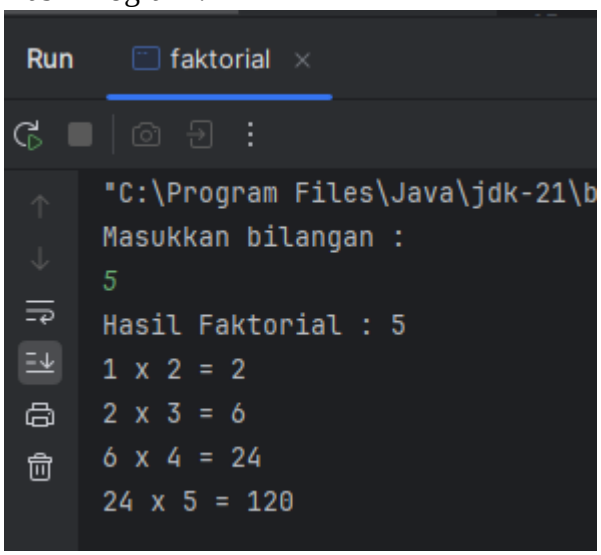
Mata Kuliah : PBO – TI – S1
Pertemuan : 6
NIM : A11.2022.14532
Nama : Najma Aura Dias Prameswari

1. Tugas 1 : Menghitung factorial
   Hasil Program :

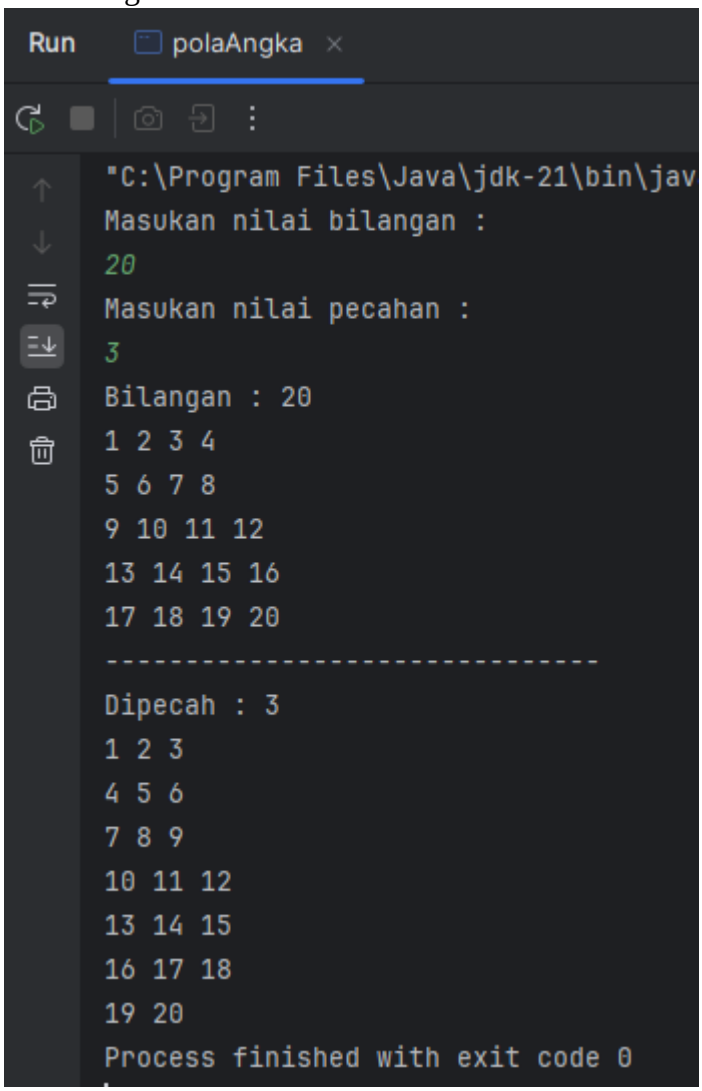


   Code Program :

faktorial.java

```java
//praktik 5 soal no 1 :
import java.util.Scanner;
public class faktorial {
    public static void main(String[]args)
    {
        Scanner input = new Scanner(System.in);
        System.out.println("Masukkan bilangan : ");
        int bilangan = input.nextInt();

        int hasil = 1;
        System.out.println("Hasil Faktorial : "+bilangan);
        for (int i = 1; i <= bilangan; i++)
        //memulai loop dari 1 sampai ke bilangan yang dimasukkan tadi
        {
            hasil *= i;
            //mengalikan nilai hasil dengan nilai i pada setiap iterasi, lalu akan menghit
            //dari angkan yang dimasukkan tadi
            if (i < bilangan)
            //memeriksa apakah iterasi saat ini kurang dari bilangan yang dimasukkan tadi
            {
                System.out.println(hasil + " x " + (i + 1) + " = " + (hasil * (i + 1)) );
            //mencetak langkah perhitungan faktorial satu per satu
            }
        }
        input.close();
    }
}
```

2. Tugas 2 : Membuat pola angka
   Hasil Program :

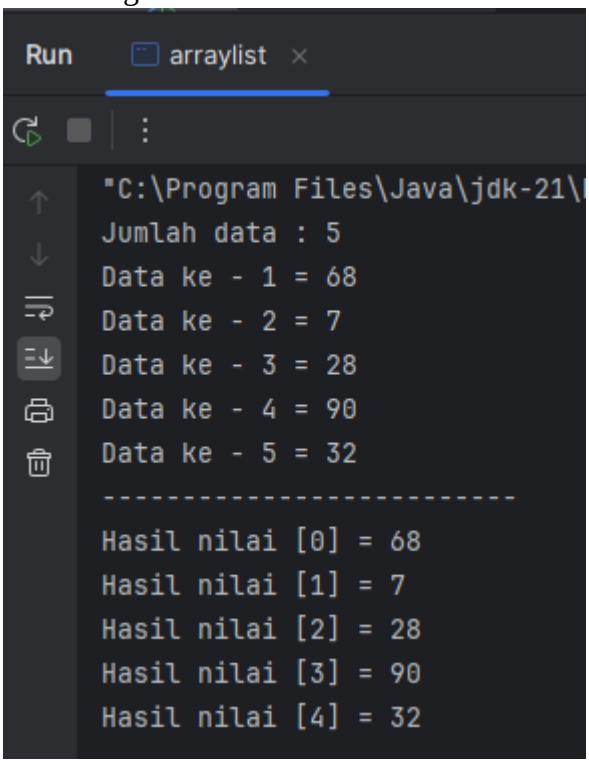


   Code Program :

```java
import java.util.Scanner;
public class polaAngka {
    public static void main(String[]args)
    {

        int angka = 4;

        Scanner input = new Scanner(System.in);
        System.out.println("Masukan nilai bilangan : ");
        int bil = input.nextInt();
        System.out.println("Masukan nilai pecahan : ");
        int pecahan = input.nextInt();
        input.close();

        if (pecahan <= bil)
        {
            System.out.println("Bilangan : "+bil);
            int counter = 0;
            for (int i = 1; i <= bil; i++)
            {
                System.out.print(i + " ");
                counter++;
                if (counter == angka)
                {
                    System.out.println();
                    counter = 0;
                }
            }
            System.out.println("------------------------------");
            System.out.println("Dipecah : "+pecahan);
            for (int i = 1; i <=bil ; i++)
            {
                System.out.print(i + " ");
                if (i % pecahan == 0)
                {
                    System.out.println();

                }
            }
        }
        else {
            System.out.print("Nilai pecahan tidak boleh melebihi nilai bilangan");
        }
    }
}
```

3. Tugas 3 : Single array

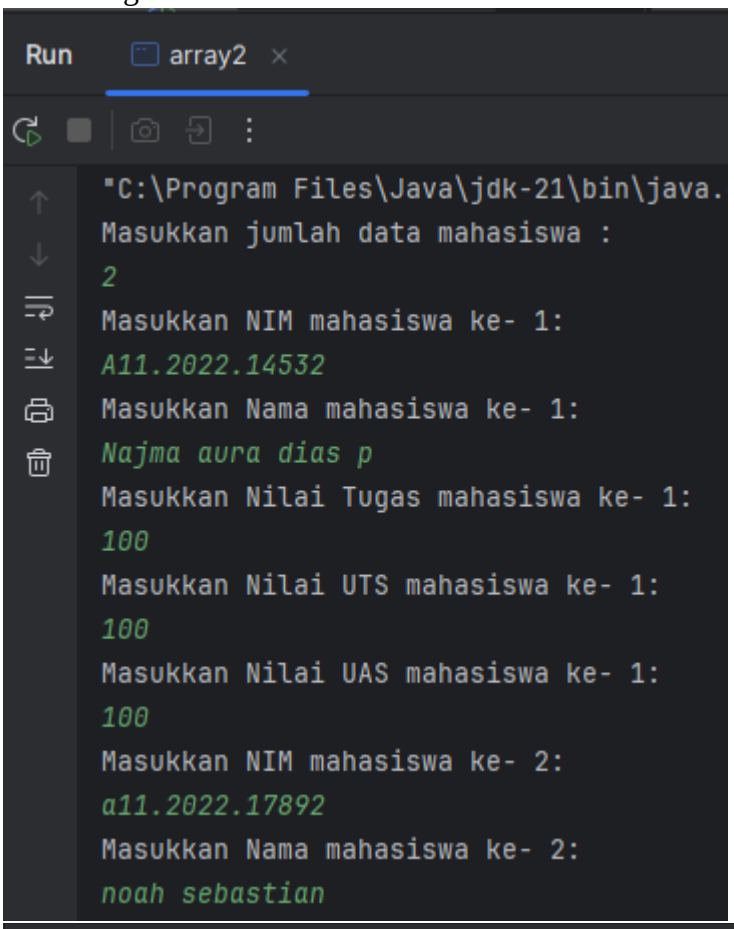
Hasil Program :

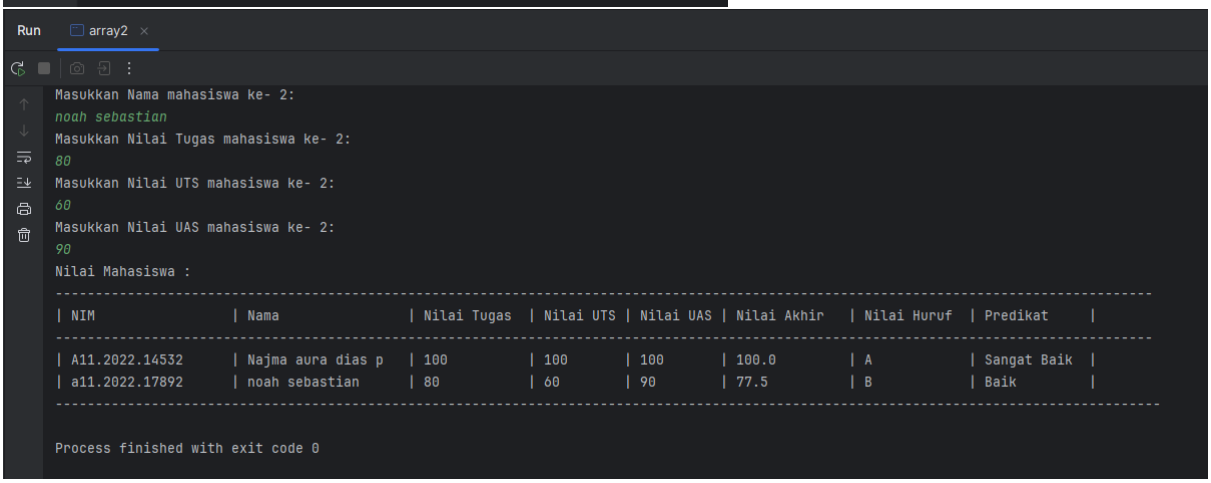


Code Program :

```java
public class arraylist {
    public static void main(String[]args)
    {
        int [] x = new int[5];
        x[0] = 68;
        x[1] = 7;
        x[2] = 28;
        x[3] = 90;
        x[4] = 32;

        System.out.println("Jumlah data : "+x.length);
        for (int i = 0; i <x.length; i++)
        {
            System.out.println("Data ke - "+(i+1)+ " = " + x[i]);
        }
        System.out.println("--------------------------");
        for (int i = 0; i< x.length;i++)
        {
            System.out.println("Hasil nilai [" + i+ "] = "+x[i]);
        }
    }
}
```

4. Tugas 4 : Menampilkan data daftar nilai
   Hasil Program :





   Code Program :

array2.java

```java
import java.util.Scanner;
public class array2 {
    public static void main(String[]args)
    {
        Scanner input = new Scanner(System.in);

        System.out.println("Masukkan jumlah data mahasiswa : ");
        int jumlahdata = input.nextInt();
        input.nextLine();

        Mahasiswa[] mahasiswas = new Mahasiswa[jumlahdata];
        for (int i = 0; i <jumlahdata; i++)
        {
            System.out.println("Masukkan NIM mahasiswa ke- "+(i+1)+ ": ");
            String nim = input.nextLine();

            System.out.println("Masukkan Nama mahasiswa ke- "+(i+1)+ ": ");
            String nama = input.nextLine();

            System.out.println("Masukkan Nilai Tugas mahasiswa ke- "+(i+1)+ ": ");
            int nilaitugas = input.nextInt();

            System.out.println("Masukkan Nilai UTS mahasiswa ke- "+(i+1)+ ": ");
            int nilaiuts = input.nextInt();

            System.out.println("Masukkan Nilai UAS mahasiswa ke- "+(i+1)+ ": ");
            int nilaiuas = input.nextInt();
```

array2.java

```java
public class array2 {
    public static void main(String[]args)
            input.nextLine();
            mahasiswas[i] = new Mahasiswa(nim,nama,nilaitugas,nilaiuts,nilaiuas);
        }

        System.out.println("Nilai Mahasiswa : ");
        System.out.println("-----------------------------------------------------------------------------------------------------------------------");
        System.out.printf("| %-20s| %-20s| %-13s| %-10s| %-10s| %-14s| %-13s| %-13s|\n",
                "NIM", "Nama", "Nilai Tugas", "Nilai UTS", "Nilai UAS", "Nilai Akhir", "Nilai Huruf", "Predikat");


        System.out.println("-----------------------------------------------------------------------------------------------------------------------");
        for (int i = 0; i<jumlahdata; i++)
            {
                System.out.printf("| %-20s| %-20s| %-13d| %-10d| %-10d| %-14s| %-13s| %-13s|\n",
                        mahasiswas[i].getnim(), mahasiswas[i].getnama(), mahasiswas[i].getnilaitugas(),
                        mahasiswas[i].getnilaiuts(), mahasiswas[i].getnilaiuas(), mahasiswas[i].hitungnilaiakhir(),
                        mahasiswas[i].hitungnilaihuruf(), mahasiswas[i].hitungpredikat());
            }
        System.out.println("-----------------------------------------------------------------------------------------------------------------------");
    }
}
```

array2.java

```java
class Mahasiswa  3 usages
{
    private String nim;  2 usages
    private String nama;  2 usages
    private int nilaitugas;  3 usages
    private int nilaiuts;  3 usages
    private int nilaiuas;  3 usages

    public Mahasiswa(String nim, String nama,  1 usage
                     int nilaitugas, int nilaiuts, int nilaiuas)
    {
        this.nim = nim;
        this.nama = nama;
        this.nilaitugas = nilaitugas;
        this.nilaiuts = nilaiuts;
        this.nilaiuas = nilaiuas;
    }

    public String getnim()  1 usage
    {return  nim;}

    public String getnama()  1 usage
    {return  nama;}

    public int getnilaitugas()  1 usage
    {return  nilaitugas;}
```

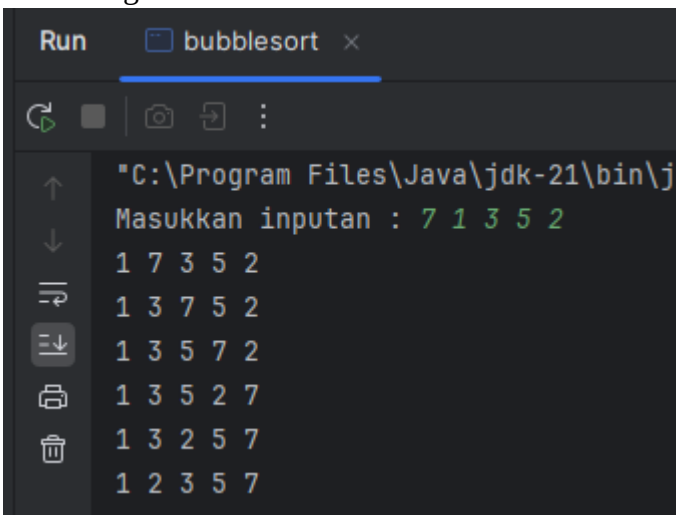
array2.java

```java
class Mahasiswa  3 usages
    public int getnilaiuts()  1 usage
    {return  nilaiuts;}

    public int getnilaiuas()  1 usage
    {return  nilaiuas;}

    public double hitungnilaiakhir() { return (nilaitugas *0.20) + (nilaiuts * 0.35) + (nilaiuas * 0.45); }

    public String hitungnilaihuruf()  2 usages
    {
        double nilai = hitungnilaiakhir();
        if (nilai >= 85 && nilai <= 100)
        {
            return "A";
        } else if (nilai >= 70 && nilai <=84) {
            return "B";
        } else if (nilai >=60 && nilai <=69) {
            return "C";
        } else if (nilai >=40 && nilai <=59) {
            return "D";
        }else {
            return "E";
        }
    }
```

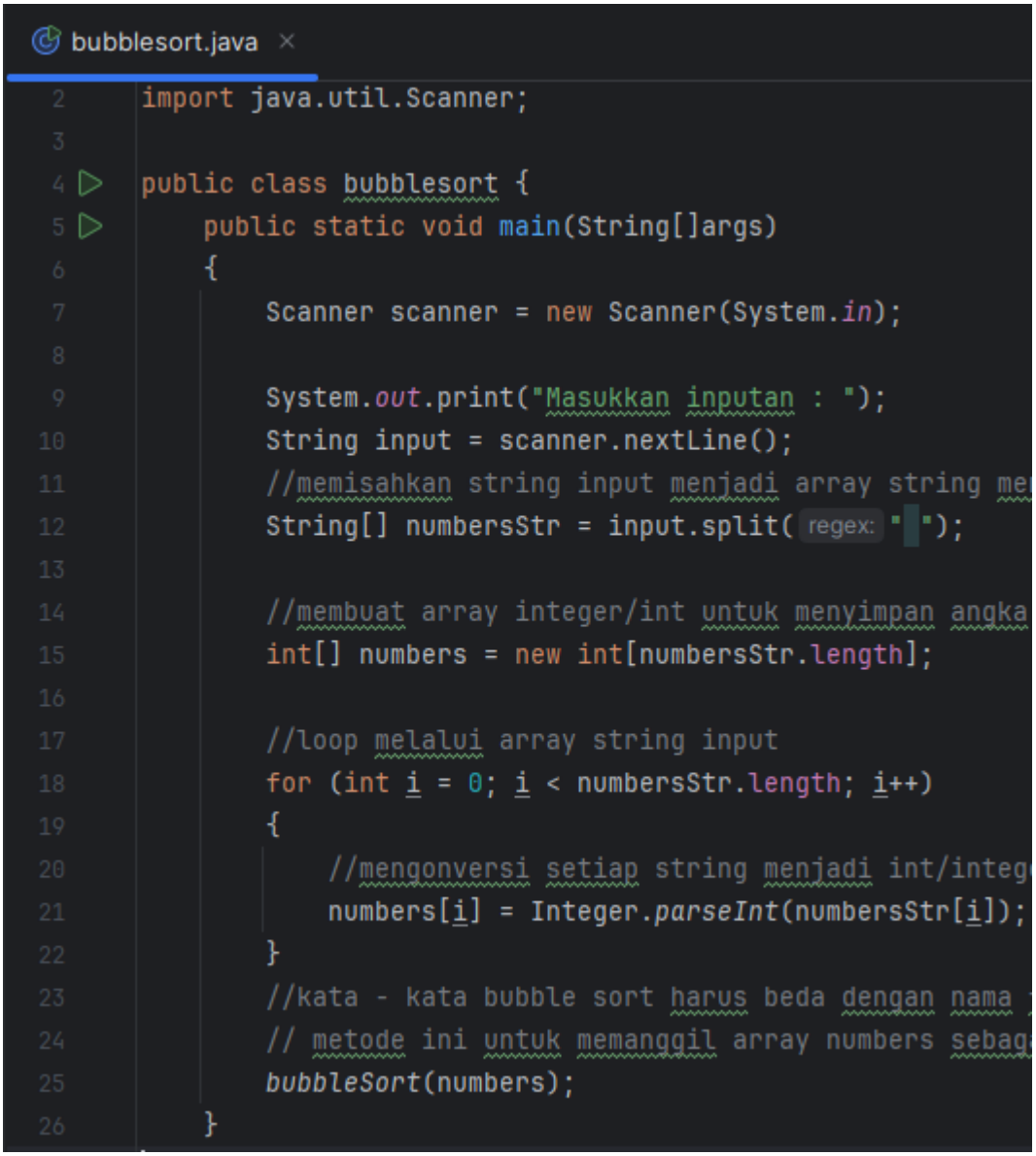
```
109     public String hitungpredikat()  1 usage
110     {
111         String nilaihuruf = hitungnilaihuruf();
112         switch (nilaihuruf)
113         {
114             case "A":
115                 return "Sangat Baik";
116             case "B":
117                 return "Baik";
118             case "C":
119                 return "Cukup";
120             case "D":
121                 return "Kurang Baik";
122             default:
123                 return "Sangat Kurang Baik";
124         }
125     }
126
127 }
```

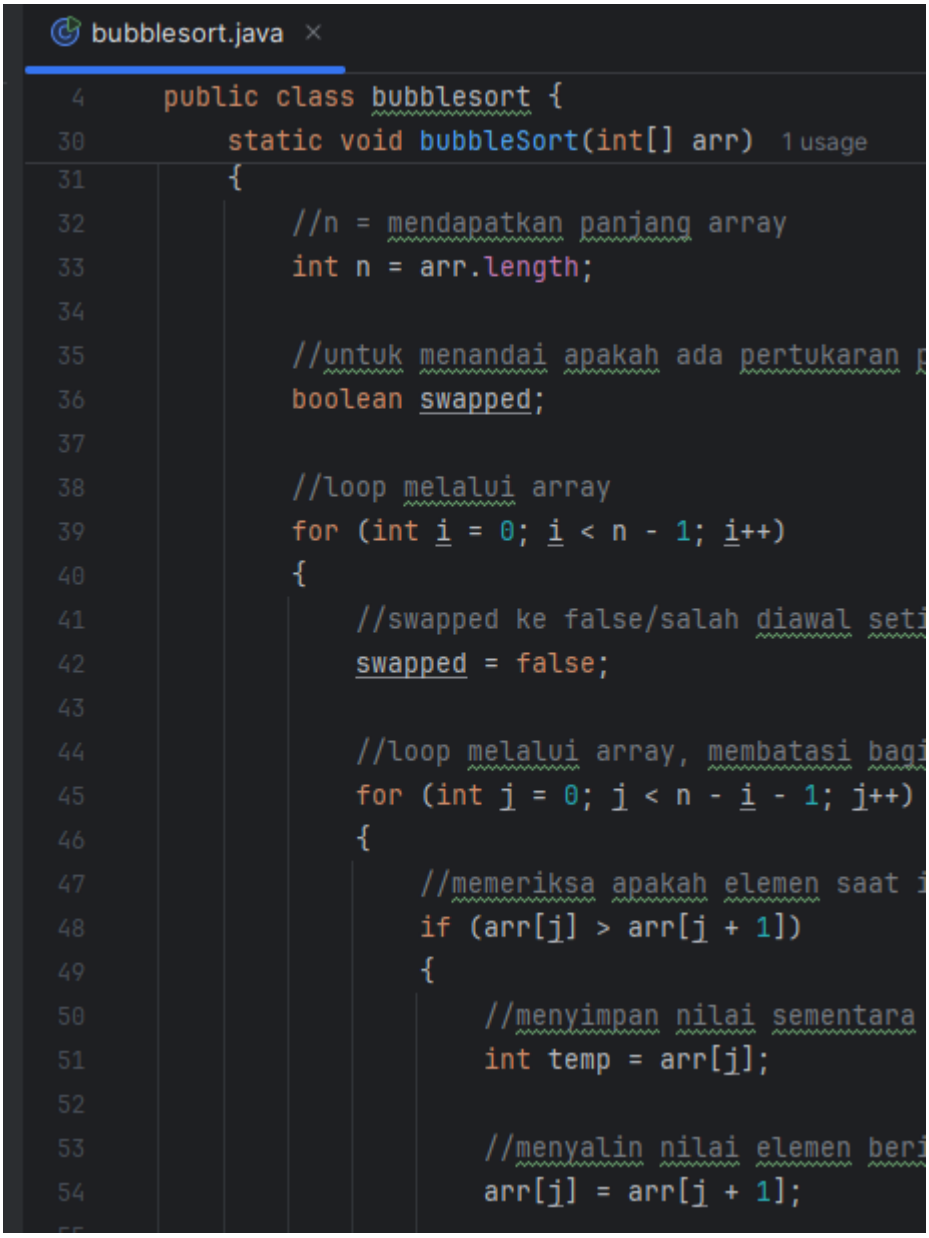
5. Tugas 5 : Membuat sorting java
   A. Bubble sort

   Hasil Program :



   Code Program :


bubblesort.java
import java.util.Scanner;
public class bubblesort {
public static void main(String[]args)
{
Scanner scanner = new Scanner(System.in);
System.out.print("Masukkan inputan : ");
String input = scanner.nextLine();
//memisahkan string input menjadi array string me
String[] numbersStr = input.split(regex: " ");
//membuat array integer/int untuk menyimpan angka
int[] numbers = new int[numbersStr.length];
//loop melalui array string input
for (int i = 0; i < numbersStr.length; i++)
{
//mengonversi setiap string menjadi int/integ
numbers[i] = Integer.parseInt(numbersStr[i]);
}
//kata - kata bubble sort harus beda dengan nama
// metode ini untuk memanggil array numbers sebag
bubbleSort(numbers);
}


bubblesort.java
4 public class bubblesort {
30 static void bubbleSort(int[] arr) 1 usage
31 {
32 //n = mendapatkan panjang array
33 int n = arr.length;
34
35 //untuk menandai apakah ada pertukaran p
36 boolean swapped;
37
38 //loop melalui array
39 for (int i = 0; i < n - 1; i++)
40 {
41 //swapped ke false/salah diawal seti
42 swapped = false;
43
44 //loop melalui array, membatasi bagi
45 for (int j = 0; j < n - i - 1; j++)
46 {
47 //memeriksa apakah elemen saat i
48 if (arr[j] > arr[j + 1])
49 {
50 //menyimpan nilai sementara
51 int temp = arr[j];
52
53 //menyalin nilai elemen beri
54 arr[j] = arr[j + 1];

bubblesort.java

```
4   public class bubblesort {
30      static void bubbleSort(int[] arr)
57                      arr[j + 1] = temp;
58
59                      //memanggil metode
60                      printArray(arr);
61
62                      //menandai bahwa ad
63                      swapped = true;
64                  }
65              }
66              //memeriksa apakah ada pert
67              //jika tidak, array sudah t
68              if (!swapped)
69              {
70                  break;
71              }
72          }
73      }
```

```
76  @   static void printArray(int[] arr)  1 us
77      {
78          //loop melalui arrat
79          for (int num : arr)
80          {
81              //mencetak setiap elemen
82              System.out.print(num + " ");
83          }
84          //mencetak baris baru setelah men
85          System.out.println();
86      }
87  }
```

B. Quick sort

Hasil Program :

```
Run   quicksort
"C:\Program Files\Java
Array sebelumnya :
7 1 3 5 2
Array terurut :
1 2 3 5 7
```

Code Program :

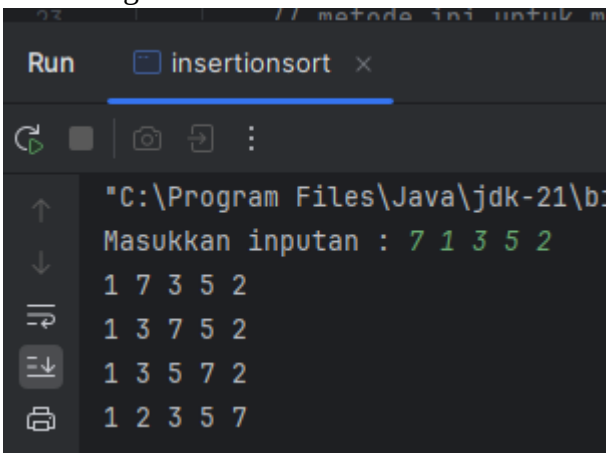
```java
public class quicksort {
    public static void main(String[]args)
    {
        int arr[] = {7,1,3,5,2};
        System.out.println("Array sebelumnya : ");
        printArray(arr);
        quickSort(arr, low: 0,  high: arr.length-1);
        System.out.println("Array terurut : ");
        printArray(arr);
    }

    public static void quickSort(int[] arr, int low, int high)
    {
        if (low < high)
        {
            int pi = partition(arr, low, high);
            quickSort(arr, low,  high: pi - 1);
            quickSort(arr,  low: pi + 1, high);
        }
    }
```

```java
    public static int partition(int[] arr, int low, int high)
    {
        int pivot = arr[high];
        int i = (low - 1);

        //loop melalui sub array
        for (int j = low; j < high; j++)
        {
            if (arr[j] < pivot)
            {
                i++;
                int temp = arr[i];
                arr[i] = arr[j];
                arr[j] = temp;
            }
        }

        int temp = arr[i + 1];
        arr[i + 1] = arr[high];
        arr[high] = temp;
        return i + 1;
    }
```

```
47 @    public static void printArray(int[] arr)
48      {
49          //loop melalui array
50          for (int i = 0; i < arr.length; i++)
51          {
52              System.out.print(arr[i] + " ");
53          }
54          System.out.println();
55      }
56
57  }
```

C. Insertion sort

Hasil Program :



Code Program :

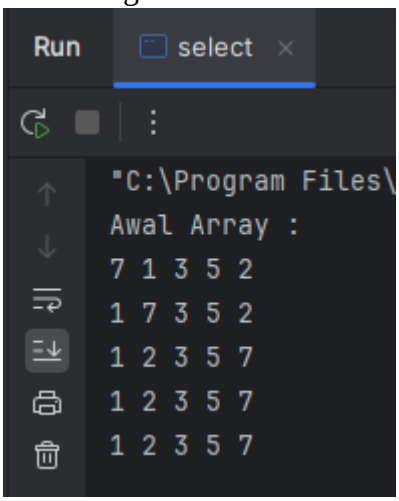
insertionsort.java × insert.java

```java
import java.util.Scanner;
public class insertionsort {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Masukkan inputan : ");
        String input = scanner.nextLine();

        //memisahkan string input menjadi array string meng
        String[] numbersStr = input.split( regex: " ");

        //membuat array integer/int untuk menyimpan angka d
        int[] numbers = new int[numbersStr.length];

        //loop melalui array string input
        for (int i = 0; i < numbersStr.length; i++) {
            //mengonversi setiap string menjadi int/integer
            numbers[i] = Integer.parseInt(numbersStr[i]);
        }
        //kata - kata insertion sort harus beda dengan nama
        // metode ini untuk memanggil array sebagai argumen
        insertionSort(numbers);
    }
```

```java
public class insertionsort {
    static void insertionSort(int[] arr)
    {
        //n untuk panjang array
        int n = arr.length;

        //loop melalui array dimulai dari i
        for (int i = 1; i<n; ++i)//
        {
            //menyimpan nilai elemen saat i
            int key = arr[i];

            //mendeklarasikan variabel j un
            int j = i - 1;

            //memeriksa elemen sebelumnya &
            //penempatan yang benar untuk e
            while (j >= 0 && arr[j] > key)
            {
                //memindahkan elemen yang l
                arr[j + 1] = arr[j];

                //memindahkan ke elemen seb
                j = j -1 ;
            }
            //menempatkan elemen saat ini k
            arr[j + 1] = key;
                printArray(arr);
            }
        }

        //mendefinisikan metode printarray u
        static void printArray(int[] arr)
        {
            //loop melalui array
            for (int num : arr)
            {
                //mencetak setiap elemen
                System.out.print(num + " ");
            }
            //mencetak baris baru setelah me
            System.out.println();
        }
    }
```

D. Selection sort

Hasil Program :

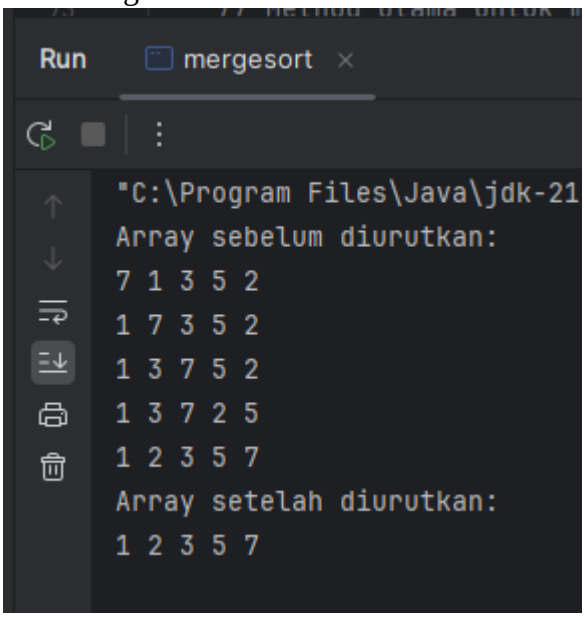


Code Program :

```
public class select {
    public static void main(String[]args)
    {
        int arr[] = {7, 1, 3, 5, 2};
        selection(arr);
    }
    public static void selection(int arr[])
    {
        int sel = arr.length;
        System.out.println("Awal Array : ");
        printarr(arr);
        for (int i = 0; i<sel-1; i++)
        {
            int min = i;
            for (int j = i+1; j<sel; j++)
            {
                if (arr[j] < arr[min])
                {
                    min = j;
                }
            }
            int temp = arr[min];
            arr[min] = arr[i];
            arr[i] = temp;
            printarr(arr);
        }
    }
    public static void printarr(int arr[])
    {
        for (int i = 0; i < arr.length; i++)
        {
            System.out.print(arr[i] + " ");
        }
        System.out.println();
    }
}
```

E. Merge sort

Hasil Program :



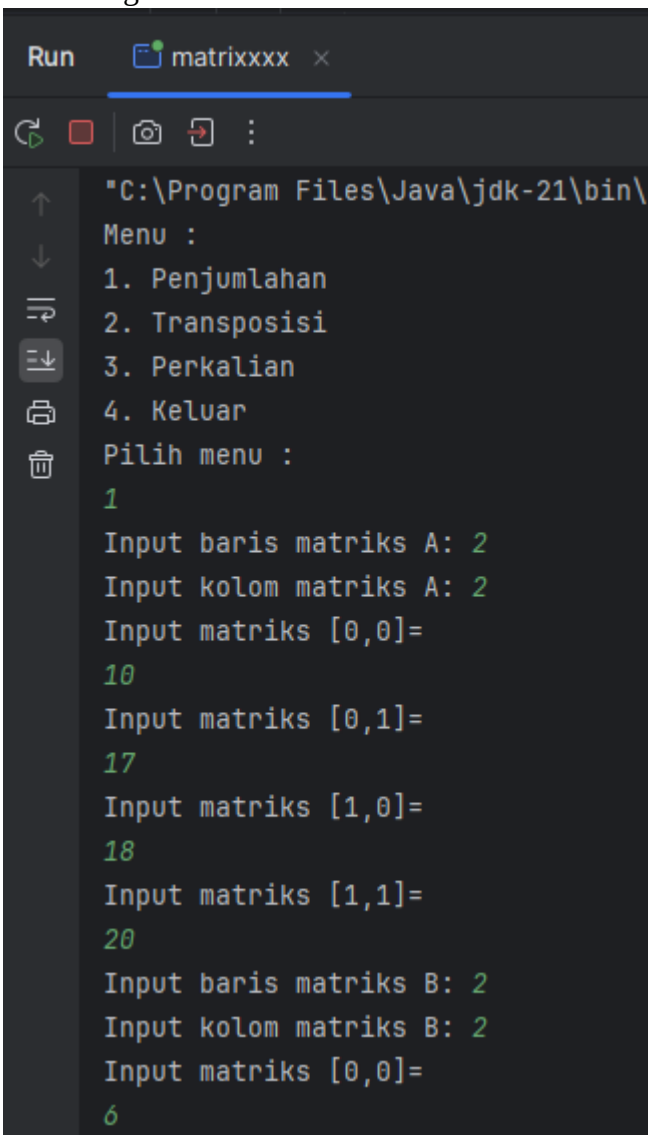
Code Program :

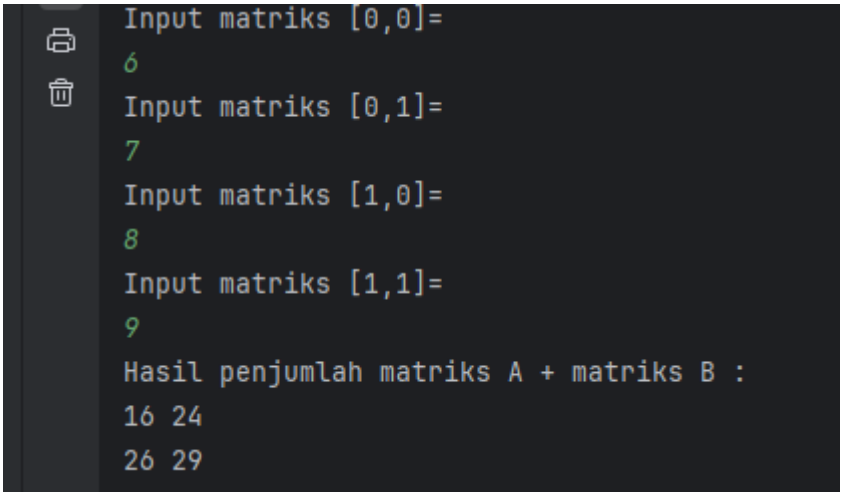
mergesort.java

```java
public class mergesort {
    // Method untuk memisahkan array menjadi dua bagian
    private void merge(int[] arr, int left, int mid, int right) {
        // Hitung panjang array untuk dua bagian
        int n1 = mid - left + 1;
        int n2 = right - mid;

        // Buat array temporari untuk dua bagian
        int[] L = new int[n1];
        int[] R = new int[n2];

        // Salin data ke array temporari L[] dan R[]
        for (int i = 0; i < n1; ++i)
            L[i] = arr[left + i];
        for (int j = 0; j < n2; ++j)
            R[j] = arr[mid + 1 + j];

        // Gabungkan array temporari kembali ke arr[left..right]
        int i = 0, j = 0;
        int k = left;
        while (i < n1 && j < n2) {
            if (L[i] <= R[j]) {
                arr[k] = L[i];
                i++;
            } else {
                arr[k] = R[j];
                j++;
            }
```

```java
            }
            k++;
        }

        // Salin sisa elemen di L[] jika ada
        while (i < n1) {
            arr[k] = L[i];
            i++;
            k++;
        }

        // Salin sisa elemen di R[] jika ada
        while (j < n2) {
            arr[k] = R[j];
            j++;
            k++;
        }
        printArray(arr);
    }

    // Method utama untuk melakukan merge sort
    private void sort(int[] arr, int left, int right) {
        if (left < right) {
            // Temukan titik tengah
            int mid = (left + right) / 2;

            // Panggil sort() untuk bagian kiri array
            sort(arr, left, mid);

            // Panggil sort() untuk bagian kanan array
            sort(arr, left: mid + 1, right);

            // Gabungkan dua bagian yang sudah diurutkan
            merge(arr, left, mid, right);

        }
    }

    // Method untuk mencetak array
    private void printArray(int[] arr) {  3 usages
        for (int i = 0; i < arr.length; ++i)
            System.out.print(arr[i] + " ");
        System.out.println();
    }
```

6. Tugas 6 : Menghitung penjumlahan dan perkalian matriks
   Hasil Program :





Gfds

Code Program :

matrix.java | matrixxxx.java | latihan4.java

```java
import java.util.Scanner;
public class matrixxxx {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        while (true) {
            System.out.println("Menu : ");
            System.out.println("1. Penjumlahan ");
            System.out.println("2. Transposisi ");
            System.out.println("3. Perkalian ");
            System.out.println("4. Keluar ");
            System.out.println("Pilih menu : ");
            int menu = scanner.nextInt();

            switch (menu) {
                case 1:
                    jumlahan(scanner);//penjumlahan
                    break;

                case 2:
                    trans(scanner);//transposisi
                    break;

                case 3:
                    kali(scanner);//perkalian
                    break;
```

```
                case 4:
                    System.out.println("Terima kasih");
                    return;//klo pilih keluar
                default:
                    System.out.println("Pilihan menu tidak ada");
            }
        }
    }//kurung main

    //method input data matriks
    public static int[][] inputdata(int rows, int cols, Scanner scanner) {
        int[][] matrikss = new int[rows][cols];
        for (int i = 0; i < rows; i++) {
            for (int j = 0; j < cols; j++) {
                System.out.println("Input matriks [" + i + "," + j + "]= ");
                matrikss[i][j] = scanner.nextInt();
            }
        }
        return matrikss;
    }
```

```
    public static void resultmatriks(int[][] mattriks) {
        for (int[] row : mattriks) {
            for (int num : row) {
                System.out.print(num + " ");
            }
            System.out.println();
        }
    }
```

```
//perhitungan penjumlahan
public static void jumlahan(Scanner scanner) {  1 usage
    System.out.print("Input baris matriks A: ");
    int barisA = scanner.nextInt();
    System.out.print("Input kolom matriks A: ");
    int kolomA = scanner.nextInt();
    int[][] matriksA = inputdata(barisA, kolomA, scanner);

    System.out.print("Input baris matriks B: ");
    int barisB = scanner.nextInt();
    System.out.print("Input kolom matriks B: ");
    int kolomB = scanner.nextInt();
    int[][] matriksB = inputdata(barisB, kolomB, scanner);

    if (barisA != barisB || kolomA != kolomB) {
        System.out.println("Matriks tidak dapat dijumlahkan. Karena ukurannya tidak sama.");
    } else {
        int[][] sum = addmatriks(matriksA, matriksB);
        System.out.println("Hasil penjumlah matriks A + matriks B : ");
        resultmatriks(sum);
    }
}
```

```java
    public static int[][] addmatriks(int[][] matriksA, int[][] matriksB) {
        int rows = matriksA.length;
        int cols = matriksB.length;
        int[][] hasil = new int[rows][cols];
        for (int i = 0; i < rows; i++) {
            for (int j = 0; j < cols; j++) {
                hasil[i][j] = matriksA[i][j] + matriksB[i][j];
            }
        }
        return hasil;
    }

    //method transposisi
    public static void trans(Scanner scanner) {  1 usage
        System.out.print("Input baris matriks C: ");
        int barisC = scanner.nextInt();
        System.out.print("Input kolom matriks C: ");
        int kolomC = scanner.nextInt();
        int[][] matriksC = inputdata(barisC, kolomC, scanner);

        int[][] transpoA = addtrans(matriksC);
        System.out.println("Hasil transposisi matriks C : ");
        resultmatriks(transpoA);
    }
```

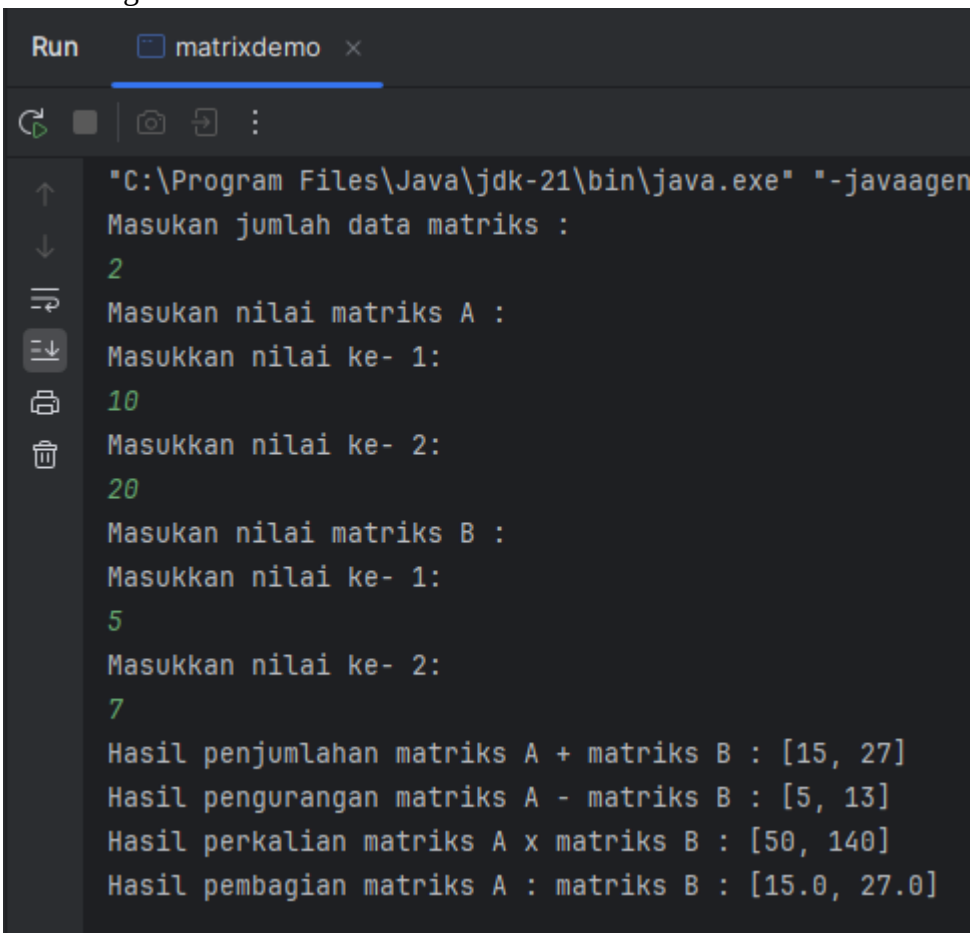
```java
    public static int[][] addtrans(int[][] matriksC) {  1
        int rows = matriksC.length;
        int cols = matriksC[0].length;
        int[][] hasil2 = new int[cols][rows];
        for (int i = 0; i < cols; i++) {
            for (int j = 0; j < rows; j++) {
                hasil2[i][j] = matriksC[i][j];//ditukar
            }
        }
        return hasil2;
    }
```

```java
    public static void kali(Scanner scanner) {  1 usage
        System.out.print("Input baris matriks A: ");
        int barisD = scanner.nextInt();
        System.out.print("Input kolom matriks A: ");
        int kolomD = scanner.nextInt();
        int[][] matriksD = inputdata(barisD, kolomD, scanner);

        System.out.print("Input baris matriks B: ");
        int barisE = scanner.nextInt();
        System.out.print("Input kolom matriks B: ");
        int kolomE = scanner.nextInt();
        int[][] matriksE = inputdata(barisE, kolomE, scanner);

        if (kolomD != barisE) {
            System.out.println("Perkalian matriks tidak dapat terjadi, karena jumlah kolom matriks A " +
                    "tidak sama dengan jumlah baris matriks B");
        } else {
            int[][] kalic = addkali(matriksD, matriksE);
            System.out.println("Hasil perkalian matriks A x matriks B : ");
            resultmatriks(kalic);
        }
    }
```

```java
    public static int[][] addkali(int[][] matriksD, int[][] matriksE) {
        int rowA = matriksD.length;
        int colsA = matriksD[0].length;
        int colB = matriksE[0].length;
        int[][] hasil3 = new int[rowA][colB];
        for (int i = 0; i < rowA; i++) {
            for (int j = 0; j < colB; j++) {
                for (int k = 0; k < colsA; k++) {
                    hasil3[i][j] += matriksD[i][k] * matriksE[k][j];
                }
            }
        }
        return hasil3;
    }

}//kurung class
```

7. Tugas 7 : Membuat array list demo

Hasil Program :



Code Program :

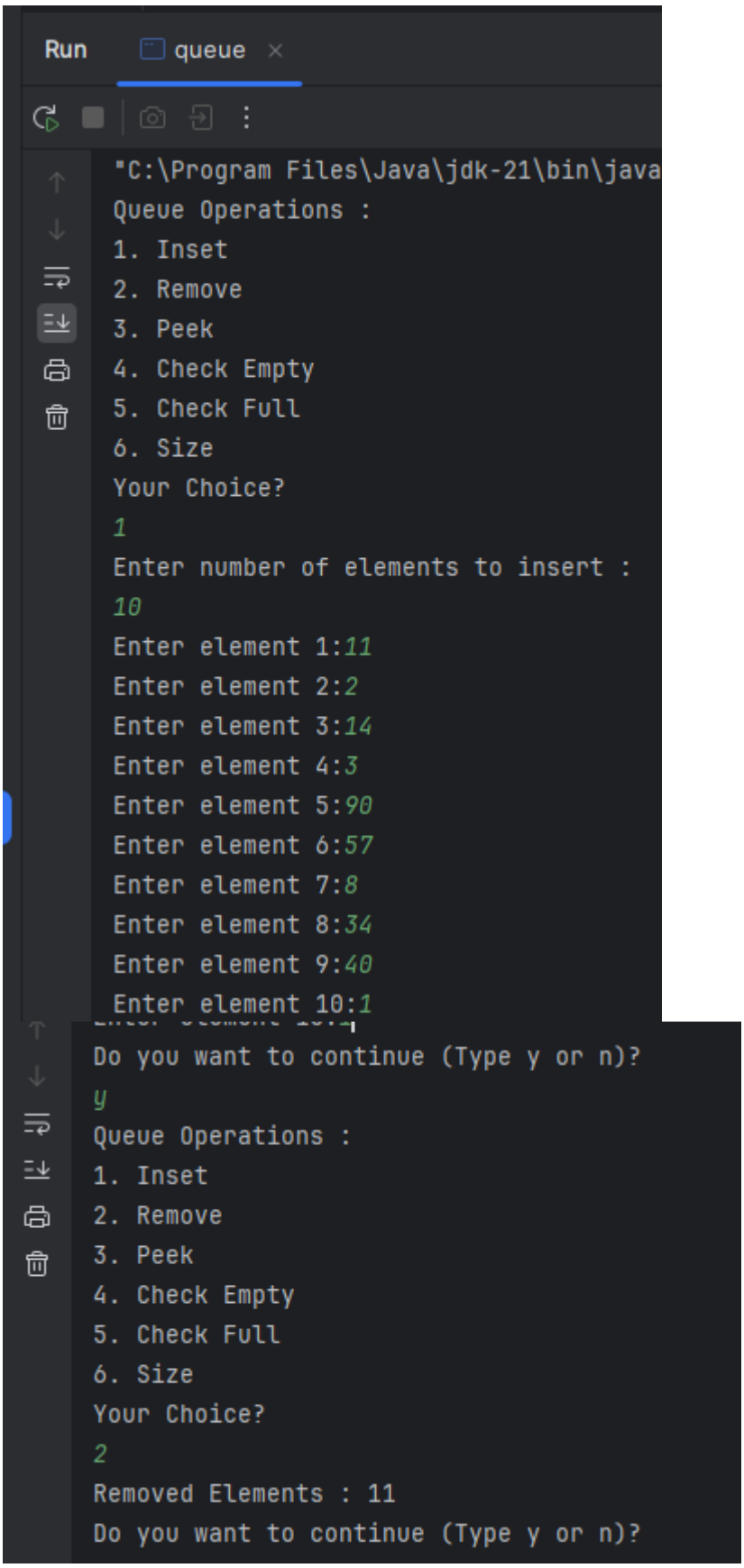
matrixdemo.java

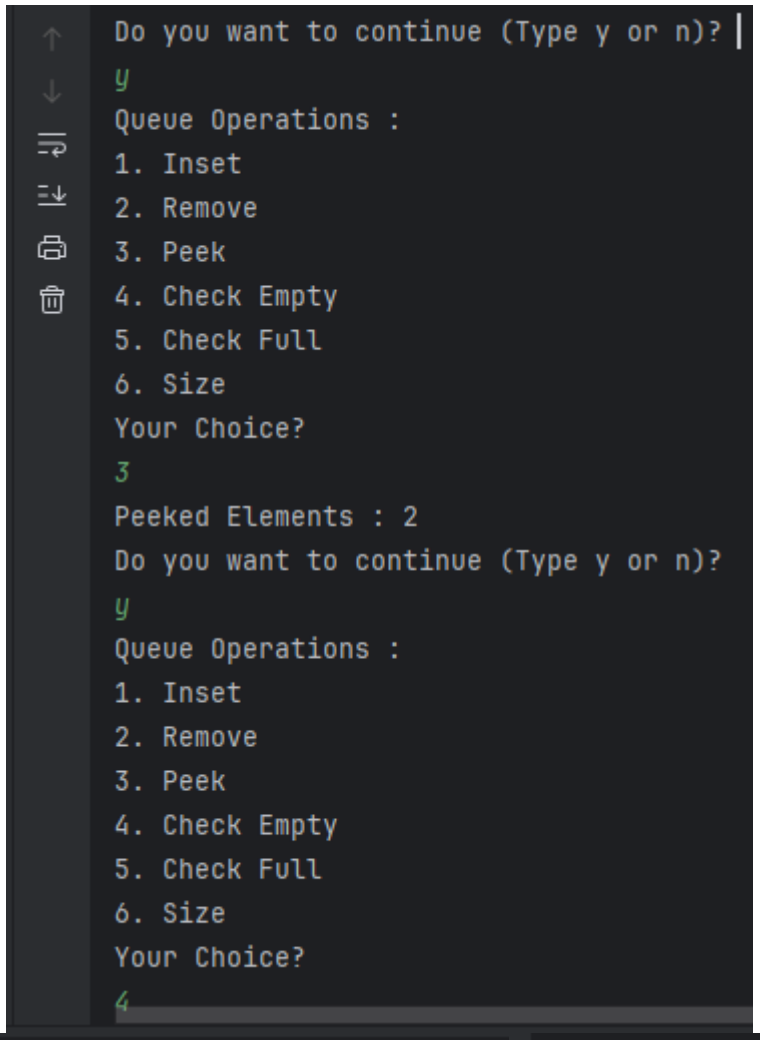
```java
import java.util.ArrayList;
import java.util.Scanner;
public class matrixdemo {
    public static void main(String[]args)
    {
        ArrayList<Integer> matriksA = new ArrayList<Integer>();
        ArrayList<Integer> matriksB = new ArrayList<Integer>();
        ArrayList<Integer> tambah = new ArrayList<Integer>();
        ArrayList<Integer> kurang = new ArrayList<Integer>();
        ArrayList<Integer> kali = new ArrayList<Integer>();
        ArrayList<Double> bagi = new ArrayList<Double>();

        Scanner scanner = new Scanner(System.in);
        //memasukkan jumlah data
        System.out.println("Masukan jumlah data matriks : ");
        int jumlah = scanner.nextInt();

        //memasukkan data matriks A
        System.out.println("Masukan nilai matriks A : ");
        for (int i = 0; i<jumlah; i++)
        {
            System.out.println("Masukkan nilai ke- "+ (i + 1) +": ");
            int nilai = scanner.nextInt();
            matriksA.add(nilai);
        }
```

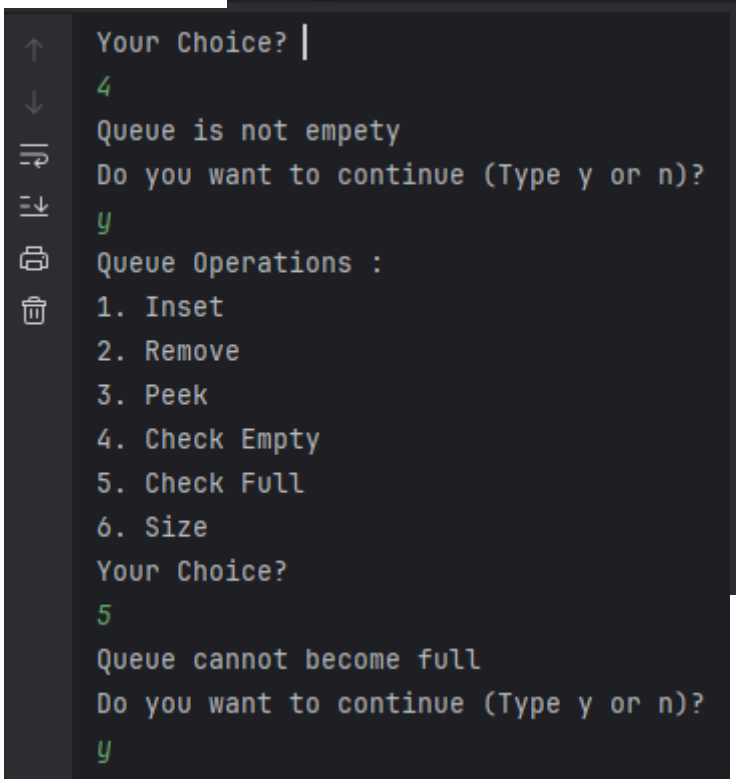
matrixdemo.java

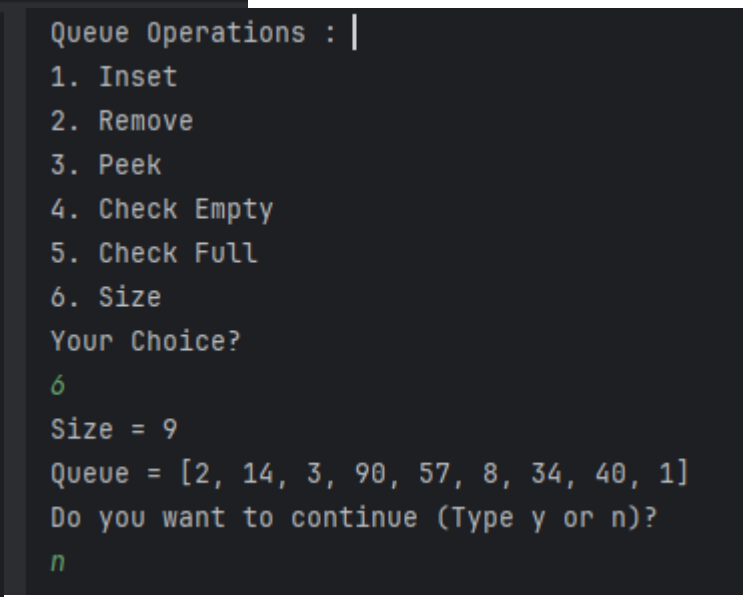
```
3    public class matrixdemo {
4        public static void main(String[]args)
26           //memasukkan data matriks B
27           System.out.println("Masukan nilai matriks B : ");
28           for (int i = 0; i<jumlah; i++)
29           {
30               System.out.println("Masukkan nilai ke- "+ (i + 1) +": ");
31               int nilai = scanner.nextInt();
32               matriksB.add(nilai);
33           }
34
35           //penjumlahan :
36           for (int i =0; i<jumlah; i++)
37           {
38               tambah.add(matriksA.get(i) + matriksB.get(i));
39           }
40           //pengurangan:
41           for (int i =0; i<jumlah; i++)
42           {
43               kurang.add(matriksA.get(i) - matriksB.get(i));
44           }
45           //perkalian :
46           for (int i =0; i<jumlah; i++)
47           {
48               kali.add(matriksA.get(i) * matriksB.get(i));
49           }
50           //pembagian :
51           for (int i =0; i<jumlah; i++)
52           {
53               bagi.add((double)matriksA.get(i) + matriksB.get(i));
54           }
55
56           //method cetak :
57           System.out.println("Hasil penjumlahan matriks A + matriks B : "+tambah);
58           System.out.println("Hasil pengurangan matriks A - matriks B : "+kurang);
59           System.out.println("Hasil perkalian matriks A x matriks B : "+kali);
60           System.out.println("Hasil pembagian matriks A : matriks B : "+bagi);
61
62           scanner.close();
63       }
64   }
```

8. Tugas 8 : Membuat program implementasi queue/antrian
   Hasil Program :




Do you want to continue (Type y or n)?
y
Queue Operations :
1. Inset
2. Remove
3. Peek
4. Check Empty
5. Check Full
6. Size
Your Choice?
3
Peeked Elements : 2
Do you want to continue (Type y or n)?
y
Queue Operations :
1. Inset
2. Remove
3. Peek
4. Check Empty
5. Check Full
6. Size
Your Choice?
4


Your Choice?
4
Queue is not empety
Do you want to continue (Type y or n)?
y
Queue Operations :
1. Inset
2. Remove
3. Peek
4. Check Empty
5. Check Full
6. Size
Your Choice?
5
Queue cannot become full
Do you want to continue (Type y or n)?
y


Queue Operations :
1. Inset
2. Remove
3. Peek
4. Check Empty
5. Check Full
6. Size
Your Choice?
6
Size = 9
Queue = [2, 14, 3, 90, 57, 8, 34, 40, 1]
Do you want to continue (Type y or n)?
n

Code Program :

queue.java

```java
import java.util.Scanner;
import java.util.Queue;
import java.util.LinkedList;

public class queue {
    public static void main(String[]args)
    {
        Scanner scanner = new Scanner(System.in);
        Queue<Integer> antrian = new LinkedList<>();

        char pilih;
        do {
            System.out.println("Queue Operations : ");
            System.out.println("1. Inset");
            System.out.println("2. Remove");
            System.out.println("3. Peek");
            System.out.println("4. Check Empty");
            System.out.println("5. Check Full");
            System.out.println("6. Size");
            System.out.println("Your Choice? ");
            int seleksi = scanner.nextInt();
        switch (seleksi)
        {
            case 1:
                System.out.println("Enter number of elements to insert : ");
                int numelements = scanner.nextInt();
                for (int i = 0; i<numelements; i++)
                {
                    System.out.print("Enter element " + (i + 1) + ":");
                    int element = scanner.nextInt();
                    antrian.offer(element);
                }
                break;

            case 2:
                if (!antrian.isEmpty())
                {
                    int removeelements = antrian.poll();
                    System.out.println("Removed Elements : "+removeelements);
                }else {
                    System.out.println("Queue is empty.");
                }
                break;
```

```
                case 3:
                    if (!antrian.isEmpty())
                    {
                        int peekelement = antrian.peek();
                        System.out.println("Peeked Elements : "+peekelement);
                    }else {
                        System.out.println("Queue is empety");
                    }
                    break;
                case 4:
                    if (antrian.isEmpty())
                    {
                        System.out.println("Queue is empety");
                    }else {
                        System.out.println("Queue is not empety");
                    }
                    break;
                case 5:
                    System.out.println("Queue cannot become full");
                    break;
                case 6:
                    System.out.println("Size = " + antrian.size());
                    System.out.println("Queue = " + antrian);
                    break;
                default:
                    System.out.println("Invalid Option");
                    break;
            }
            System.out.println("Do you want to continue (Type y or n)? ");
            pilih = scanner.next().charAt(0);
        }while (pilih == 'y' || pilih == 'Y');
        scanner.close();
    }
}
```