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Persiapan

1. Buat file book.java

```
kjava > ...
public class Book {
    public String isbn;
    public String title;

    public Book() {
    }

    public Book(String isbn, String title) {
        this.isbn = isbn;
        this.title = title;
    }

    public String toString() {
        return "ISBN: " + this.isbn + " Title: " + this.title;
    }
}
```

2. Buat file Customer.java

```
customer.java > Customer > toString()
public class Customer {
    public int id;
    public String name;

    public Customer() {
    }

    public Customer(int id, String name) {
        this.id = id;
        this.name = name;
    }

    public String toString() {
        return "ID: " + this.id + " Nama: " + this.name;
    }
}
```

Praktikum

1. Buat file DemoArrayList.java

```
public class DemoArrayList {
    public static void main(String[] args) {
        ArrayList<Customer> customers = new ArrayList<>(initialCapacity:2);

        Customer customer1 = new Customer(id:1, name:"Zakia");
        Customer customer2 = new Customer(id:5, name:"Budi");

        customers.add(customer1);
        customers.add(customer2);

        customers.add(new Customer(id:4, name:"Cica"));
        customers.add(index:2, new Customer(id:4, name:"Cica"));

        // Menampilkan semua data customer
        for (Customer cust : customers) {
            System.out.println(cust.toString());
        }
    }
}
```

2. Hasil Run

```
ID: 1 Nama: Zakia
ID: 5 Nama: Budi
ID: 4 Nama: Cica
ID: 4 Nama: Cica
PS D:\Project\Kuliah\SMT2\Pr
```

3. Update code

```
ArrayList<Customer> customers = new ArrayList<>();

Customer customer1 = new Customer(id:1, name:"Zakia");
Customer customer2 = new Customer(id:5, name:"Budi");

customers.add(customer1);
customers.add(customer2);

customers.add(new Customer(id:4, name:"Cica"));
customers.add(index:2, new Customer(id:4, name:"Cica"));

System.out.println("Index dari customer2: " + customers.indexOf(customer2));

Customer customer = customers.get(index:1);
System.out.println(customer.name);
customer.name = "Budi Utomo";

ArrayList<Customer> newCustomers = new ArrayList<>();
newCustomers.add(new Customer(id:201, name:"Della"));
newCustomers.add(new Customer(id:202, name:"Victor"));
newCustomers.add(new Customer(id:203, name:"Sarah"));

customers.addAll(newCustomers);

for (Customer cust : customers) {
    System.out.println(cust.toString());
}

System.out.println(customers);
```

4. Hasil run

```
Index dari customer2: 1
Budi
ID: 1 Nama: Zakia
ID: 5 Nama: Budi Utomo
ID: 4 Nama: Cica
ID: 4 Nama: Cica
ID: 201 Nama: Della
ID: 202 Nama: Victor
ID: 203 Nama: Sarah
[ID: 1 Nama: Zakia, ID: 5 Nama: Budi Utomo, ID: 4 Nama: Cica, ID: 4 Nama: Cica, ID: 201 Nama: Della, ID: 202 Nama: Victor, ID: 203 Nama: Sarah]
PS D:\Project\Kuliah\SMK2\Praktikum\ASP\TobSheet15>
```

Praktikum

1. Buat file stackdemo.java

```
// StackDemo.java
public static void main(String[] args) {
    Book book1 = new Book(id:"1234", title:"Dasar Pemrograman");
    Book book2 = new Book(id:"7145", title:"Mafalan Shalat Dello");
    Book book3 = new Book(id:"3502", title:"Muhammad Al-Fatih");
    Stack<Book> books = new Stack<>();
    books.push(book1);
    books.push(book2);
    books.push(book3);
    Book temp = books.peek();
    if (temp != null) {
        System.out.println("PEEK: " + temp.toString());
    }
    System.out.println("\nDaftar buku dalam stack:");
    for (Book book : books) {
        System.out.println(book.toString());
    }
    System.out.println("\nIsi objek stack langsung:");
    System.out.println(books);
    Book temp2 = books.pop();
    if (temp2 != null) {
        System.out.println("\uPOP: " + temp2.toString());
    }
    System.out.println("\uStack setelah POP:");
    for (Book book : books) {
        System.out.println(book.toString());
    }
}
```

2. Buat file book.java

```
// Book.java
package praktikum1;

public class Book {
    String id;
    String title;

    public Book(String id, String title) {
        this.id = id;
        this.title = title;
    }

    @Override
    public String toString() {
        return "ID: " + id + ", Judul: " + title;
    }
}
```

3. Hasil Run

```
39072a1a42fbada994a47c90e46\redhat.java\jdt_ws\Jobsheet15_38cae213\bin\praktikum1.StackDemo
PEEK: ID: 3562, Judul: Muhammad Al-Fatih

Daftar buku dalam Stack:
ID: 1234, Judul: Dasar Pemrograman
ID: 7145, Judul: Hafalan Shalat Delisa
ID: 3562, Judul: Muhammad Al-Fatih

Isi objek stack langsung:
[ID: 1234, Judul: Dasar Pemrograman, ID: 7145, Judul: Hafalan Shalat Delisa, ID: 3562, Judul: Muhammad Al-Fatih]

POP: ID: 3562, Judul: Muhammad Al-Fatih

Stack setelah POP:
ID: 1234, Judul: Dasar Pemrograman
ID: 7145, Judul: Hafalan Shalat Delisa
PS D:\Project\Kuliah\SM2\Praktikum-ASD\Jobsheet15>
```

Praktikum

1. Buat file test set demo

```
Run | Debug
public static void main(String[] args) {
    TreeSet<String> fruits = new TreeSet<>();
    fruits.add(e:"Mangga");
    fruits.add(e:"Apel");
    fruits.add(e:"Jeruk");
    fruits.add(e:"Jambu");

    System.out.println(x:"Isi TreeSet:");
    for (String temp : fruits) {
        System.out.println(temp);
    }

    System.out.println("\nFirst: " + fruits.first());
    System.out.println("\nLast: " + fruits.last());

    fruits.remove(o:"Jeruk");
    System.out.println("\nSetelah remove 'Jeruk': " + fruits);

    fruits.pollFirst();
    System.out.println("\nSetelah pollFirst(): " + fruits);

    fruits.pollLast();
    System.out.println("\nSetelah pollLast(): " + fruits);
}
```

2. Hasil run

```
Isi TreeSet:
Apel
Jambu
Jeruk
Mangga

First: Apel
Last: Mangga

Setelah remove 'Jeruk': [Apel, Jambu, Mangga]

Setelah pollFirst(): [Jambu, Mangga]

Setelah pollLast(): [Jambu]
```

Praktikum

1. Main

```
package ppraktikum3;

import java.util.ArrayList;
import java.util.Collections;

public class SortStringDemo {
    public static void main(String[] args) {
        ArrayList<String> daftarSiswa = new ArrayList<>();
        daftarSiswa.add("Zainab");
        daftarSiswa.add("Andi");
        daftarSiswa.add("Rara");

        Collections.sort(daftarSiswa);

        System.out.println("Setelah disortir:");
        System.out.println(daftarSiswa);
    }
}
```

2. SortCustomerDemo.java

```
import java.util.ArrayList;

public class SortCustomerDemo {
    public static void main(String[] args) {
        ArrayList<Customer> customers = new ArrayList<>();
        customers.add(new Customer(id:3, name:"Rara"));
        customers.add(new Customer(id:1, name:"Zainab"));
        customers.add(new Customer(id:2, name:"Andi"));

        customers.sort((c1, c2) -> c1.name.compareTo(c2.name));

        System.out.println("Setelah disortir berdasarkan nama:");
        for (Customer c : customers) {
            System.out.println(c);
        }
    }
}
```

3. Customer.java

```
public class Customer {
    int id;
    String name;

    public Customer(int id, String name) {
        this.id = id;
        this.name = name;
    }

    @Override
    public String toString() {
        return "ID: " + id + ", Nama: " + name;
    }
}
```

4. Hasil run

```
.StackDemo'
PEEK: ID: 3562, Judul: Muhammad Al-Fatih

Daftar buku dalam stack:
ID: 1234, Judul: Dasar Pemrograman
ID: 7145, Judul: Hafalan Shalat Delisa
ID: 3562, Judul: Muhammad Al-Fatih

Isi objek stack langsung:
[ID: 1234, Judul: Dasar Pemrograman, ID: 7145, Judul: Hafalan Shalat Delisa, ID: 3562, Judul: Muhammad Al-Fatih]

POP: ID: 3562, Judul: Muhammad Al-Fatih

Stack setelah POP:
ID: 1234, Judul: Dasar Pemrograman
ID: 7145, Judul: Hafalan Shalat Delisa
PS D:\Project\Kuliah\SMT2\Praktikum-ASD\Jobsheet15>
```