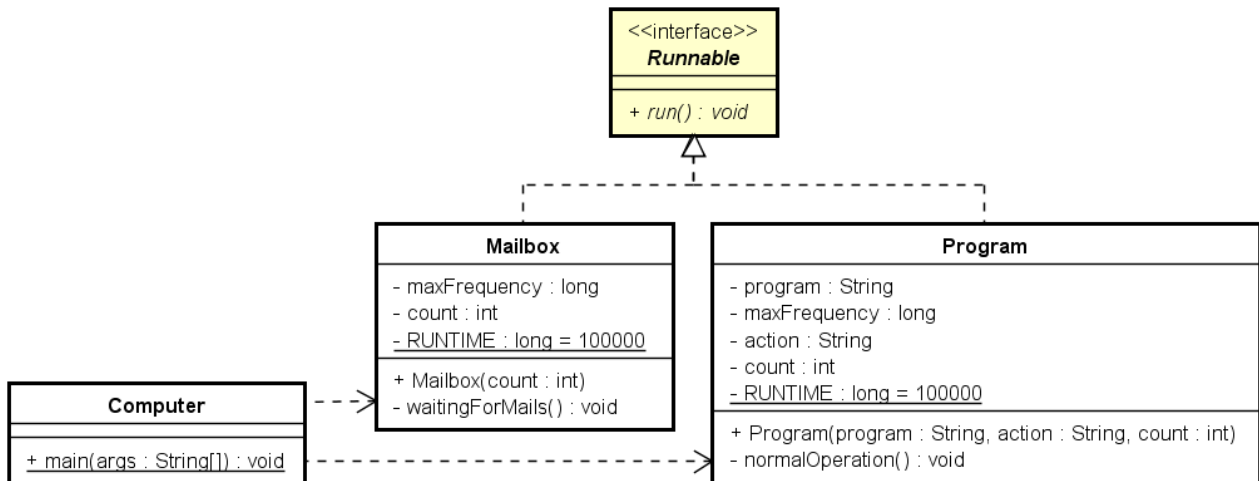## (Exercise: Computer simulator)

Implement the two Thread classes `Program` and `Mailbox` to be used in the class `Computer` to simulate a computer with independent notifications from programs and mailbox. The class `Computer` with the main method is given in the box below. See class diagram below.

Notes to implementation

- In the runnable class `Program` (in the `run` method) the `action` is printed approximately `count` number of times in the `RUNTIME` length. Example: programs[0] shown in the main method below prints "Windows wants to update", then sleeps for approximately `RUNTIME`/`30` milliseconds (e.g. a random number in a range you specify), print and sleep again, and so forth, a total of 30 times.
- The private method just includes the sleep part to be called from the run method.
- In the thread class `Mailbox` (in the run method) the string "New mail in your mailbox...", is printed approximately `20` times during the `RUNTIME`, i.e. sleep time is `RUNTIME` /`20`.

```
public class Computer
{
  public static void main(String[] args)
  {
    Mailbox mailbox = new Mailbox(20);
    Program[] programs = new Program[4];
    programs[0] = new Program("Windows", "update", 30);
    programs[1] = new Program("AVG", "update virus database", 5);
    programs[2] = new Program("FBackup", "perform a scheduled backup", 3);
    programs[3] = new Program("Skype", "notify: a person logging in", 17);
    System.out.println("---->Turning on the computer");

    Thread[] threads = new Thread[5];
    for (int i=0; i<programs.length; i++)
    {
      threads[i] = new Thread(programs[i]);    // creating thread
      threads[i].start();                      // starting thread
    }
    threads[4] = new Thread(mailbox);
    threads[4].start();

    for (int i=0; i<threads.length; i++)
    {
      threads[i].join();                       // waiting for thread to die
    }
```

```java
        System.out.println("<----Turning off the computer");
    }
}
```
```
// First part of the output
---->Turning on the computer
Windows wants to update
New mail in your mailbox...
Skype wants to notify: a person logging in
Windows wants to update
Windows wants to update
New mail in your mailbox...
Skype wants to notify: a person logging in
```