("A sweet red fruit");
//            case "Orange" -> System.out.println("Round fruit");
//            case "Grapes" -> System.out.println("Small fruit");
//            default -> System.out.println("please enter a valid fruit");
//        }

        int day = in.nextInt();
//        switch (day) {
//            case 1 -> System.out.println("Monday");
//            case 2 -> System.out.println("Tuesday");
//            case 3 -> System.out.println("Wednesday");
//            case 4 -> System.out.println("Thursday");
//            case 5 -> System.out.println("Friday");
//            case 6 -> System.out.println("Saturday");
//            case 7 -> System.out.println("Sunday");
//        }

//        switch (day) {
//            case 1:
//            case 2:
//            case 3:
//            case 4:
//            case 5:
//                System.out.println("Weekday");
//                break;
//            case 6:
//            case 7:
//                System.out.println("Weekend");
//                break;
//        }

        switch (day) {
            case 1, 2, 3, 4, 5 -> System.out.println("Weekday");
            case 6, 7 -> System.out.println("Weekend");
        }

    }
}
```

```java
package com.kunal;

import java.util.Scanner;

public class NestedSwitch {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        int empID = in.nextInt();
        String department = in.next();

        switch (empID) {
            case 1:
                System.out.println("Kunal Kushwaha");
                break;
            case 2:
                System.out.println("Rahul Rana");
                break;
            case 3:
                System.out.println("Emp Number 3");
                switch (department) {
                    case "IT":
                        System.out.println("IT Department");
                        break;
                    case "Management":
                        System.out.println("Management Department");
                        break;
                    default:
                        System.out.println("No department entered");
                }
                break;
            default:
                System.out.println("Enter correct EmpID");
        }

        // better way to write
        switch (empID) {
            case 1 -> System.out.println("Kunal Kushwaha");
            case 2 -> System.out.println("Rahul Rana");
            case 3 -> {
                System.out.println("Emp Number 3");
                switch (department) {
                    case "IT" -> System.out.println("IT Department");
                    case "Management" -> System.out.println("Management Department");
                    default -> System.out.println("No department entered");
                }
            }
            default -> System.out.println("Enter correct EmpID");
        }
    }
}
```