# 17.DaystoYears,Weeks,andDaysConversion(White-BoxTesting)

Aim:

TowriteaJavaprogramthatconvertsagivennumberofdaysintoyears,weeks,anddays and validate the output using white-box testing with JUnit.

Algorithm:

1. **Step1:**Accept thenumberofdaysas input.
2. **Step2:**Calculatethenumberofyearsbydividingthetotaldaysby365(ignoringleap years).
3. **Step3:**Calculatethenumberofweeksbydividingtheremainingdays(after calculating years) by 7.
4. **Step4:**Calculatetheremainingdaysafter calculatingbothyearsand weeks.
5. **Step5:**WriteJUnittestcasestovalidatetheconversionlogic,includingedgecases like 0 days and small numbers of days.

**Code:**

**Step1:**

public class DaysConverter {

public String convertDays(int totalDays) {

int years = totalDays / 365;

int remainingDays = totalDays % 365;

int weeks = remainingDays / 7;

int days = remainingDays % 7;

return years + " years, " + weeks + " weeks, " + days + " days";

}

}

**Step 2:**

import org.junit.jupiter.api.BeforeEach;

import org.junit.jupiter.api.Test;

import static org.junit.jupiter.api.Assertions.\*;

public class DaysConverterTest {

private DaysConverter converter;

@BeforeEach

public void setUp() {

converter = new DaysConverter();

}

@Test

public void test500Days() {

assertEquals("1 years, 9 weeks, 1 days", converter.convertDays(500));

}

@Test

public void test1000Days() {

assertEquals("2 years, 26 weeks, 6 days", converter.convertDays(1000));

}

@Test

public void test1500Days() {

assertEquals("4 years, 3 weeks, 5 days", converter.convertDays(1500));

}

@Test

public void testZeroDays() {

assertEquals("0 years, 0 weeks, 0 days", converter.convertDays(0));

}

@Test

public void testOneDay() {

assertEquals("0 years, 0 weeks, 1 days", converter.convertDays(1));

}

@Test

public void testSixDays() {

assertEquals("0 years, 0 weeks, 6 days", converter.convertDays(6));

}

@Test

public void test365Days() {

assertEquals("1 years, 0 weeks, 0 days", converter.convertDays(365));

}

}

Sample Input:

# TestCase1:

* + - Input: 500
    - ExpectedOutput:
      * 1years,9weeks,1days

# TestCase2:

* + - Input:1000
    - ExpectedOutput:
      * 2years,26weeks,6days

# TestCase3:

* + - Input:1500
    - ExpectedOutput:
      * 4years,3weeks,5days

# TestCase4:

* + - Input:0
    - ExpectedOutput:
      * 0years,0weeks,0days

# TestCase5:

* + - Input:1
    - ExpectedOutput:
      * 0years,0weeks,1days

# TestCase6:

* + - Input:6
    - ExpectedOutput:
      * 0years,0weeks,6days

# TestCase7:

* + - Input: 365
    - ExpectedOutput:
      * 1years,0weeks,0days

SampleOutput:

# TestCase1:

* + - Input: 500
    - Output:1years,9weeks,1 days

# TestCase2:

* + - Input:1000
    - Output:2 years,26 weeks, 6 days

# TestCase3:

* + - Input:1500
    - Output:4years,3weeks,5 days

# TestCase4:

* + - Input:0
    - Output:0years,0weeks,0 days

# TestCase5:

* + - Input:1
    - Output:0years,0weeks,1 days

# TestCase6:

* + - Input:6
    - Output:0years,0weeks,6 days

# TestCase7:

* + - Input: 365
    - Output:1years,0weeks,0 days

Results:

* + **TestCase1:**Theprogramcorrectlyconverts500daysinto 1years,9weeks, 1 days.
  + **TestCase2:**Theprogramcorrectlyconverts1000daysinto2years,26weeks,6 days.
  + **TestCase3:**Theprogramcorrectlyconverts1500 daysinto4years,3weeks,5 days.
  + **TestCase4:** Theprogramcorrectlyhandles 0days and returns 0 years, 0 weeks,0 days.
  + **TestCase5:**Theprogramcorrectlyhandles1dayandreturns0years,0weeks,1 days.
  + **TestCase6:** Theprogramcorrectlyhandles 6days and returns 0 years, 0 weeks,6 days.
  + **TestCase7:**Theprogramcorrectlyhandles365daysandreturns1years,0weeks,0 days.



