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**Design Analysis of program 3**

In my program, I update some functions in order to make it work better. The program has six classes: the first class is the manager which controls all the other class by having “has a relation” with the other classes. This class has only one functions that is manage all, and this functions controls everything in my program. It has a switch case and each case is a class, so I can call any of the other three classes. In addition, each case has the class functions, that means that each case call the functions of its own class, and I used while loop to make the user can choose any application again.

The second class is the messenger which is an array of linear linked list, and this class has data members as the head pointer, and it has functions as insert, but the thing that I want to focus on it the overloading function which I used. I used the += operator as a wrapper function for the insertion, so that it can have the ability to work with the objects of the class. The other operator overloading which I used in this class is -=, and also it is a wrapper function for deleting the text message. The third class is the node of the messenger which has the next pointer and the text message. Also, it has function as get and set the next pointer, but the operator overloading which I used is the istream >> so that it can get the text message from the user, and the ostream << operator so that it can be used to display the text message to the user. The relation between the node and the messenger is “ has a relation”.

The forth class is the calculator class, and this class is very simple, it just has 2 data members, and it has four operations for adding, subtracting, multiplying, and the division. In addition, there are two operator overloading that I used which are the iostream >> to get the data members from the user and ostream << to display the result to the user. The fifth class is the game node which is the node that has two directions which are two pointers one for left and the other for right direction. The sixth class is the game class which has two functions: the first function, I made two nodes and set the left pointer of the first node to the second node, and make check after that which spot is connected to the other node, while the second function for playing the maze game.