

Learning Java by Projects

PROJECT 18: PRINTCALENDAR

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Objectives

Print Out the calendar of a month.

Input:

- **int day:** The day of the first day of the month.
 - 0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, ..., 6: Saturday
- **int month:** 1: Jan, ... 12: December
- **int year:** 2020

MONTHLY CALENDAR 2020

July

| Su | Mo | Tu | We | Th | Fr | Se |
|----|----|----|----|----|----|----|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

ACTIVITY 1

Planning



Get Days of the Month

```
int getDaysOfTheMonth(int month, int year)
```



Print Title

```
public static void printTitle()
```

July 2020

Su Mo Tu We Th Fr Sa



Print Monthly Body

```
public void printBody(int days, in firstDay)
```

| | | | | | | |
|----|----|----|----|----|----|----|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |



isLeapYear(): Optional

```
public boolean isLeapYear()
```


ACTIVITY 2

Coding



Program Structure

- Work out the program structure first.
- Use Stub (mock function) if your function is not ready yet.
- PrintTitle, and, Then, printBody



PrintTitle

- Easy, just need to line up the Days (Su, Mo, and etc) in a line.



PrintBody

- Use a running index c represent the location of the table.
- Change line whenever $c \% 7 == 6$. Every 7 print boxes, you change line once.
- Using a loop index i as the date of the print Boxes

ACTIVITY 3

Given any month



Jan 1, 1 AD

- Given the fact that Jan 1, 1 AD is Monday.
- Can you print out a monthly calendar for any month ?
- Given month and year only, print out the calendar.

Example:

March of 1900



Use Successive Addition

- Use successive Addition to find out how many days from the first day of the target month to the Jan. 1, 1 AD.
- Then, take modulo for 7.
- You should be able to determine the day of the first day of the target month.