Develop a safe_pointer class in C++. You may choose between the **Tombstones**, **lock and key**, **reference count** or **garbage collection** methods. Provide a discussion of how your implementation avoids dangling pointers and lost objects.

```cpp
class safe_pointer {
    ..... 
}
safe_pointer x, y;
```

write a small program to demonstrate your safe_pointer class. (be prepared to demo your program or e-mail it to me).

**Extra Credit (10 pts.):** Develop your class as a template which can accept any type.

**Note:** If you are not planning to develop your class as a template, develop it as a safe_integer_pointer class.

**Note:** For this assignment, you have the option to work with up to two other classmates and form a team. If you choose to do so, each member should be able to fully articulate the solution adopted/developed by the team. Also, each member should document what aspect of the design and implementation they worked on individually.

**What to hand in?**
1) A cover page with the usual information
2) Discussion of your solution with a design diagram
3) Program Listing (fully documented)
4) Sample output (annotated if necessary)
5) Staple your paper. (No loose papers please)