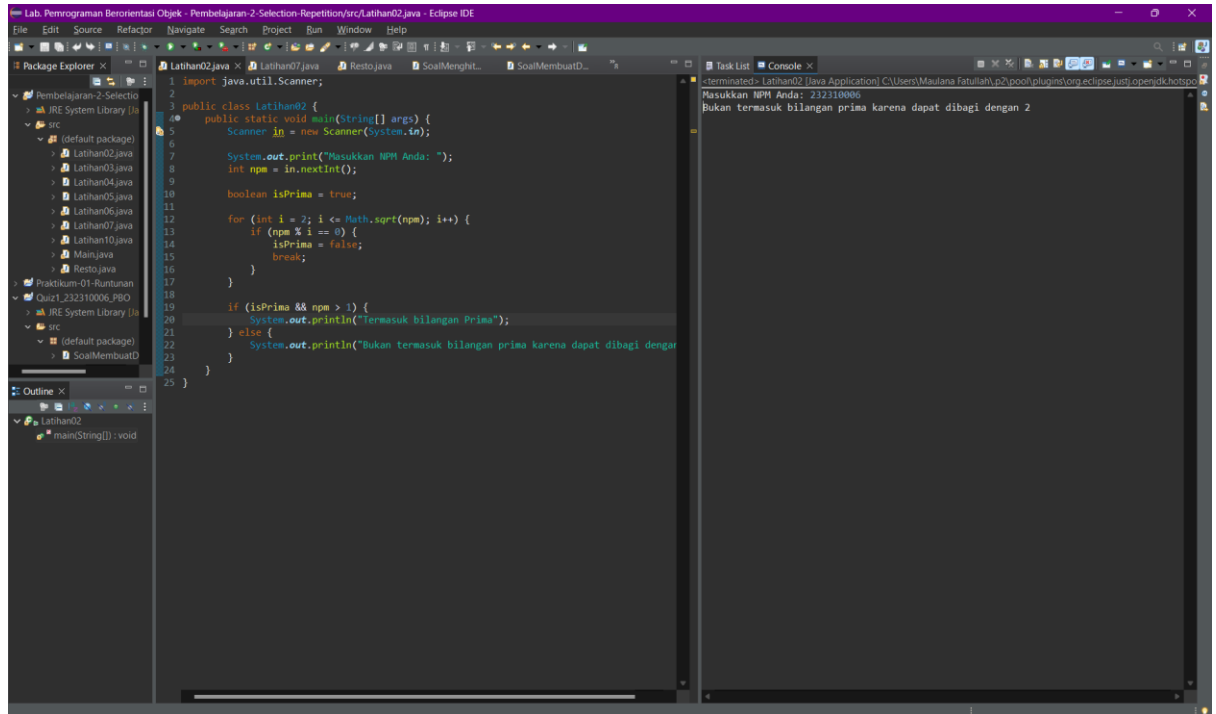


Nama: Maulana Fatullah – 232310006

Kelas: TI-23-KA

Prodi: Teknologi Informasi

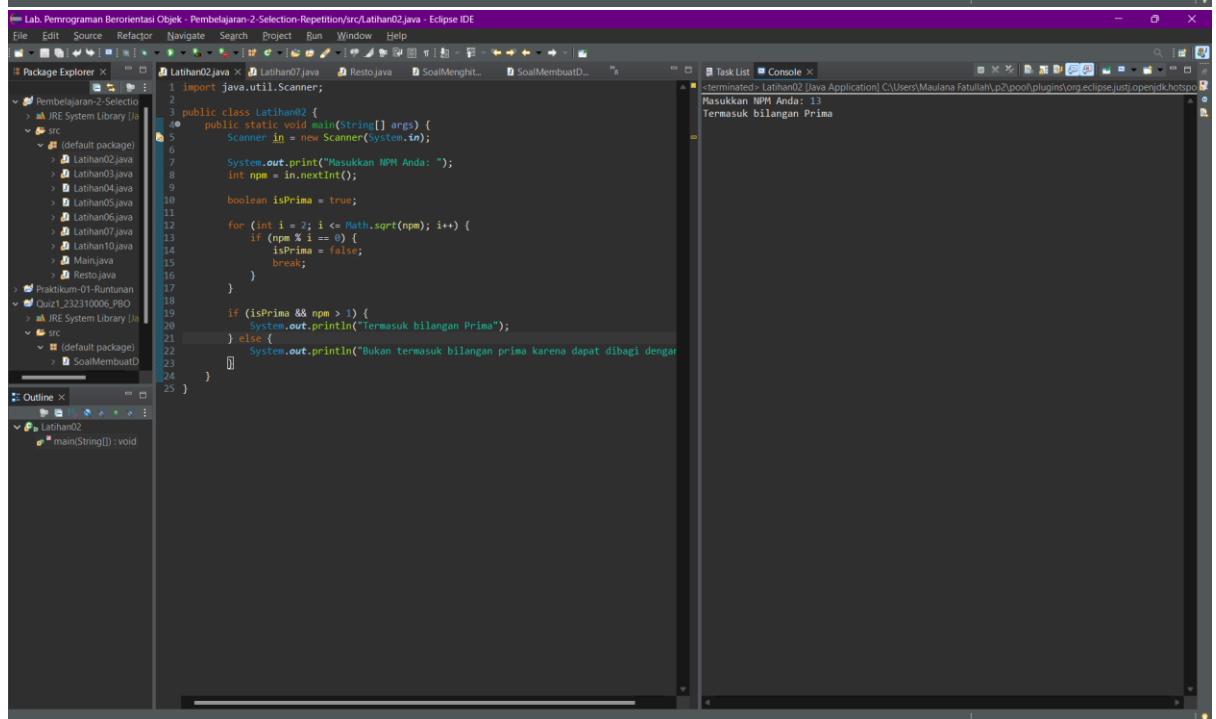
## 1. Latihan02



```
1 import java.util.Scanner;
2
3 public class Latihan02 {
4     public static void main(String[] args) {
5         Scanner in = new Scanner(System.in);
6
7         System.out.print("Masukkan NPM Anda: ");
8         int npm = in.nextInt();
9
10        boolean isPrima = true;
11
12        for (int i = 2; i <= Math.sqrt(npm); i++) {
13            if (npm % i == 0) {
14                isPrima = false;
15                break;
16            }
17        }
18
19        if (isPrima && npm > 1) {
20            System.out.println("Termasuk bilangan Prima");
21        } else {
22            System.out.println("Bukan termasuk bilangan prima karena dapat dibagi dengan");
23        }
24    }
25 }
```

Task List Console

terminated> Latihan02 [Java Application] C:\Users\Maulana Fatullah\p2\plugins\org.eclipse.jdt.ui\openjdk.hotspot...  
Masukkan NPM Anda: 232310006  
Bukan termasuk bilangan prima karena dapat dibagi dengan 2

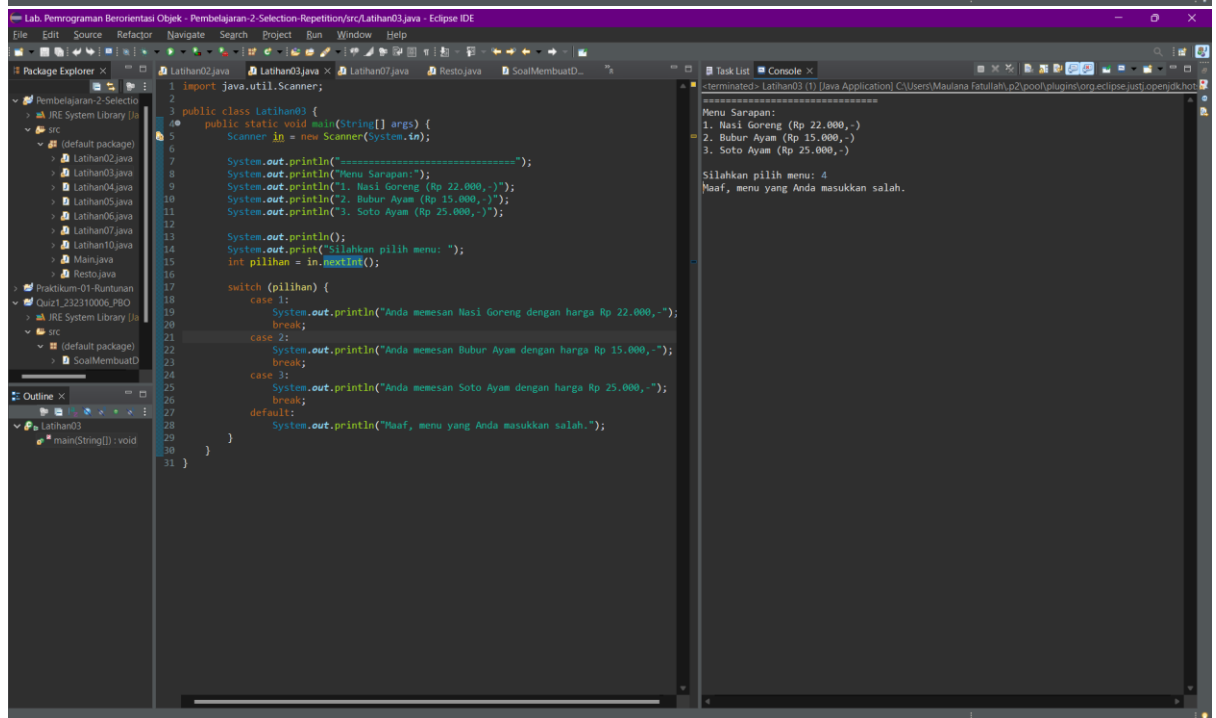
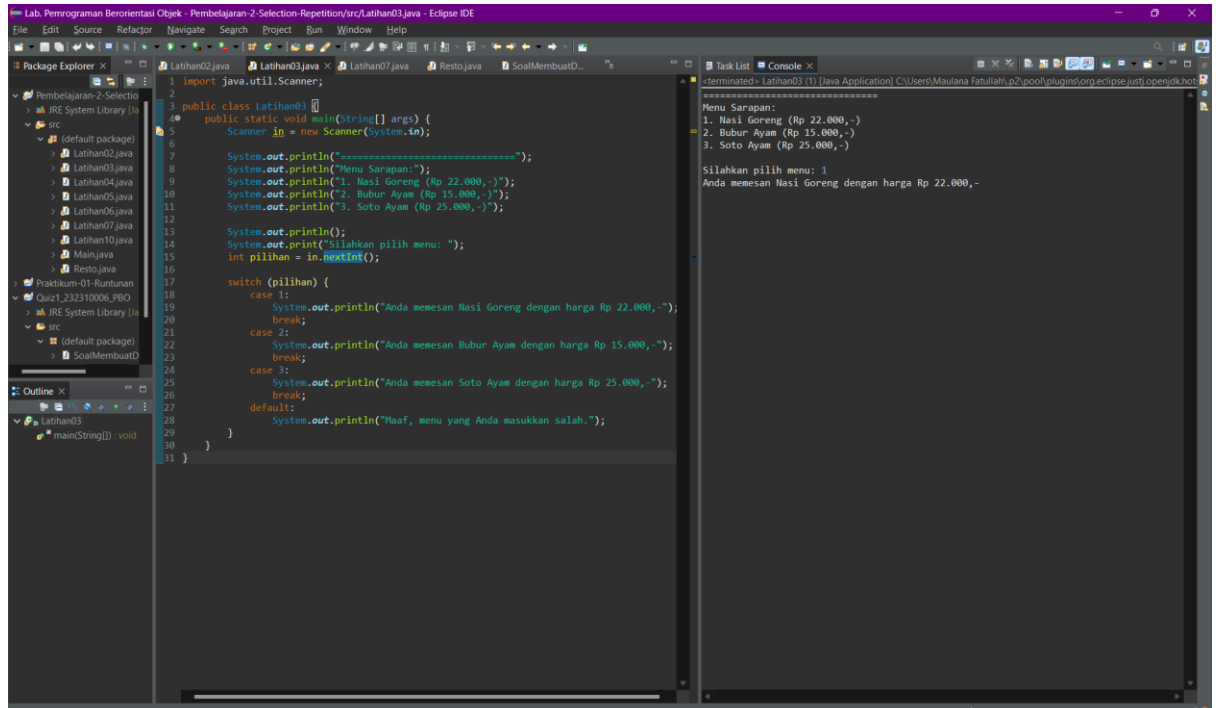


```
1 import java.util.Scanner;
2
3 public class Latihan02 {
4     public static void main(String[] args) {
5         Scanner in = new Scanner(System.in);
6
7         System.out.print("Masukkan NPM Anda: ");
8         int npm = in.nextInt();
9
10        boolean isPrima = true;
11
12        for (int i = 2; i <= Math.sqrt(npm); i++) {
13            if (npm % i == 0) {
14                isPrima = false;
15                break;
16            }
17        }
18
19        if (isPrima && npm > 1) {
20            System.out.println("Termasuk bilangan Prima");
21        } else {
22            System.out.println("Bukan termasuk bilangan prima karena dapat dibagi dengan");
23        }
24    }
25 }
```

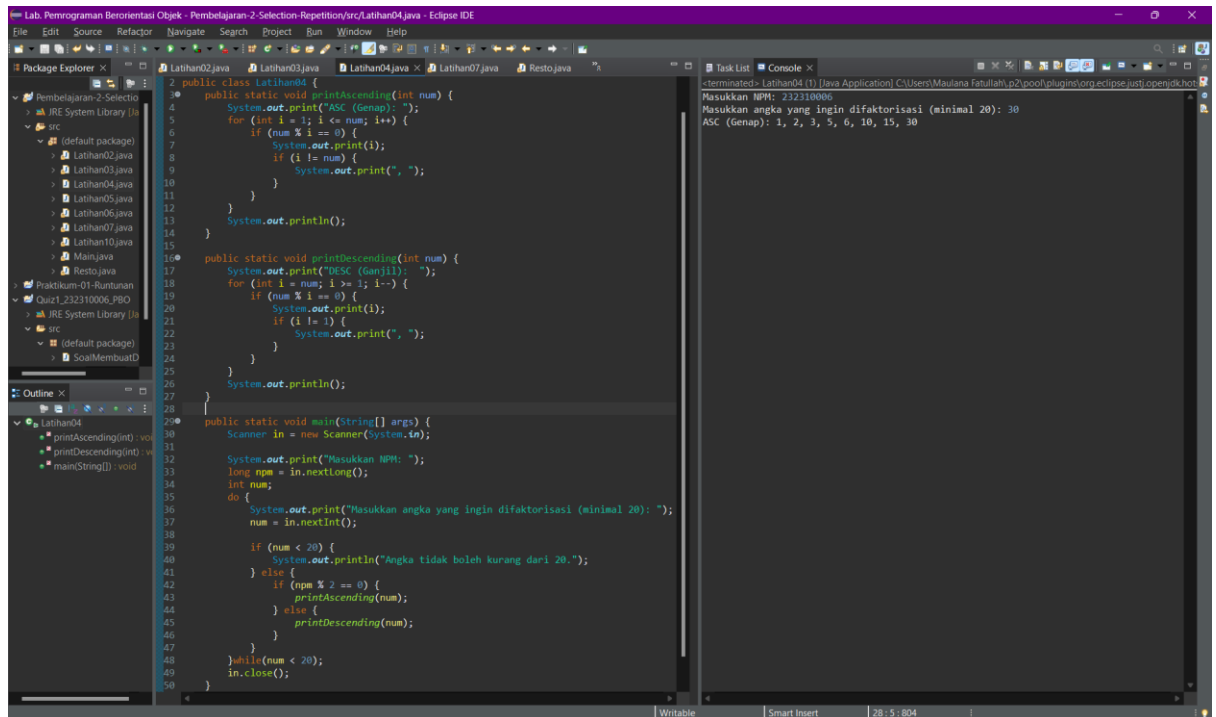
Task List Console

terminated> Latihan02 [Java Application] C:\Users\Maulana Fatullah\p2\plugins\org.eclipse.jdt.ui\openjdk.hotspot...  
Masukkan NPM Anda: 13  
Termasuk bilangan Prima

## 2. Latihan03



### 3. Latihan04



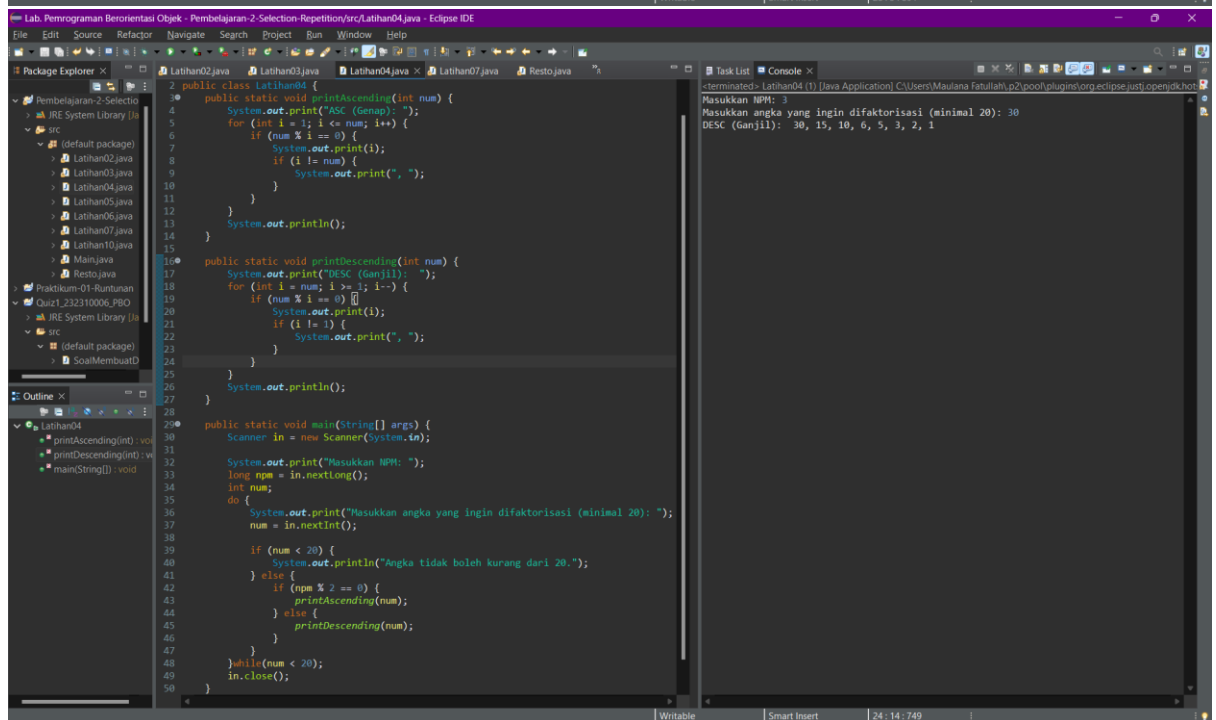
```
Lab. Pemrograman Berorientasi Objek - Pembelajaran-2-Selection-Repetition/src/Latihan04.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer
Pembelajaran-2-Selection-Repetition
src
Latihan02.java
Latihan03.java
Latihan04.java
Latihan05.java
Latihan06.java
Latihan07.java
Latihan10.java
Main.java
Resto.java
Praktikum-01-Runtutan
Quiz1_232310006_PBO
JRE System Library [J]
src
SoalMembuatD

Outline
Latihan04
printAscending(int): void
printDescending(int): void
main(String[]): void

Latihan04.java
1 public class Latihan04 {
2     public static void printAscending(int num) {
3         System.out.print("ASC (Genap): ");
4         for (int i = 1; i <= num; i++) {
5             if (num % i == 0) {
6                 System.out.print(i);
7                 if (i != num) {
8                     System.out.print(", ");
9                 }
10            }
11        }
12        System.out.println();
13    }
14
15    public static void printDescending(int num) {
16        System.out.print("DESC (Ganjil): ");
17        for (int i = num; i >= 1; i--) {
18            if (num % i == 0) {
19                System.out.print(i);
20                if (i != 1) {
21                    System.out.print(", ");
22                }
23            }
24        }
25        System.out.println();
26    }
27
28    public static void main(String[] args) {
29        Scanner in = new Scanner(System.in);
30
31        System.out.print("Masukkan NPM: ");
32        long npm = in.nextLong();
33        int num;
34        do {
35            System.out.print("Masukkan angka yang ingin difaktorisasi (minimal 20): ");
36            num = in.nextInt();
37
38            if (num < 20) {
39                System.out.println("Angka tidak boleh kurang dari 20.");
40            } else {
41                if (npm % 2 == 0) {
42                    printAscending(num);
43                } else {
44                    printDescending(num);
45                }
46            }
47        } while (num < 20);
48        in.close();
49    }
50 }

Task List Console
Terminated: Latihan04 (1) [Java Application] C:\Users\Maulana Fatmahan\p2\pool\plugins\org.eclipse.justi.openjdk.hot
Masukkan NPM: 232310006
Masukkan angka yang ingin difaktorisasi (minimal 20): 30
ASC (Genap): 1, 2, 3, 5, 6, 10, 15, 30
```



```
Lab. Pemrograman Berorientasi Objek - Pembelajaran-2-Selection-Repetition/src/Latihan04.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer
Pembelajaran-2-Selection-Repetition
src
Latihan02.java
Latihan03.java
Latihan04.java
Latihan05.java
Latihan06.java
Latihan07.java
Latihan10.java
Main.java
Resto.java
Praktikum-01-Runtutan
Quiz1_232310006_PBO
JRE System Library [J]
src
SoalMembuatD

Outline
Latihan04
printAscending(int): void
printDescending(int): void
main(String[]): void

Latihan04.java
1 public class Latihan04 {
2     public static void printAscending(int num) {
3         System.out.print("ASC (Genap): ");
4         for (int i = 1; i <= num; i++) {
5             if (num % i == 0) {
6                 System.out.print(i);
7                 if (i != num) {
8                     System.out.print(", ");
9                 }
10            }
11        }
12        System.out.println();
13    }
14
15    public static void printDescending(int num) {
16        System.out.print("DESC (Ganjil): ");
17        for (int i = num; i >= 1; i--) {
18            if (num % i == 0) {
19                System.out.print(i);
20                if (i != 1) {
21                    System.out.print(", ");
22                }
23            }
24        }
25        System.out.println();
26    }
27
28    public static void main(String[] args) {
29        Scanner in = new Scanner(System.in);
30
31        System.out.print("Masukkan NPM: ");
32        long npm = in.nextLong();
33        int num;
34        do {
35            System.out.print("Masukkan angka yang ingin difaktorisasi (minimal 20): ");
36            num = in.nextInt();
37
38            if (num < 20) {
39                System.out.println("Angka tidak boleh kurang dari 20.");
40            } else {
41                if (npm % 2 == 0) {
42                    printAscending(num);
43                } else {
44                    printDescending(num);
45                }
46            }
47        } while (num < 20);
48        in.close();
49    }
50 }

Task List Console
Terminated: Latihan04 (1) [Java Application] C:\Users\Maulana Fatmahan\p2\pool\plugins\org.eclipse.justi.openjdk.hot
Masukkan NPM: 3
Masukkan angka yang ingin difaktorisasi (minimal 20): 30
DESC (Ganjil): 30, 15, 10, 6, 5, 3, 2, 1
```

#### 4. Latihan05

The screenshot shows the Eclipse IDE with the following components:

- Package Explorer:** Shows the project structure with packages like 'IRE System Library' and 'src'.
- Outline:** Shows the class hierarchy, including 'cetakFor(int)', 'cetakWhile(int)', and 'main(String[])'.
- Editor:** Displays the source code of 'Main.java'. The code uses nested loops to print a pattern of asterisks. The pattern is a right-angled triangle of asterisks, with the number of rows determined by the input 'NPM'. The code uses 'System.out.print' for the inner loop and 'System.out.println' for the outer loop.
- Console:** Shows the output of the program. It displays the input 'Masukkan NPM: 7' and the resulting pattern of asterisks, which is a right-angled triangle with 7 rows.

The code in the editor is as follows:

```

46     j = 1;
47     while (j <= n) {
48         System.out.print("* ");
49         j++;
50     }
51     System.out.println();
52     i++;
53 }
54
55 i = n - 1;
56 while (i >= 1) {
57     int j = i;
58     while (j <= n) {
59         System.out.print("* ");
60         j++;
61     }
62     j = 1;
63     while (j < (2 * i - 1)) {
64         System.out.print(" ");
65         j++;
66     }
67     j = 1;
68     while (j <= n) {
69         System.out.print("* ");
70         j++;
71     }
72     System.out.println();
73     i--;
74 }
75
76
77 public static void main(String[] args) {
78     Scanner in = new Scanner(System.in);
79
80     System.out.print("Masukkan NPM: ");
81     long npm = in.nextLong();
82     System.out.print("Masukkan jumlah baris yang ingin dicetak: ");
83     int n = in.nextInt();
84
85     if (npm % 2 == 0) {
86         System.out.println("NPM Genap menggunakan For");
87         cetakFor(n);
88     } else {
89         System.out.println("NPM Ganjil menggunakan while");
90         cetakWhile(n);
91     }
92     in.close();
93 }
94

```

The output in the console is:

```

terminated - Lathian05 (1) [Java Application] C:\Users\Maulana Fahullah p2\p004\plugins\org.eclipse.jdt.ui\openjdkhot
Masukkan NPM: 232310006
Masukkan jumlah baris yang ingin dicetak: 7
NPM Genap menggunakan For
*****
*****
*****
*****
*****
*****
*****

```

The screenshot displays the Eclipse IDE interface with a Java project named 'Latihan05'. The code is as follows:

```

46     j = i;
47     while (j <= n) {
48         System.out.print("** ");
49         j++;
50     }
51     System.out.println();
52     i++;
53 }
54
55 i = n - 1;
56 while (i >= 1) {
57     int j = i;
58     while (j <= n) {
59         System.out.print("** ");
60         j++;
61     }
62     System.out.println();
63     i--;
64 }
65
66 j = i;
67 while (j <= n) {
68     System.out.print("** ");
69     j++;
70 }
71 System.out.println();
72 i--;
73 }
74
75 }
76
77 public static void main(String[] args) {
78     Scanner in = new Scanner(System.in);
79
80     System.out.print("Masukkan NPM: ");
81     long npm = in.nextLong();
82     System.out.print("Masukkan jumlah baris yang ingin dicetak: ");
83     int n = in.nextInt();
84
85     if (npm % 2 == 0) {
86         System.out.println("NPM Genap menggunakan For");
87         cetakFor(n);
88     } else {
89         System.out.println("NPM Ganjil menggunakan While");
90         cetakWhile(n);
91     }
92     in.close();
93 }
94

```

The console output shows the program's execution:

```

<terminated>: Latihan05 (1) [Java Application] C:\Users\Maulana Fatmullah\p2\pooth\plugins\org.eclipse.jdt.ui\opendkhot
Masukkan NPM: 3
Masukkan jumlah baris yang ingin dicetak: 7
NPM Ganjil menggunakan while
*****
*****
*****
*****
*****
*****
*****

```

## 5. Latihan06

```

1 import java.util.Scanner;
2
3 public class Latihan06 {
4     public static void main(String[] args) {
5         Scanner in = new Scanner(System.in);
6         char ulang;
7
8         do {
9             System.out.println("=====");
10            System.out.println("Menu Sarapan:");
11            System.out.println("1. Nasi Goreng (Rp 22.000,-)");
12            System.out.println("2. Bubur Ayam (Rp 15.000,-)");
13            System.out.println("3. Soto Ayam (Rp 25.000,-)");
14            System.out.println();
15
16            System.out.print("Silahkan pilih menu: ");
17            int pilihan = in.nextInt();
18
19            switch (pilihan) {
20                case 1:
21                    System.out.println("Anda memesan Nasi Goreng dengan harga Rp 22.000,-");
22                    break;
23                case 2:
24                    System.out.println("Anda memesan Bubur Ayam dengan harga Rp 15.000,-");
25                    break;
26                case 3:
27                    System.out.println("Anda memesan Soto Ayam dengan harga Rp 25.000,-");
28                    break;
29                default:
30                    System.out.println("Maaf, menu yang Anda masukkan salah.");
31                    break;
32            }
33
34            System.out.print("Apakah anda akan memesan kembali? (y/n): ");
35            ulang = in.next().charAt(0);
36            System.out.println();
37            while (ulang == 'y' || ulang == 'Y');
38
39            System.out.println("Terima kasih telah memesan.");
40
41        }
42    }

```

Console Output:

```

=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 1
Anda memesan Nasi Goreng dengan harga Rp 22.000,-
Apakah anda akan memesan kembali? (y/n): y

=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 2
Anda memesan Bubur Ayam dengan harga Rp 15.000,-
Apakah anda akan memesan kembali? (y/n): y

=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 3
Anda memesan Soto Ayam dengan harga Rp 25.000,-
Apakah anda akan memesan kembali? (y/n): n

Terima kasih telah memesan.

```

## 6. Latihan07

```

1 import java.util.Scanner;
2
3 public class Latihan07 {
4     public static void main(String[] args) {
5         Scanner in = new Scanner(System.in);
6         Resto resto = new Resto();
7         char ulang;
8
9         do {
10            resto.chooseMenu();
11
12            System.out.print("Apakah anda akan memesan kembali? (y/n): ");
13            ulang = in.next().charAt(0);
14            System.out.println();
15            while (ulang == 'y' || ulang == 'Y');
16
17            System.out.println("Terima kasih telah memesan.");
18
19        }
20    }

```

Console Output:

```

=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 1
Anda memesan Nasi Goreng dengan harga Rp 22000
Apakah anda akan memesan kembali? (y/n): y

=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 2
Anda memesan Bubur Ayam dengan harga Rp 15000
Apakah anda akan memesan kembali? (y/n): y

=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 3
Anda memesan Soto Ayam dengan harga Rp 25000
Apakah anda akan memesan kembali? (y/n): n

Terima kasih telah memesan.

```

```

3 public class Resto {
4     private long harga;
5
6     public void chooseMenu() {
7         Scanner in = new Scanner(System.in);
8         int pilihan;
9
10        System.out.println("=====");
11        System.out.println("Menu Sarapan:");
12        System.out.println("1. Nasi Goreng (Rp 22.000,-)");
13        System.out.println("2. Bubur Ayam (Rp 15.000,-)");
14        System.out.println("3. Soto Ayam (Rp 25.000,-)");
15        System.out.println();
16
17        System.out.print("Silahkan pilih menu: ");
18        pilihan = in.nextInt();
19
20        long hargaMenu = getPrices(pilihan);
21
22        switch (pilihan) {
23            case 1:
24                System.out.println("Anda memesan Nasi Goreng dengan harga Rp " + harga);
25                break;
26            case 2:
27                System.out.println("Anda memesan Bubur Ayam dengan harga Rp " + harga);
28                break;
29            case 3:
30                System.out.println("Anda memesan Soto Ayam dengan harga Rp " + harga);
31                break;
32            default:
33                System.out.println("Maaf, menu yang Anda masukkan salah.");
34        }
35    }
36
37    private long getPrices(int pilihanMenu) {
38        switch (pilihanMenu) {
39            case 1:
40                harga = 22000;
41                break;
42            case 2:
43                harga = 15000;
44                break;
45            case 3:
46                harga = 25000;
47                break;
48            default:
49                harga = 0;
50                break;
51        }
52        return harga;
53    }
54 }

```

Console Output:

```

=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 1
Anda memesan Nasi Goreng dengan harga Rp 22000
Apakah anda akan memesan kembali? (y/n): y

=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 2
Anda memesan Bubur Ayam dengan harga Rp 15000
Apakah anda akan memesan kembali? (y/n): y

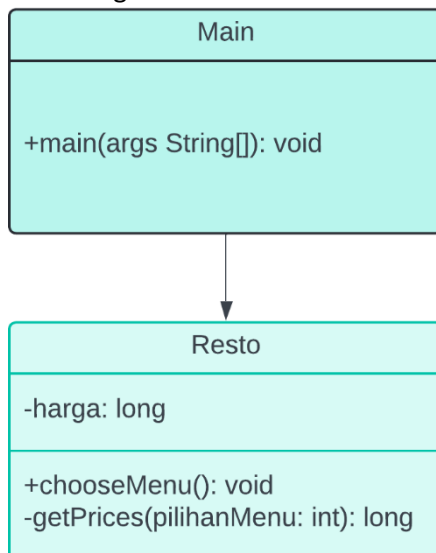
=====
Menu Sarapan:
1. Nasi Goreng (Rp 22.000,-)
2. Bubur Ayam (Rp 15.000,-)
3. Soto Ayam (Rp 25.000,-)

Silahkan pilih menu: 3
Anda memesan Soto Ayam dengan harga Rp 25000
Apakah anda akan memesan kembali? (y/n): n

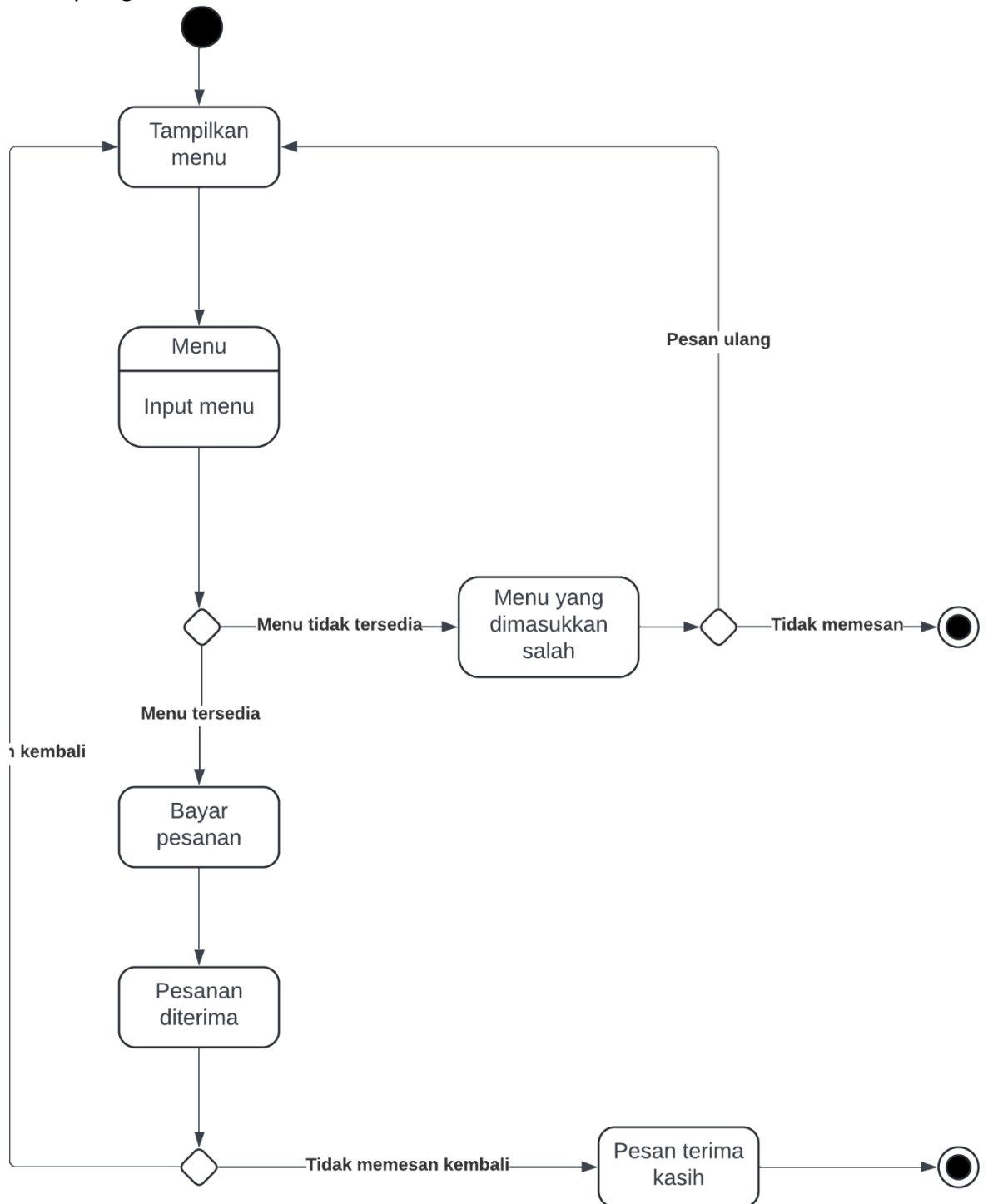
Terima kasih telah memesan.

```

## 7. Class Diagram



## 8. Activity Diagram





## 9. Latihan10

The image displays two screenshots of the Eclipse IDE, showing the development of a Java application for an ATM simulation. The top screenshot shows the initial code, and the bottom screenshot shows the code after adding currency formatting.

**Top Screenshot (Initial Code):**

```

1  package Latihan10;
2  import java.util.Scanner;
3
4  public class Latihan10 {
5      final String PIN = "123456789";
6      final String nama = "Maulana Fatullah";
7      int percobaan = 1;
8      String inputPIN;
9      long saldo = 10000000;
10     boolean isAuthenticated = false;
11
12     while (!isAuthenticated) {
13         System.out.print("Masukkan PIN Anda: ");
14         inputPIN = in.nextLine();
15
16         if (inputPIN.equals(PIN)) {
17             isAuthenticated = true;
18             System.out.println("Selamat datang, " + nama + "!");
19         } else {
20             if (percobaan == 3) {
21                 System.out.println("Kartu anda terblokir karena salah memasukkan PIN sebanyak 3 kali");
22                 return;
23             }
24             System.out.println("PIN salah. Silakan coba lagi.");
25             System.out.println("Terlisa " + (3 - percobaan) + " kali percobaan.");
26             percobaan++;
27         }
28     }
29
30     int pilihan;
31     do {
32         System.out.println("\nMenu:");
33         System.out.println("1. Lihat Saldo");
34         System.out.println("2. Setor Tunai");
35         System.out.println("3. Tarik Tunai");
36         System.out.println("4. Keluar");
37         System.out.print("Silahkan pilih menu: ");
38         pilihan = in.nextInt();
39
40         switch (pilihan) {
41             case 1:
42                 System.out.println("Saldo Anda: Rp " + saldo);
43                 break;
44             case 2:
45                 System.out.print("Masukkan jumlah setor tunai: Rp ");
46                 double setor = in.nextDouble();
47                 saldo += setor;
48                 System.out.println("Setoran berhasil. Saldo Anda sekarang: Rp " + saldo);
49                 break;
50             case 3:
51                 System.out.print("Masukkan jumlah tarik tunai: Rp ");
52                 double tarik = in.nextDouble();
53                 if (tarik <= saldo) {
54                     saldo -= tarik;
55                     System.out.println("Tarik tunai berhasil. Saldo Anda sekarang: Rp " + saldo);
56                 } else {
57                     System.out.println("Saldo tidak cukup.");
58                 }
59                 break;
60             case 4:
61                 System.out.println("Terima kasih telah menggunakan ATM.");
62                 break;
63             default:
64                 System.out.println("Pilihan tidak valid. Silakan coba lagi.");
65         }
66     } while (pilihan != 4);
67 }

```

**Bottom Screenshot (Code with Currency Formatting):**

```

1  package Latihan10;
2  import java.util.Scanner;
3
4  public class Latihan10 {
5      final String PIN = "123456789";
6      final String nama = "Maulana Fatullah";
7      int percobaan = 1;
8      String inputPIN;
9      long saldo = 10000000;
10     boolean isAuthenticated = false;
11
12     while (!isAuthenticated) {
13         System.out.print("Masukkan PIN Anda: ");
14         inputPIN = in.nextLine();
15
16         if (inputPIN.equals(PIN)) {
17             isAuthenticated = true;
18             System.out.println("Selamat datang, " + nama + "!");
19         } else {
20             if (percobaan == 3) {
21                 System.out.println("Kartu anda terblokir karena salah memasukkan PIN sebanyak 3 kali");
22                 return;
23             }
24             System.out.println("PIN salah. Silakan coba lagi.");
25             System.out.println("Terlisa " + (3 - percobaan) + " kali percobaan.");
26             percobaan++;
27         }
28     }
29
30     int pilihan;
31     do {
32         System.out.println("\nMenu:");
33         System.out.println("1. Lihat Saldo");
34         System.out.println("2. Setor Tunai");
35         System.out.println("3. Tarik Tunai");
36         System.out.println("4. Keluar");
37         System.out.print("Silahkan pilih menu: ");
38         pilihan = in.nextInt();
39
40         DecimalFormat currencyFormat = new DecimalFormat("Rp #,###");
41
42         switch (pilihan) {
43             case 1:
44                 System.out.println("Saldo Anda: Rp " + currencyFormat.format(saldo));
45                 break;
46             case 2:
47                 System.out.print("Masukkan jumlah setor tunai: Rp ");
48                 double setor = in.nextDouble();
49                 saldo += setor;
50                 System.out.println("Setoran berhasil. Saldo Anda sekarang: Rp " + currencyFormat.format(saldo));
51                 break;
52             case 3:
53                 System.out.print("Masukkan jumlah tarik tunai: Rp ");
54                 double tarik = in.nextDouble();
55                 if (tarik <= saldo) {
56                     saldo -= tarik;
57                     System.out.println("Tarik tunai berhasil. Saldo Anda sekarang: Rp " + currencyFormat.format(saldo));
58                 } else {
59                     System.out.println("Saldo tidak cukup.");
60                 }
61                 break;
62             case 4:
63                 System.out.println("Terima kasih telah menggunakan ATM.");
64                 break;
65             default:
66                 System.out.println("Pilihan tidak valid. Silakan coba lagi.");
67         }
68     } while (pilihan != 4);
69 }

```

The bottom screenshot also shows the console output of the program, which includes the PIN authentication steps and the menu-driven operations (Lihat Saldo, Setor Tunai, Tarik Tunai, and Keluar) with the corresponding balance updates and currency formatting.