**Reg. # : \_\_\_\_\_SP23-BCS-135 , SP23-BCS-018\_\_\_\_\_\_\_**

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**Course Title : \_\_\_\_\_\_PROGRAMMING FUNDAMENTALS\_\_\_**

**Section : \_\_\_\_\_\_\_\_A\_\_**

**PF FINAL GROUP PROJECT\_\_**

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**Q : GENERATE A C PROGRAM USING THE CONCEPTS WE HAVE STUDIED IN C LANGUAGE?**

**ANS:**

Calendar: Develop a program that generates a monthly calendar for a specified year and month. Display the days of the week, dates, and highlight the current day.

**CODE:**

#include <stdio.h>

int isLeapYear(int year) {

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

return 1;

else

return 0;

}

int getDayOfWeek(int year, int month, int day) {

int century, yearInCentury, dayOfWeek;

if (month <= 2) {

month += 12;

year--;

}

century = year / 100;

yearInCentury = year % 100;

dayOfWeek = (day + 13 \* (month + 1) / 5 + yearInCentury + yearInCentury / 4 + century / 4 + 5 \* century) % 7;

// Adjust for C's 0-based indexing of days (0 = Saturday, 1 = Sunday, etc.)

dayOfWeek = (dayOfWeek + 6) % 7;

return dayOfWeek;

}

void printCalendar(int year, int month) {

int daysInMonth, dayOfWeek, day, i;

// Array to store the number of days in each month

int daysPerMonth[] = {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31};

// Check if it's a leap year and update February's days accordingly

if (isLeapYear(year))

daysPerMonth[1] = 29;

// Get the day of the week for the 1st day of the specified month

dayOfWeek = getDayOfWeek(year, month, 1);

// Print the month and year

printf("\n----------- %d / %02d -----------\n", year, month);

// Print the days of the week

printf("Sun Mon Tue Wed Thu Fri Sat\n");

// Adjust the starting position of the first day

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

printf(" ");

// Print the dates

daysInMonth = daysPerMonth[month - 1];

for (day = 1; day <= daysInMonth; day++) {

printf("%-5d", day);

if ((dayOfWeek + day) % 7 == 0)

printf("\n");

}

printf("\n");

}

int main() {

int year, month;

printf("Enter the year: ");

scanf("%d", &year);

printf("Enter the month (1-12): ");

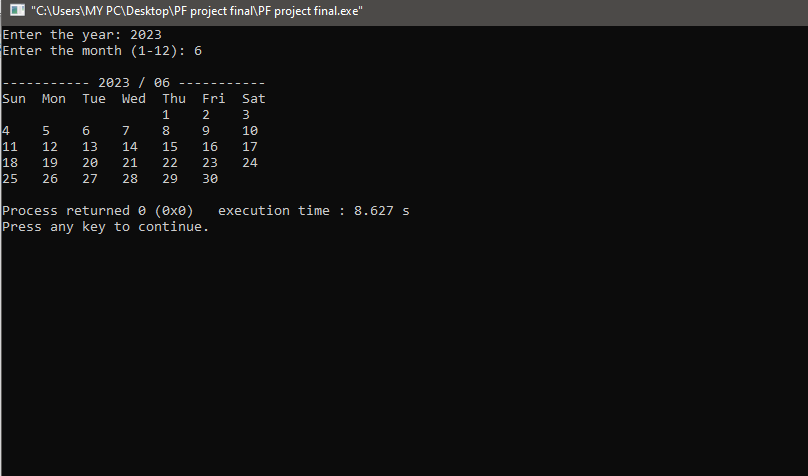
scanf("%d", &month);

printCalendar(year, month);

return 0;

}

**OUTPUT**

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