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CS1350
Program 1
DayType
Due Date: 9/15/17

Design Document

Classes offer a more secure method to code programs because they the give user less access to sensitive information. Design a program that manipulates the days of the week so that the user can assign and print the day, return the previous, current, and next day, be able to predict the future, all while using appropriate classes, files, and constructors.

Calculations

Definitions

D = User input of set day
P = User input of days to be added
string week[7]= Array of days of the week

Future prediction

If the Quantity < 7
[(D-1) + P]
If the Quantity >= 7
[(D-1) + P] %7

Day Prediction

Using array containing days of the weeks
week[D-1] = current day

Week[D] = future day
//Error check for Sunday if (D == 7)
//Future day = week[0]

Week[D-2] = previous day
//Error check for Saturday if (D == 1)
//Previous day = week[6]

UML

+ string getDay(int x);
+ string nextDay(int y);
+ string prevDay(int z);
+ void predictDay(int r, int p);
+ void menu();
+ dayType(string a, string b, string c, string d, string e, string f, string g);
+ ~dayType();
- string week[7];
- string val;

Pre-conditions:

- Using the class data type
- User follows instruction
- Program utilizes user input to manipulate array of weeks

Post-conditions:

- Set day can be manipulated to find previous and next day
- Gathered data can be returned and printed to the screen
- Set day can be manipulated to find any day of the week X amount of days in the future

Reflection

Overview:

The purpose of this program was to introduce the class data type. Using the class data type, the programmer's job was to allow a user to set a day of the week, and based off the users input the program should be able to complete tasks and also make a series of various other predictions. User input is necessary throughout the duration of the program.

Challenges and Solutions:

The biggest challenge I faced with this program was using and understanding private variables. When I first coded this program, I incorrectly used the private variable and missed the point of the project because my program worked as intended. However, after correcting the issue I ran into a few major problems with my code. I later found out that my private variable had been declared incorrectly. After properly defining my private variable and editing a few lines in my code, everything ran smoothly.

Lesson Learned:

By completing this program, I learned about the class data type. I found out how to properly code and output data using the class data type.

Output Listing

```
What day is it?
To select a day, enter
1. Sunday
2. Monday
3. Tuesday
4. Wednesday
5. Thursday
6. Friday
7. Saturday

4

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Today is Wednesday

Tomorrow will be Thursday

Yesterday was Tuesday
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Enter a positive integer to predict the future
51

Wednesday + 51 days = Friday

The destructor is live!!
```