Feras Ahmed

Assignment 4

11/02/15

Code:

// main.cpp

// Assignment 4

// Created by Feras Ahmed on 11/02/15.

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#include <iostream>

#include <ctime>

#include <sstream>

#include <cmath>

#include <iomanip>

#include <cstdlib>

using namespace std;

int get\_day\_of\_week(int,int,int);

bool isleap (int year){

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

return (true);

else

return (false);

}

int number\_of\_month\_days(int month, int year){ //4.1 Find lenght of Month

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

return 30;

else if (month == 2)

{ bool isleap = (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0);

if (isleap)

return 29;

else

return 28;

}

else

return 31;

}

//int dayOfWeek (int month, int day, int year){

// return (get\_century\_value(year) + );

//}

//4.2 Find the Day of the Week

int get\_day\_of\_week(int month, int day, int year){

int weekDay;

if (year < 0) //invalid year

return 0;

else

{

if (month < 3) //Jan = 13 & Feb = 14 and year is the previous year

{

month += 12;

year -= 1;

}

weekDay = (day + 2\*month + 3\*(month+1)/5 + year + year/4 - year/100 + year/400 + 1) % 7;

if (month > 12)

{ //reset Jan & Feb back to 1 &2

month -= 12;

year += 1 ;

}

}

return weekDay;

}

/\* int get\_day\_of\_week2(int month, int day, int year) //Find the Day of the week

{

//Uspensky and Heaslet gave the following formula, in Elementary Number Theory, 1939, for the Gregorian calendar:

// W=D+floor(2.6m-0.2)+y+floor(y/4)+floor(c/4)-2c (mod 7)

int weekDay,century;

century=year/100;

weekDay=(day+((int) floor(2.6\*month-0.2)+year)+(int) floor(year/4.0)+((int) floor(century/4.0)-2\*century))%7;

return weekDay;

}

\*/

int number\_of\_days\_in\_a\_year(int year)

{

//Code here

return 0;

}

int get\_first\_day\_of\_year (int year){

double dyear=(double) year;

int first\_day\_of\_year;

first\_day\_of\_year = ( ((year - 1) \* 365) + ( (int) floor((dyear - 1) / 4) ) + ( (int) (floor(dyear - 1) / 100 )) + ( (int) floor((dyear - 1) / 400 )))%7;

return first\_day\_of\_year;

}

int get\_first\_day\_of\_month (int month, int year){

//Code here

return 0;

}

string get\_month\_name(int month){

switch (month){

case 1:

return "January";

break;

case 2:

return "February";

break;

case 3:

return "March";

break;

case 4:

return "April";

break;

case 5:

return "May";

break;

case 6:

return "June";

break;

case 7:

return "July";

break;

case 8:

return "August";

break;

case 9:

return "September";

break;

case 10:

return "October";

break;

case 11:

return "November";

break;

case 12:

return "December";

break;

}

return 0;

}

string get\_day\_of\_week\_short\_name(int get\_day\_of\_week){

string day\_of\_week;

if (get\_day\_of\_week == 0)

day\_of\_week = "Sun";

else if (get\_day\_of\_week == 1)

day\_of\_week = "Mon";

else if (get\_day\_of\_week == 2)

day\_of\_week = "Tue";

else if (get\_day\_of\_week == 3)

day\_of\_week = "Wed";

else if (get\_day\_of\_week == 4)

day\_of\_week = "Thu";

else if (get\_day\_of\_week == 5)

day\_of\_week = "Fri";

else if (get\_day\_of\_week == 6)

day\_of\_week = "Sat";

return day\_of\_week;

}

string get\_day\_of\_week\_name(int get\_day\_of\_week){

string day\_of\_week;

if (get\_day\_of\_week == 0)

day\_of\_week = "Sunday";

else if (get\_day\_of\_week == 1)

day\_of\_week = "Monday";

else if (get\_day\_of\_week == 2)

day\_of\_week = "Tuesday";

else if (get\_day\_of\_week == 3)

day\_of\_week = "Wednesday";

else if (get\_day\_of\_week == 4)

day\_of\_week = "Thursday";

else if (get\_day\_of\_week == 5)

day\_of\_week = "Friday";

else if (get\_day\_of\_week == 6)

day\_of\_week = "Saturday";

return day\_of\_week;

}

int day\_of\_forever(int month, int day, int year){

//Code here

return 0;

}

void write\_day\_names\_console() {

cout << "\n\t SUN MON TUE WED THU FRI SAT\n\t";

}

void draw\_calendar\_console(int month,int year){

write\_day\_names\_console();

int spacesCount = get\_day\_of\_week(month, 1, year);

for (int i = 0; i < spacesCount; i++)

cout << setw(4) << "";

int days = number\_of\_month\_days(month, year);

for (int j = 1; j <= days; j++){

cout << setw(4) << j;

if((spacesCount +j) % 7 == 0)

cout << "\n\t";

}

}

int main(){

int month, year, day;

bool more;

char c;

more=true;

while (more)

{

cout<<"\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Welcome to BTE320 Calendar\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"<<endl<<endl;

cout << "Please enter the year:";

cin >> year;

cout<<endl;

cout << "Please enter the month (1 for Jan, 2 for Feb, etc.):";

cin >> month;

cout<<endl;

cout << "Please enter the day (0 for Sunday, 1 for Monday, etc.):";

cin >> day;

cout<<endl;

cout << "1. Length of a Month— Number of Days in " << get\_month\_name(month) << ": " << number\_of\_month\_days(month, year)<< endl; // 4.1 Function Test-- working

//cout << day\_of\_year(month, day, year) << endl; //4.2

//cout << get\_day\_of\_week(month, day, year) << endl; // 4.5 Function Test-- working

cout << get\_day\_of\_week\_short\_name(day) << endl; // function working

cout << get\_day\_of\_week\_name(day) << endl; //function working

cout<<"\*\*\*\*\*\*\*\*\*\*\*\*\* "<<get\_month\_name(month)<<" "<<year<<" \*\*\*\*\*\*\*\*\*\*\*\*"<<endl<<endl;

draw\_calendar\_console(month, year);

cout<<endl;

cout<<"\n Would you like to view another calendar?(Enter N to end the program):";

cin>>c;

if (c=='N' || c=='n'){

more=false;

exit(0);

}

}

return 0;

}

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Output:



