オブジェクト指向プログラミング演習 No.4 & No.5

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1.

ソースコード

```
import java.util.Scanner;

class Day{
	private int year;
	private int month;
	private int date;



	Day(int year, int month, int date){
		this.year = year;
		this.month = month;
		this.date = date;
	}

	int getYear() {return year;}
	int getMonth() {return month;}
	int getDate() {return date;}

	void setYear(int year) {this.year = year;}
	void setMonth(int month) {this.month = month;}
	void setDate(int date) {this.date = date;}

	void set(int year, int month, int date) {
		this.year = year;
```

```
                this.month = month;
                this.date = date;
        }

        int dayOfWeek(){
                int y = year;
                int m = month;
                if (m == 1 || m == 2){
                        y--;
                        m += 12;
                }
                return (y + y / 4 -y / 100 + y/ 400 + (13 * m + 8) / 5 + date) % 7;
        }
}

class DayTester{

        public static void main(String[] args){
                Scanner stdIn = new Scanner(System.in);
                String[] wd = {"日","月", "火", "水", "木", "金", "土"};

                System.out.println("誕生日を西暦で入力せよ");
                System.out.print("年:"); int y = stdIn.nextInt();
                System.out.print("月:"); int m = stdIn.nextInt();
                System.out.print("日:"); int d = stdIn.nextInt();

                Day birthday = new Day(y, m, d);
                Day homework1 = new Day(500, 1, 1);
                Day homework2 = new Day(1000, 1, 1);
                Day homework3 = new Day(2000, 1, 1);

                System.out.println("あなたの誕生日" + birthday.getYear() + "年" +
```

```
birthday.getMonth() + "月" + birthday.getDate() + "日は" + wd[birthday.dayOfWeek()] +
"曜日です");
                        System.out.println(homework1.getYear() + "年" +
homework1.getMonth() + "月" + homework1.getDate() + "日は" +
wd[homework1.dayOfWeek()] + "曜日です");
                        System.out.println(homework2.getYear() + "年" +
homework2.getMonth() + "月" + homework2.getDate() + "日は" +
wd[homework2.dayOfWeek()] + "曜日です");
                        System.out.println(homework3.getYear() + "年" +
homework3.getMonth() + "月" + homework3.getDate() + "日は" +
wd[homework3.dayOfWeek()] + "曜日です");
            }


}
```

実行結果

```
gotouwatarusMBP:homework gotouwataru$ java DayTester
誕生日を西暦で入力せよ
年:1999
月:1
日:8
あなたの誕生日 1999 年 1 月 8 日は金曜日です
500 年 1 月 1 日は金曜日です
1000 年 1 月 1 日は水曜日です
2000 年 1 月 1 日は土曜日です
```

2.

ソースコード

```
import java.util.Scanner;
class DayAssign{
```

```
	public static void main(String[] args){
		Scanner stdIn = new Scanner(System.in);
		String[] wd = {"日","月", "火", "水", "木", "金", "土"};

		System.out.println("誕生日を西暦で入力せよ");
		System.out.print("年:"); int y = stdIn.nextInt();
		System.out.print("月:"); int m = stdIn.nextInt();
		System.out.print("日:"); int d = stdIn.nextInt();

		Day birthday = new Day(y, m, d);

		System.out.println("あなたの誕生日" + birthday.getYear() + "年" +
birthday.getMonth() + "月" + birthday.getDate() + "日は" + wd[birthday.dayOfWeek()] +
"曜日です");
		Day xDay = new Day(y, m, d);
		System.out.println("xDay = " + xDay.getYear() + "年" +
xDay.getMonth() + "月" + xDay.getDate() + "日は(" + wd[xDay.dayOfWeek()] + ")");
		xDay.set(2100, 12, 31);

		System.out.println("birthday = " + birthday.getYear() + "年" +
birthday.getMonth() + "月" + birthday.getDate() + "日は(" + wd[birthday.dayOfWeek()]
+ ")");
		System.out.println("xDay = " + xDay.getYear() + "年" +
xDay.getMonth() + "月" + xDay.getDate() + "日は(" + wd[xDay.dayOfWeek()] + ")");

	}

}
```

実行結果

```
gotouwatarusMBP:homework gotouwataru$ java DayAssign
誕生日を西暦で入力せよ
```

```
年:1999
月:1
日:8
あなたの誕生日 1999 年 1 月 8 日は金曜日です
xDay = 1999 年 1 月 8 日は(金)
birthday = 1999 年 1 月 8 日は(金)
xDay = 2100 年 12 月 31 日は(金)
```

3

ソースコード

```
import java.util.Scanner;
class DayComparator3{

	static boolean compDay(Day d1, Day d2){
		return d1.getYear() == d2.getYear() && d1.getMonth() ==
d2.getMonth() && d1.getDate() == d2.getDate();
	}
	static boolean compDayOfWeek(Day d1, Day d2){
		String[] wd = {"日","月", "火", "水", "木", "金", "土"};
		return wd[d1.dayOfWeek()] == wd[d2.dayOfWeek()];
	}

	public static void main(String[] args){
		Scanner stdIn = new Scanner(System.in);

		int y, m, d;
		System.out.println("日付 1 を入力せよ");
		System.out.print("年:"); y = stdIn.nextInt();
		System.out.print("月:"); m = stdIn.nextInt();
		System.out.print("日:"); d = stdIn.nextInt();
		Day day1 = new Day(y, m, d);
```

```
                System.out.println("日付 2 を入力せよ");
                System.out.print("年:"); y = stdIn.nextInt();
                System.out.print("月:"); m = stdIn.nextInt();
                System.out.print("日:"); d = stdIn.nextInt();
                Day day2 = new Day(y, m, d);

                if (compDay(day1, day2)){
                        System.out.println("等しいです");
                } else {
                        System.out.println("等しくないです");
                }
                if (compDayOfWeek(day1, day2)){
                        System.out.println("同じ曜日です");
                } else {
                        System.out.println("同じ曜日ではないです");
                }
        }

}
```

実行結果

```
gotouwatarusMBP:homework gotouwataru$ java DayComparator3
日付 1 を入力せよ
年: 1
月:1
日:1
日付 2 を入力せよ
年:1
月:1
日:8
等しくないです
```

同じ曜日です

4

ソースコード

```
class Account
{
	private String name;
	private String no;
		private long balance;
		private Day launchDay;

	Account(String name, String no, long balance, Day launchDay)
	{
		this.name = name;
		this.no = no;
				this.balance = balance;
				this.launchDay = new Day(launchDay);
	}

	public String getName(){
				return name;
		}
	public String getNo(){
				return no;
		}
	public long getBalance(){
				return balance;
		}
		public Day getLaunchDay(){
				return new Day(launchDay);
```

```
        }
    void deposit(long k){
                balance += k;
        }
    void withdraw(long k){
                balance -= k;
        }
}

class AccountTester
{
    public static void main(String[] args)
    {
                Account adachi = new Account("足立太郎", "123456", 1000,  new
Day(2010, 10,15));
                Day dp = adachi.getLaunchDay();
                Account nakata = new Account("中田次郎", "654321",  200,  new
Day(2011, 1,27));
                Day pp = nakata.getLaunchDay();

        System.out.println("＝＝＝足立太郎の口座＝＝＝");
        System.out.println("口座名義：" + adachi.getName());
        System.out.println("口座番号：" + adachi.getNo());
                System.out.println("預金残高：" + adachi.getBalance());
                System.out.println("開設日：" + dp);

        System.out.println("＝＝＝中田次郎の口座＝＝＝");
        System.out.println("口座名義：" + nakata.getName());
        System.out.println("口座番号：" + nakata.getNo());
                System.out.println("預金残高：" + nakata.getBalance());
                System.out.println("開設日：" + pp);
```

```
    }
}
```

実行結果

gotouwatarusMBP:homework gotouwataru$ java AccountTester

```
＝＝＝足立太郎の口座＝＝＝
口座名義：足立太郎
口座番号：123456
預金残高：1000
開設日：2010 年 10 月 15 日(金)
＝＝＝中田次郎の口座＝＝＝
口座名義：中田次郎
口座番号：654321
預金残高：200
開設日：2011 年 01 月 27 日(木)
```