Name of the Course : Complete Java SE8 Developer Bootcamp

Level : Easy

Tool Stack : Java8 and Junit4

Problem Statement : Provide a code solution to understand the use of Date class, Calendar class, LocalDate class and date formatting.

Description : The Government’s policy is any citizen whose age is 18 or above is eligible to enrol as a voter. The citizen is required to input various details including date of birth in the format of dd-mm-yyyy. You are required to develop a java application which will accept the date of birth in above format and check the age of the person is 18 or above or below. Create class Main with two static functions.

1. public boolean calculateAge(Date date). It will calculate the year differences between the input date and the system date. If the year difference is less than 18 then returns false otherwise true.

2. public static void main method, for accepting date of birth in the given format. If the input is in wrong format then display error message “Wrong date format”. If the format is correct then display message either “Valid age” or “Invalid age”.

Code:

**import** java.text.ParseException;

**import** java.text.SimpleDateFormat;

**import** java.time.LocalDate;

**import** java.time.Period;

**import** java.util.Calendar;

**import** java.util.Date;

**import** java.util.Scanner;

**public** **class** Main {

**public** **static** **boolean** calculateAge(String birthDate) **throws** ParseException

{

SimpleDateFormat simpleDateFormat=**new** SimpleDateFormat("dd-MM-yyyy");

Date dob=simpleDateFormat.parse(birthDate);

Calendar calendar=Calendar.*getInstance*();

calendar.setTime(dob);

**int** year=calendar.get(Calendar.***YEAR***);

**int** month=calendar.get(Calendar.***MONTH***)+1;

**int** day=calendar.get(Calendar.***DATE***);

LocalDate dateOfBirth=LocalDate.*of*(year, month, day);

LocalDate today=LocalDate.*now*();

Period difference=Period.*between*(dateOfBirth,today);

**int** age=difference.getYears();

**if**(age>=18)

**return** **true**;

**else**

**return** **false**;

}

**public** **static** **void** main(String[] args) {

Scanner scanner=**new** Scanner(System.***in***);

System.***out***.println("Enter Person's Date of birth (dd-mm-yyyy):");

String birthDate=scanner.nextLine();

**try**

{

**if**(*calculateAge*(birthDate))

System.***out***.println("Valid age");

**else**

System.***out***.println("Invalid age");

}

**catch**(ParseException pe)

{

System.***out***.println("Wrong Date Format.");

}

}

}

Junit Testing:

**import** **static** org.junit.Assert.\*;

**import** org.junit.Test;

**public** **class** MainTest {

@Test

**public** **void** testCalculateAge() {

**try**

{

*assertEquals*(**true**,Main.*calculateAge*("15-08-2002"));

*assertEquals*(**false**,Main.*calculateAge*("15-08-2010"));

}**catch**(Exception ee){}

}

}

Test Data1

Enter Person's Date of birth (dd-mm-yyyy):

15/08/2002

Wrong Date Format.

Test Data2

Enter Person's Date of birth (dd-mm-yyyy):

15-08-2002

Valid age

Test Data3

Enter Person's Date of birth (dd-mm-yyyy):

15-08-2010

Invalid age

Learning outcome: Participant could able to learn how to use the java date formatting, java.util.Date, java.util.Calendar, java.time.LocalDate classes.