A program for the date

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\*/

package printcalendar;

import java.util.Scanner;

public class PrintCalendar {

/\*\* Main method \*/

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

// Prompt the user to enter year

System.out.print("Enter full year (e.g., 2001): ");

int year = input.nextInt();

// Prompt the user to enter month

System.out.print("Enter month in number between 1 and 12: ");

int month = input.nextInt();

// Print calendar for the month of the year

printMonth(year, month);

}

/\*\* Print the calendar for a month in a year \*/

public static void printMonth(int year, int month) {

// Print the headings of the calendar

printMonthTitle(year, month);

// Print the body of the calendar

printMonthBody(year, month);

}

/\*\* Print the month title, e.g., May, 1999 \*/

public static void printMonthTitle(int year, int month) {

System.out.println(" " + getMonthName(month)

+ " " + year);

System.out.println("-----------------------------");

System.out.println(" Sun Mon Tue Wed Thu Fri Sat");

}

/\*\* Get the English name for the month \*/

public static String getMonthName(int month) {

String monthName = "";

switch (month) {

case 1: monthName = "January"; break;

case 2: monthName = "February"; break;

case 3: monthName = "March"; break;

case 4: monthName = "April"; break;

case 5: monthName = "May"; break;

case 6: monthName = "June"; break;

case 7: monthName = "July"; break;

case 8: monthName = "August"; break;

case 9: monthName = "September"; break;

case 10: monthName = "October"; break;

case 11: monthName = "November"; break;

case 12: monthName = "December";

}

return monthName;

}

/\*\* Print month body \*/

public static void printMonthBody(int year, int month) {

// Get start day of the week for the first date in the month

int startDay = getStartDay(year, month);

// Get number of days in the month

int numberOfDaysInMonth = getNumberOfDaysInMonth(year, month);

// Pad space before the first day of the month

int i = 0;

for (i = 0; i < startDay; i++)

System.out.print(" ");

for (i = 1; i <= numberOfDaysInMonth; i++) {

System.out.printf("%4d", i);

if ((i + startDay) % 7 == 0)

System.out.println();

}

System.out.println();

}

/\*\* Get the start day of month/1/year \*/

public static int getStartDay(int year, int month) {

final int START\_DAY\_FOR\_JAN\_1\_1800 = 3;

// Get total number of days from 1/1/1800 to month/1/year

int totalNumberOfDays = getTotalNumberOfDays(year, month);

// Return the start day for month/1/year

return (totalNumberOfDays + START\_DAY\_FOR\_JAN\_1\_1800) % 7;

}

/\*\* Get the total number of days since January 1, 1800 \*/

public static int getTotalNumberOfDays(int year, int month) {

int total = 0;

// Get the total days from 1800 to 1/1/year

for (int i = 1800; i < year; i++)

if (isLeapYear(i))

total = total + 366;

else

total = total + 365;

// Add days from Jan to the month prior to the calendar month

for (int i = 1; i < month; i++)

total = total + getNumberOfDaysInMonth(year, i);

return total;

}

/\*\* Get the number of days in a month \*/

public static int getNumberOfDaysInMonth(int year, int month) {

if (month == 1 || month == 3 || month == 5 || month == 7 ||

month == 8 || month == 10 || month == 12)

return 31;

if (month == 4 || month == 6 || month == 9 || month == 11)

return 30;

if (month == 2) return isLeapYear(year) ? 29 : 28;

return 0; // If month is incorrect

}

/\*\* Determine if it is a leap year \*/

public static boolean isLeapYear(int year) {

return year % 400 == 0 || (year % 4 == 0 && year % 100 != 0);

}

}