Personnel Report Program

This assignment consists of four parts, and each part builds on the previous.

Part I - Num Days Class

Create a class called NumDays. The class's purpose is to store a value that represents a number of work hours and convert it to a number of days. For example, 8 hours would be converted to 1 day, and 12 hours would be converted to 1.5 days. The class should have a constructor that takes the number of hours, as well as member functions for storing and retrieving the hours and the days. The number of days and hours should remain in sync at all times. The class should also have the following overloaded operators:

- **+ Addition operator:** When two NumDays are added together, the overloaded + operator should return a NumDays object that represents the sum of the two object's hours and the number of days should be updated accordingly.
- **- Subtraction operator:** When two NumDays are subtracted, the overloaded - operator should return a NumDays object that represents the difference of the two object's hours and the number of days should be updated accordingly.
- **++ Prefix and postfix increment operator:** These two operators should increment the number of hours stored in the object. When incremented, the number of days should be re-calculated.
- **-- Prefix and postfix decrement operator:** These two operators should decrement the number of hours stored in the object. When decremented, the number of days should be re-calculated.

Part 2 - Time Off

Create a class called TimeOff. The purpose of this class is to track an employee's sick days and vacation days. This class should have two member instances of the NumDays class: one to track sick days and one to track vacation days. Finally, the class should have the following methods:

- **void setMonthsWorked(double months):** specifies how many months an employee has worked. When this method is called, the employee should be given 8 hours of sick time and 12 hours of vacation time for each month.
- **double getSickDays() const:** returns the number of sick days the employee has earned.
- **double getVacationDays() const:** return the number of vacation days the employee has earned.

Part 3 - Personnel Report

Write a class called PersonnelReport. This class should have a constructor that takes the full name of an employee, the ID of an employee, and the number of months worked by an employee. This class should use an instance of the TimeOff class you created in Part 2 to calculate the number of sick days and vacation days the employee has earned. The class should override the insertion operator << so that it prints the employee's name, ID, and number of sick and vacation days earned by the employee.

Part 4 - Putting it All Together

Use the following main function to test the classes you created in the previous three parts:

```
int main()
{
  try
  {
    UserInput i;
    FileReader in(i.readString("Enter employee file: "));
    while (in.next())
    {
      vector<string> tokens = split(in.readString(), ',');
      PersonnelReport rpt(tokens[0], tokens[1], atof(tokens[2].c_str()));
      cout << rpt << endl;
    }
  }
  catch (const char * msg)
  {
    cout << msg << endl;
  }
}
```

This main function reads in a text file that contains information about employees. Specifically, each line in the file contains an employee's name, ID, and number of months worked. I will provide you with a copy of a file to test your program. If your classes are implemented correctly, and you use the text file I provided, the main function above should print the following output:

```
Tom Jones (P111111) Days Off:12 Sick Days: 18
Sally Smith (P222222) Days Off:32 Sick Days: 48
Jane Holt (P333333) Days Off:6 Sick Days: 9
Kim West (P444444) Days Off:8 Sick Days: 12
Frank Trust (P555555) Days Off:67 Sick Days: 100.5
Eddie Bund (P666666) Days Off:19 Sick Days: 28.5
```

When you are done with this assignment, please push your entire program directory to your class sponsored GitHub repository so it can be graded.