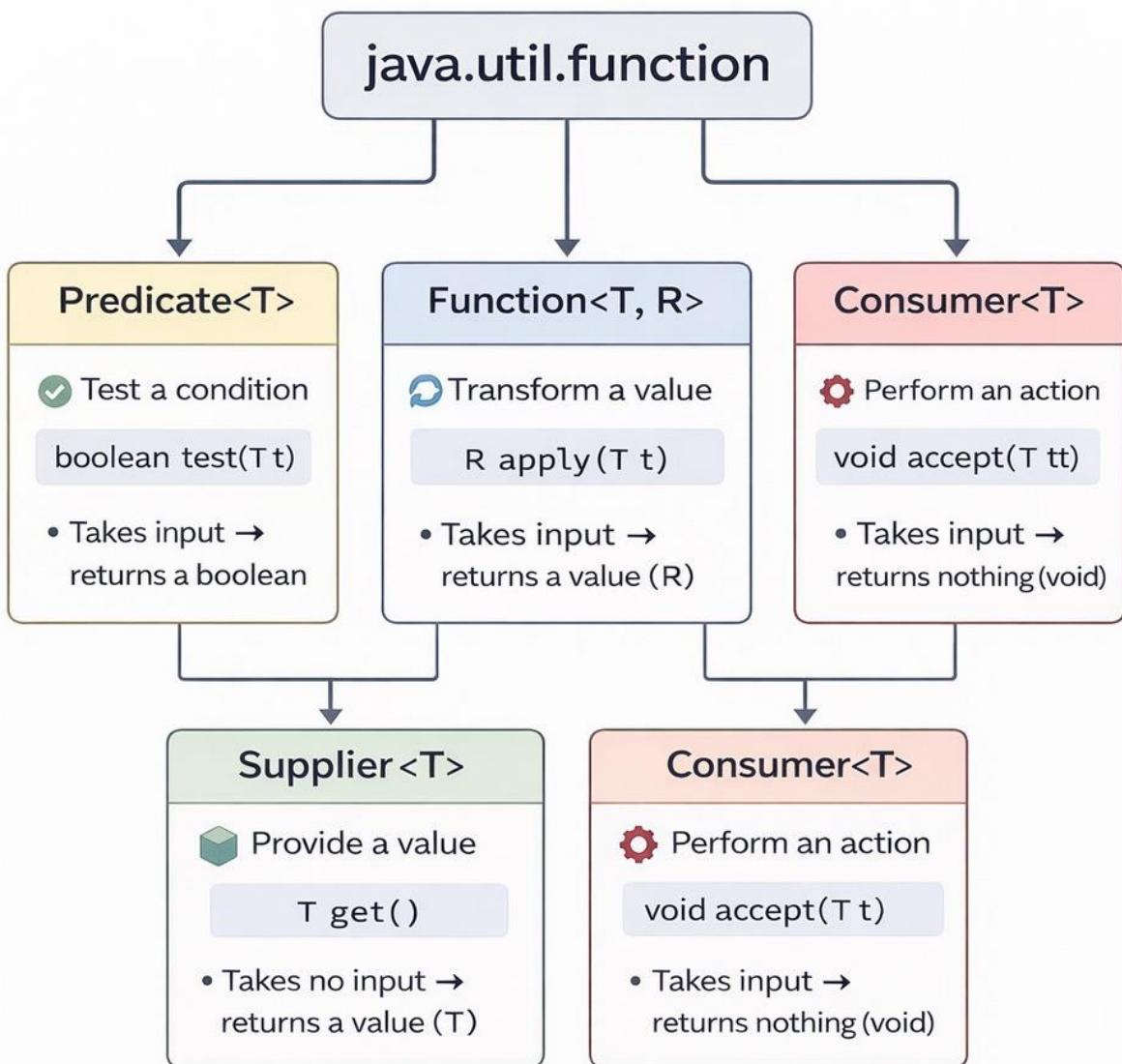


## Brief Introduction to `java.util.function`

The package `java.util.function` provides a set of **standard functional interfaces** that are used throughout Java's functional programming features—especially **Streams, Lambdas, and Optional**.



These interfaces represent **common function patterns** so you don't have to create your own.

The core four are:

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## 1 Predicate<T>

- **Purpose:** Test a condition
- **Returns:** boolean
- **Example use:** Filtering in streams
- **Method:** boolean test(T t)

**Used in:** filter(), removeIf(), validation logic

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## 2 Function<T,R>

- **Purpose:** Transform a value
- **Returns:** Any type (R)
- **Method:** R apply(T t)

**Used in:** map(), Optional.map(), data conversion

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## 3 Supplier<T>

- **Purpose:** Provide a value with **no input**
- **Returns:** A new value each time

- **Method:** T get()

**Used in: lazy initialization, orElseGet(), factories**

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#### 4. Consumer<T>

- **Purpose:** Accept a value and perform an action
- **Returns:** **nothing** (void)
- **Method:** void accept(T t)

**Used in: forEach(), logging, printing, saving**

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#### Why these matter

These four are the **building blocks** of functional programming in Java.  
**All advanced interfaces (UnaryOperator, BinaryOperator, BiFunction, etc.) extend these patterns.**



