

Laporan Praktikum Algoritma & Struktur Data

UTS

Dosen Pengampu : Triana Fatmawati, S.T, M.T



Nama : Izzatir Rofi'ah

NIM : 2341760010

Prodi : D-IV Sistem Informasi Bisnis

JURUSAN TEKNOLOGI INFORMASI

POLITEKNIK NEGERI MALANG

2023/2024

Soal

Buatlah sebuah sistem informasi perbankan yang terdiri 2 class, yaitu Rekening dan Transaksi.

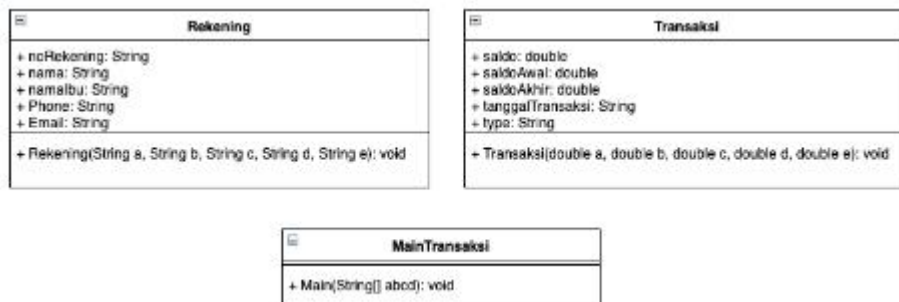
Pada sistem informasi tersebut dapat **meninputkan** data, **menampilkan** data, **mengurutkan data kriteria tertentu**, dan **mencari** data.

Untuk lebih jelasnya perhatikan class diagram dan output dari program tersebut.

Silahkan menggunakan data yang telah disertakan.

Catatan: Untuk tampilan dan class diagram boleh dimodifikasi atau ditambahkan tetapi tidak boleh dikurangi.

Class Diagram:



Data:

No Rekening, Nama, Nama Ibu, Phone, Email

16030927 3084,Wallace,Chase

Castro,1-458-264-3263,ligula.Nullam@tacitisociosqu.edu

16100617 0573,Darius,Julian Daniel,1-357-843-0547,nec@lectusjusto.org

16240401 2243,Fuller,Finn Dunlap,571-7062,convallis@Vestibulumanteipsum.org

16270525 0112,Malcolm,Keane Floyd,623-0234,porttitor.tellus.non@Curabitur.ca

16971204 2416,Geoffrey,Stephen

Pratt,1-683-416-8323,ut.pellentesque@luctusutpellentesque.com

16100727 8862,Rudyard,Charles Morales,650-5379,Proin.eget@velitegestaslacinia.ca

16460329 4259,Troy,Damon Guerra,897-7608,pede.Suspendisse.dui@a.ca

16320421 3437,Alec,Cooper Lee,792-4447,non@mus.com

16180729 7229,Walter,Seth Drake,863-8209,Pellentesque.ut.ipsium@neque.ca

16950313 6823,Simon,Burton Gates,592-6919,tellus.justo.sit@commodoauctor.net

16850708 3528,Kamal,Odysseus Salas,1-115-339-7678,dictum@nec.edu

16080205 9329,Xenos,Colin Curry,1-891-703-2664,vel@ullamcorpermagna.co.uk

16080628 2695,Merritt,Clarke

Roman,1-978-632-5110,Aliquam.gravida@vestibulumMauris.net

16130909 2979,Ryder,Joel

Cunningham,817-1766,interdum.Curabitur.dictum@rutrumurna.edu

16890212 8688,Preston,Brock Schroeder,1-675-400-4501,et.ultrices@a.co.uk

16141008 9963,Alec,Baker Barton,527-9085,ut@aultriciesadipiscing.ca

16511222 7763,Price,Ashton Burke,1-564-419-4285,Proin.velit@Duisac.net

16720623 0943,Devin,Slade Flores,977-6690,ac@nibhAliquamornare.com

16771126 7372,Ignatius,Lionel Kane,353-5137,cubilia.Curae.Phasellus@Duis.com

Saldo, Saldo Awal, Saldo Akhir, Tanggal Transaksi

898214,494048,3587,2021-03-09 07:54:42

205420,200162,775880,2021-06-25 10:23:00

838632,350929,328316,2021-09-18 23:00:04

230659,204434,690503,2022-02-02 19:10:34
770592,334245,444267,2020-08-11 13:36:56
685302,451002,376442,2020-05-23 07:34:53
816129,851403,597842,2021-07-18 19:41:20
989609,333823,802752,2022-02-01 01:13:11
297103,396116,779589,2021-07-03 01:09:49
66190,259150,619774,2021-09-09 03:57:30
234301,278309,547922,2021-08-24 13:18:39
243306,869468,50283,2021-03-12 03:40:16
371045,991242,602034,2021-08-06 11:48:59
395170,97058,472273,2021-05-02 10:53:31
862731,561908,109431,2021-07-31 08:11:00
556798,31387,725426,2021-03-27 06:18:20
873982,896213,846142,2021-07-18 04:06:30
774247,739406,775848,2020-10-24 01:39:00
66987,823014,868772,2020-12-21 05:57:59

Jawab :

Berikut adalah tampilan code program pada file **Rekening16.java**.

```
public class Rekening16 {  
    3 usages  
    String noRekening;  
    5 usages  
    String nama;  
    3 usages  
    String namaIbu;  
    3 usages  
    String phone;  
    3 usages  
    String email;  
  
    19 usages  
    Rekening16 (String a, String b, String c, String d, String e){  
        noRekening = a;  
        nama = b;  
        namaIbu = c;  
        phone = d;  
        email = e;  
    }  
}
```

Berikut adalah tampilan code program pada file **Transaksi16.java**.

```
public class Transaksi16 {  
    4 usages  
    double saldo;  
    3 usages  
    double saldoAwal;  
    3 usages  
    double saldoAkhir;  
    3 usages  
    String tanggalTransaksi;  
    3 usages  
    String type;  
  
    19 usages  
    Transaksi16(double a, double b, double c, String d, String e){  
        saldo = a;  
        saldoAwal = b;  
        saldoAkhir = c;  
        tanggalTransaksi = d;  
        type = e;  
    }  
}
```

Berikut adalah tampilan code program pada file **MainTransaksi16.java**.

```
import java.util.Scanner;
public class MainTransaksi16 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int choice;

        do {
            System.out.println(" ");
            System.out.println("-----UTS IZZATIR-----");
            System.out.println("1. Tampil data rekening");
            System.out.println("2. Tampil data transaksi");
            System.out.println("3. Mencari saldo > 500.000");
            System.out.println("4. Sorting by name");
            System.out.println("5. Keluar");
            System.out.println("-----");
            System.out.print("Pilih(1-5): ");
            choice = sc.nextInt();

            switch (choice) {
                case 1:
                    tampilDataRekening();
                    break;
                case 2:
                    tampilDataTransaksi();
                    break;
                case 3:
                    mencariSaldoLebihDari500000();
                    break;
                case 4:
                    sortingByName();
                    break;
                case 5:
                    System.out.println("Terima kasih!");
                    break;
                default:
                    System.out.println("Pilihan tidak valid. Silakan pilih 1-5.");
            }
        } while (choice != 5);

        static Rekening16[] rekenings = {
            new Rekening16(a: "16030927 3084", b: "Wallace", c: "Chase Castro", d: "1-458-264-3263", e: "ligula.Nullam@tacitisociosqu.edu"),
            new Rekening16(a: "16100617 0573", b: "Darius", c: "Julian Daniel", d: "1-375-843-0547", e: "nec@lectusjusto.org"),
            new Rekening16(a: "16240401 2243", b: "Fuller", c: "Finn Dunlap", d: "1-571-7062", e: "tconvallis@vestibulumanteipsum.org"),
            new Rekening16(a: "16270525 0112", b: "Malcolm", c: "Keane Floyd", d: "1-623-0234", e: "tporttitor.tellus.non@curabitur.ca"),
            new Rekening16(a: "16971204 2416", b: "Geoffrey", c: "Stephen Pratt", d: "1-683-416-8323", e: "ut.pellentesque@luctusutpellentesque.com"),
            new Rekening16(a: "16100727 8862", b: "Rudyard", c: "Charles Morales", d: "1-650-5379", e: "tProin.eget@velitgestaslacinia.ca"),
            new Rekening16(a: "16440329 4259", b: "Troy", c: "Damon Guerra", d: "1-897-7608", e: "tpede.Suspendisse.dui@a.ca"),
            new Rekening16(a: "16320421 3437", b: "Alec", c: "Cooper Lee", d: "1-792-4447", e: "tnon@mus.com"),
            new Rekening16(a: "16180729 7229", b: "Walter", c: "Seth Drake", d: "1-863-8209", e: "tPellentesque.ut.ipsum@neque.ca"),
            new Rekening16(a: "16950313 6823", b: "Simon", c: "Burton Gates", d: "1-592-6919", e: "tellus.justo.sit@commodoauctor.net"),
            new Rekening16(a: "16850708 3528", b: "Kamal", c: "Odysseus Salas", d: "1-115-339-7678", e: "dictum@nec.edu"),
            new Rekening16(a: "16080285 9329", b: "Xenos", c: "Colin Curry", d: "1-891-703-2664", e: "vel@nullamcorper magna.co.uk"),
            new Rekening16(a: "16080628 2695", b: "Merritt", c: "Clarke Roman", d: "1-978-632-5110", e: "Aliquam.gravida@vestibulumMauris.net"),
            new Rekening16(a: "16130909 2979", b: "Ryder", c: "Joel Cunningham", d: "1-817-1766", e: "tinterdum.Curabitur.dictum@rutrumurna.edu"),
            new Rekening16(a: "16890212 8688", b: "Preston", c: "Brock Schroeder", d: "1-675-400-4501", e: "et.ultrices@a.co.uk"),
            new Rekening16(a: "16141008 9963", b: "Alec", c: "Baker Barton", d: "1-527-9085", e: "tut@a@ultricesadipiscing.ca"),
            new Rekening16(a: "16511222 7763", b: "Price", c: "Ashton Burke", d: "1-564-419-4285", e: "Proin.velit@duisac.net"),
            new Rekening16(a: "16720623 0943", b: "Devin", c: "Slade Flores", d: "1-977-6690", e: "tac@nibhAliquamornare.com"),
            new Rekening16(a: "16771126 7372", b: "Ignatus", c: "Lionel Kane", d: "1-353-5137", e: "t@bilia.Curae.Phase@duis.com")
        };

        static Transaksi16[] transaksi = {
            new Transaksi16(a: 898214, b: 494048, c: 3587, d: "2021-03-09 07:54:42", e: ""),
            new Transaksi16(a: 205420, b: 200162, c: 775880, d: "2021-06-25 10:23:00", e: ""),
            new Transaksi16(a: 838632, b: 350929, c: 328316, d: "2021-09-18 23:00:04", e: ""),
            new Transaksi16(a: 230659, b: 204434, c: 690503, d: "2022-02-02 19:10:34", e: ""),
            new Transaksi16(a: 770592, b: 334245, c: 444267, d: "2020-08-11 13:36:56", e: ""),
            new Transaksi16(a: 685302, b: 451002, c: 376442, d: "2020-05-23 07:34:53", e: ""),
            new Transaksi16(a: 816129, b: 851403, c: 597842, d: "2021-07-18 19:41:20", e: ""),
            new Transaksi16(a: 989609, b: 333823, c: 802752, d: "2022-02-01 01:13:11", e: ""),
            new Transaksi16(a: 297103, b: 396116, c: 779589, d: "2021-07-03 01:09:49", e: ""),
            new Transaksi16(a: 66190, b: 259150, c: 619774, d: "2021-09-09 03:57:30", e: ""),
            new Transaksi16(a: 234301, b: 278309, c: 547922, d: "2021-08-24 13:18:39", e: ""),
            new Transaksi16(a: 243306, b: 869468, c: 50283, d: "2021-03-12 03:40:16", e: ""),
            new Transaksi16(a: 371045, b: 991242, c: 602034, d: "2021-08-06 11:48:59", e: ""),
            new Transaksi16(a: 395170, b: 97058, c: 472273, d: "2021-05-02 10:53:31", e: ""),
            new Transaksi16(a: 862731, b: 561908, c: 109431, d: "2021-07-31 08:11:00", e: ""),
            new Transaksi16(a: 556798, b: 31387, c: 725426, d: "2021-03-27 06:18:20", e: ""),
            new Transaksi16(a: 873982, b: 896213, c: 846142, d: "2021-07-18 04:06:30", e: ""),
            new Transaksi16(a: 774247, b: 739406, c: 775848, d: "2020-10-24 01:39:00", e: ""),
            new Transaksi16(a: 66987, b: 823014, c: 868772, d: "2020-12-21 05:57:59", e: "")
        };
    }
}
```



```

static void tampilDataRekening() {
    System.out.println(" ");
    System.out.println("No Rekening\t\t Nama \t\t Nama Ibu\t\t Phone\t\t\t Email");
    for (Rekening16 rekening : rekenings) {
        System.out.println(rekening.noRekening + "\t" + rekening.nama + "\t\t" + rekening.namaIbu + "\t" + rekening.phone + "\t" + rekening.email);
    }
}

1usage
static void tampilDataTransaksi() {
    System.out.println("Saldo\t\t\tSaldo Awal\t\tSaldo Akhir\t\t\tTanggal Transaksi\t\tType");
    for (Transaksi16 transaksi : transaksis) {
        String saldo = String.format("%.2f", transaksi.saldo);
        String saldoAwal = String.format("%.2f", transaksi.saldoAwal);
        String saldoAkhir = String.format("%.2f", transaksi.saldoAkhir);

        System.out.println(saldo + "\t\t" + saldoAwal + "\t\t" + saldoAkhir + "\t\t\t"
            + transaksi.tanggalTransaksi + "\t" + transaksi.type);
    }
}

1usage
static void mencariSaldoLebihDari500000() {
    System.out.println("Saldo lebih dari 500000:");
    System.out.println("Saldo\t\t\tSaldo Awal\t\tSaldo Akhir\t\t\tTanggal Transaksi\t\tType");
    for (Transaksi16 transaksi : transaksis) {
        String saldo = String.format("%.2f", transaksi.saldo);
        String saldoAwal = String.format("%.2f", transaksi.saldoAwal);
        String saldoAkhir = String.format("%.2f", transaksi.saldoAkhir);

        if (transaksi.saldo > 500000) {
            System.out.println(saldo + "\t\t" + saldoAwal + "\t\t" + saldoAkhir + "\t\t\t"
                + transaksi.tanggalTransaksi + "\t" + transaksi.type);
        }
    }
}

static void sortingByName() {
    for (int i = 0; i < rekenings.length - 1; i++) {
        for (int j = 0; j < rekenings.length - i - 1; j++) {
            if (rekenings[j].nama.compareTo(rekenings[j + 1].nama) > 0) {
                Rekening16 temp = rekenings[j];
                rekenings[j] = rekenings[j + 1];
                rekenings[j + 1] = temp;
            }
        }
    }

    System.out.println(" ");
    System.out.println("Data rekening setelah diurutkan berdasarkan nama:");
    System.out.println("-----");
    System.out.println("No Rekening\t\t Nama \t\t Nama Ibu\t\t Phone\t\t\t Email");
    for (Rekening16 rekening : rekenings) {
        System.out.println(rekening.noRekening + "\t" + rekening.nama + "\t\t" + rekening.namaIbu + "\t" + rekening.phone + "\t" + rekening.email);
    }
}

```

Berikut adalah hasil output program

```
-----UTS IZZATIR-----
1. Tampil data rekening
2. Tampil data transaksi
3. Mencari saldo > 500.000
4. Sorting by name
5. Keluar
-----
Pilih(1-5): 1

No Rekening    Nama      Nama Ibu    Phone      Email
16030927 3084 Wallace Chase Castro 1-458-264-3263 ligula.Nullam@tacitisociosqu.edu
16100617 0573 Darius Julian Daniel 1-375-843-0547 nec@lectusjusto.org
16240401 2243 Fuller Finn Dunlap 571-7062 convallis@Vestibulumanteipsum.org
16270525 0112 Malcolm Keane Floyd 623-0234 porttitor.tellus.non@Curabitur.ca
16971204 2416 Geofrey Stephen Pratt 1-683-416-8323 ut.pellentesque@luctusutpellentesque.com
16100727 8862 Rudyard Charles Morales 650-5379 Proin.eget@velitegestaslacinia.ca
16460329 4259 Troy Damon Guerra 897-7608 pede.Suspendisse.dui@a.ca
16320421 3437 Alec Cooper Lee 792-4447 non@mvs.com
16180729 7229 Walter Seth Drake 863-8209 Pellentesque.ut.ipsam@neque.ca
16950313 6823 Simon Burton Gates 592-6919 tellus.justo.sit@commodoauctor.net
16850708 3528 Kamal Odysseus Salas 1-115-339-7678 dictum@nec.edu
16080205 9329 Xenos Colin Curry 1-891-703-2664 vel@ullamcorper magna.co.uk
16080628 2695 Merritt Clarke Roman 1-978-632-5110 Aliquam.gravida@vestibulumMauris.net
16130909 2979 Ryder Joel Cunningham 817-1766 interdum.Curabitur.dictum@rutrumurna.edu
16890212 8688 Preston Brock Schroeder 1-675-400-4501 et.ultrices@a.co.uk
16141008 9963 Alec Baker Barton 527-9085 ut@aultriciesadipiscing.ca
16511222 7763 Price Ashton Burke 1-564-419-4285 Proin.velit@Duisac.net
16720623 0943 Devin Slade Flores 977-6690 ac@nibhAliquamornare.com
16771126 7372 Ignatus Lionel Kane 353-5137 cubilia.Curae.Phasellus@Duis.com

-----UTS IZZATIR-----
1. Tampil data rekening
2. Tampil data transaksi
3. Mencari saldo > 500.000
4. Sorting by name
5. Keluar
-----
Pilih(1-5): 2

Saldo      Saldo Awal    Saldo Akhir    Tanggal Transaksi    Type
898214.00  494048.00      3587.00        2021-03-09 07:54:42
205420.00  200162.00      775880.00      2021-06-25 10:23:00
838632.00  350929.00      328316.00      2021-09-18 23:00:04
230659.00  204434.00      690503.00      2022-02-02 19:10:34
770592.00  334245.00      444267.00      2020-08-11 13:36:56
685302.00  451002.00      376442.00      2020-05-23 07:34:53
816129.00  851403.00      597842.00      2021-07-18 19:41:20
989609.00  333823.00      802752.00      2022-02-01 01:13:11
297103.00  396116.00      779589.00      2021-07-03 01:09:49
66190.00   259150.00      619774.00      2021-09-09 03:57:30
234301.00  278309.00      547922.00      2021-08-24 13:18:39
243306.00  869468.00      50283.00       2021-03-12 03:40:16
371045.00  991242.00      602034.00      2021-08-06 11:48:59
395170.00  97058.00       472273.00      2021-05-02 10:53:31
862731.00  561908.00      109431.00      2021-07-31 08:11:00
556798.00  31387.00       725426.00      2021-03-27 06:18:20
873982.00  896213.00      846142.00      2021-07-18 04:06:30
774247.00  739406.00      775848.00      2020-10-24 01:39:00
66987.00   823014.00      868772.00      2020-12-21 05:57:59
```

-----UTS IZZATIR-----

1. Tampil data rekening
2. Tampil data transaksi
3. Mencari saldo > 500.000
4. Sorting by name
5. Keluar

Pilih(1-5): 3

Saldo lebih dari 500000:

Saldo	Saldo Awal	Saldo Akhir	Tanggal Transaksi	Type
898214.00	494048.00	3587.00	2021-03-09 07:54:42	
838632.00	350929.00	328316.00	2021-09-18 23:00:04	
770592.00	334245.00	444267.00	2020-08-11 13:36:56	
685302.00	451002.00	376442.00	2020-05-23 07:34:53	
816129.00	851403.00	597842.00	2021-07-18 19:41:20	
989609.00	333823.00	802752.00	2022-02-01 01:13:11	
862731.00	561908.00	109431.00	2021-07-31 08:11:00	
556798.00	31387.00	725426.00	2021-03-27 06:18:20	
873982.00	896213.00	846142.00	2021-07-18 04:06:30	
774247.00	739406.00	775848.00	2020-10-24 01:39:00	

-----UTS IZZATIR-----

1. Tampil data rekening
2. Tampil data transaksi
3. Mencari saldo > 500.000
4. Sorting by name
5. Keluar

Pilih(1-5): 4

Data rekening setelah diurutkan berdasarkan nama:

No Rekening	Nama	Nama Ibu	Phone	Email
16320421 3437	Alec	Cooper Lee	792-4447	non@mus.com
16141008 9963	Alec	Baker Barton	527-9085	ut@aultriciesadipiscing.ca
16100617 0573	Darius	Julian Daniel	1-375-843-0547	nec@lectusjusto.org
16720623 0943	Devin	Slade Flores	977-6690	ac@nibhAliquamornare.com
16240401 2243	Fuller	Finn Dunlap	571-7062	convallis@Vestibulumanteipsum.org
16971204 2416	Geofrey	Stephen Pratt	1-683-416-8323	ut.pellentesque@luctusutpellentesque.com
16771126 7372	Ignatus	Lionel Kane	353-5137	cubilia.Curae.Phasellus@Duis.com
16850708 3528	Kamal	Odysseus Salas	1-115-339-7678	dictum@nec.edu
16270525 0112	Malcolm	Keane Floyd	623-0234	porttitor.tellus.non@Curabitur.ca
16080628 2695	Merriitt	Clarke Roman	1-978-632-5110	Aliquam.gravida@vestibulumMauris.net
16890212 8688	Preston	Brock Schroeder	1-675-400-4501	et.ultrices@a.co.uk
16511222 7763	Price	Ashton Burke	1-564-419-4285	Proin.velit@Duisac.net
16100727 8862	Rudyard	Charles Morales	650-5379	Proin.eget@velitegestaslacinia.ca
16130909 2979	Ryder	Joel Cunningham	817-1766	interdum.Curabitur.dictum@rutrumurna.edu
16950313 6823	Simon	Burton Gates	592-6919	tellus.justo.sit@commodoavctor.net
16460329 4259	Troy	Damon Guerra	897-7608	pede.Suspendisse.dui@a.ca
16030927 3084	Wallace	Chase Castro	1-458-264-3263	ligula.Nullam@tacitisociosqu.edu
16180729 7229	Walter	Seth Drake	863-8209	Pellentesque.ut.ips@neque.ca
16080205 9329	Xenos	Colin Curry	1-891-703-2664	vel@ullamcorper magna.co.uk