Secure & Dependable System Homework 5

5.1

Recalling the definition of a class invariant as stated in the lecture notes, we get an understanding of what a class invariant is. This understanding is that a class invariant expresses some constraints that must be true at every stable point in time during the life of an object, which is why length(elements) == size is a sufficient class invariant, since according to the properties of stacks, the number of elements determine the size of the stack, therefore ~~any~~ at any point of time, the size of the stack is equal to the length of the elements, and this is a truth preserved by operations.

5.2

```
class Date(year: int, month: int, day: int)
    fun yesterday(): Date = {...}
    fun tomorrow(): Date = {...}
```

~~An~~ A weak but useful class invariant would be -

day >= 1 && day <= 31
month >= 1 && month <= 12

A weak useful class invariant is that in the Date - the day, month & year cannot be negative, it is always a positive value, & since we know that day has to be >=1 and <=31 in the Date).

Implementation on next page -