

## Exercise: Email, version 2a

Email
- user : String - host : String - domain : String
+ Email(user : String, host : String, domain : String) + getUser() : String + getHost() : String + getDomain() : String + toString() : String

Create a new module, name it `Email_v2` and copy class `Email` into the module.

Background:

An email address contains the three case insensitive parts: `user`, `host` and `domain` and the string representation is given as: `user@host.domain`

A legal email address (in this version) has the following restrictions:

- The `user` part has at least one character and no more than 64 characters
- The `user` part may contain letters (upper- and lowercase) and digits
- The `host` part has at least one character and no more than 63 characters
- The `host` part may contain letters (upper- and lowercase) and digits
- The first character in the `host` part has to be a letter – not a digit
- The `domain` part has at least one character and no more than 63 characters
- The `domain` part may contain letters (upper- and lowercase) and digits
- The `domain` part has at least one letter – cannot be all digits

Modify class `Email`:

- a) Update the three-argument constructor with three `String` parameters, `user`, `host` and `domain`. The method only sets the instance variables to the values of the parameter variables if none of the rules presented above are violated, i.e. if the email address is illegal.

*Hint: To check each characters of a string, you may use a loop from the first character (index 0) to the last character (the string length -1) and use the `String` method `charAt(index)`.*

*Note that the following condition checks if a `char` variable (`ch`) is an uppercase letter:*

```
if (ch >= 'A' && ch <= 'Z')
```

Initialise the email to `"wrong@email.address"` if the email address is illegal.

- b) Modify method `toString()` such that it returns `"Wrong format"` if the email address is illegal.

Modify the test application named `EmailTest` such that you test all the paths in your code checking for an illegal email.

