

University of Massachusetts Dartmouth
Department of Electrical and Computer Engineering

ECE 160
Lab 9 (Worth 200 points)

Name: `gencal.cpp`
Due: See <http://ece160.org>

Overview

In this program you will use the functions (`getdaycode()`, `getndim()`) that you created previously. You should also create the function `printhead()` and `genmonth()`, discussed below. Lastly, you need to create the `main()` program.

Problem statement:

Prompt the user for a starting month/year, and the number of months (all on one line). Print out a calendar for the starting month, and then each month following until the correct number of months has been printed. The program should then again prompt the user for a starting month/year and the number of months. This should repeat until 0 is entered for the number of months. Several example runs are at the end of this handout.

General Hints:

`printhead()` function – the prototype for this function should be:

```
void printhead(int m, int y);
```

The function should print the alphabetic month (centered), four digit year, and the three character abbreviation for days of the week. For example, if the function is called with values, 4 and 2017, the function should print:

```
    April 2017
Sun Mon Tue Wed Thu Fri Sat
```

Note there is one space before Sun.

`genmonth()` function – the prototype for this function should be:

```
void genmonth(int m, int y);
```

Use `genmonth()` to generate one month you could call that function repeatedly however many times were required (based on number of months requested). Each time the function was called you would need to increment the month and pass a different month and maybe year to it (when the month was 13, you would need to reset it to 1, and increment the year).

Regarding generating a single month, there are five main considerations:

1. Parameters of function - probably `month` and `year` are needed.
2. Printing the month name and year - you have a function which does this...use it. It is perfectly ok for a function to call another function.
3. Starting day - to start on the correct day, you need to skip some number of spaces (four spaces for each day). I.e. if the first day of the month is on a Wednesday (daycode is 3) you need to skip 3 sets of four spaces each; you can put a `printf(" ");` in a loop and loop the needed number of times.
4. Correct number of days in month - you have a function to determine how many days are in each month...use it!
5. Determine when week ends - There are two ways to check this. The first way is to use the `getdaycode()` function, and if the `daycode` is 6, print a `"\n"`. The other way to do it is to start some kind of a counter when you are first printing leading spaces (to start the month). Whenever that counter is a multiple of 7, print a `"\n"`. You are welcome to do it either way.

Some examples:

Enter m,y,n: 10 2012 4

October 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	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			

November 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				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	

December 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						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					

January 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		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		

Enter m,y,n: 12 1999 4

December 1999

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			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	

January 2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						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					

February 2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		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				

March 2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			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	

Enter m,y,n: 12 1899 4

December 1899

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						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					

January 1900

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	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			

February 1900

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					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		

March 1900

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					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						

Enter m,y,n: 0 0 0
Press any key to continue . . .

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