

COMSC-200

Lab 2

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6 September 2020

1 Date

1. Date

Design a class called `Date`. The class should store a date in three integers: `month`, `day`, and `year`. There should be member functions to print the date in the following forms:

12/25/2018

December 25, 2018

25 December 2018

Demonstrate the class by writing a complete program implementing it.

Input Validation: Do not accept values for the day greater than 31 or less than 1. Do not accept values for the month greater than 12 or less than 1.

```
1 // Ryan Jacoby
2
3 #include <iostream>
4
5 #include "Date.h"
6
7 using namespace std;
8
9 int main() {
10     Date d = Date();
11     d.setDay(6);
12     d.setMonth(9);
13     d.setYear(2020);
14
15     Date d1 = Date(25, 12, 2021);
16
17     cout << "Date 1:\n";
18     cout << d.getDateA() << '\n';
19     cout << d.getDateB() << '\n';
20     cout << d.getDateC() << '\n';
21
22     cout << "\nDate 2:\n";
23     cout << d1.getDateA() << '\n';
24     cout << d1.getDateB() << '\n';
25     cout << d1.getDateC() << '\n';
26
27     return 0;
28 }
```

Listing 1: main.cpp

```

1 // Ryan Jacoby
2
3 #ifndef Date_h
4 #define Date_h
5
6 using namespace std;
7
8 class Date {
9 private:
10     int day;
11     int month;
12     int year;
13 public:
14     Date();
15     Date(int day, int month, int year);
16
17     void setDay(int day);
18     void setMonth(int month);
19     void setYear(int year);
20
21     string getDateA();
22     string getDateB();
23     string getDateC();
24 };
25
26 #endif

```

Listing 2: Date.h

```

1 // Ryan Jacoby
2
3 #include<string>
4
5 #include"Date.h"
6
7 using namespace std;
8
9 string months[] = {"January", "February", "March", "April", "May", "June", "July",
10     "August", "September", "October", "November", "December"};
11
12 Date::Date() {
13     this->day = 1;
14     this->month = 1;
15     this->year = 0;
16 }
17
18 Date::Date(int day, int month, int year) {
19     if(day > 0 && day < 32) this->day = day;
20     else this->day = 1;
21
22     if(month > 0 && month < 13) this->month = month;
23     else this->month = 1;
24
25     this->year = year;
26 }
27
28 void Date::setDay(int day) {
29     if(day > 0 && day < 32) this->day = day;
30     else this->day = 1;

```

```

30 }
31
32 void Date::setMonth(int month) {
33     if(month > 0 && month < 13) this->month = month;
34     else this->month = 1;
35 }
36
37 void Date::setYear(int year) {
38     this->year = year;
39 }
40
41 string Date::getDateA() {
42     return to_string(this->month) + "/" + to_string(this->day) + "/" + to_string(
43         this->year);
44 }
45
46 string Date::getDateB() {
47     return months[this->month - 1] + " " + to_string(this->day) + "," + to_string(
48         this->year);
49 }
50
51 string Date::getDateC() {
52     return to_string(this->day) + " " + months[this->month - 1] + " " + to_string(
53         this->year);
54 }

```

Listing 3: CoinImp.cpp

```

rjacoby@ryan-pc: ~/devel/cpp/comsc200/Lab 2
> ./lab2
Date 1:
9/6/2020
September 6, 2020
6 September 2020

Date 2:
12/25/2021
December 25, 2021
25 December 2021

```