

CS-2852 - Dr. Durant - Quiz 1
Spring 2014, Week 1

1. (3 points) Give a brief definition of an interface.

- a contract that ^{complete} classes implementing the interface promise to fulfill
- a list of method signatures (methods without implementations)

2. (4 points) Given interface `Intr` with method `in()` properly implemented by concrete (instantiable, not abstract) class `Cla` with method `cl()`. Is each of the following legal or illegal? (If multiple lines and illegal, indicate the first illegal line for full credit.)

- a. `Intr i = new Cla();`
`i.cl();` ← illegal: can only access interface methods through `Intr`
- b. `Intr i = new Intr();` illegal: can't instantiate an interface → it contains
`i.in();` create object from no method implementations
- c. `Intr i = new Cla();` legal
`i.in();`
- d. `Intr i = new Intr();` illegal, same as b
`i.cl();`

3. (3 points) Recall that `CharSequence` is an interface of `String` that consists of 4 methods: `charAt`, `length`, `subSequence`, and `toString`. You've been asked to write a function that performs calculations on a string and you find that only the `CharSequence` methods are needed. What benefit do you gain by restricting yourself to using only the `CharSequence` interface to do your calculations?

can easily substitute any concrete class that implements `CharSequence`. This may enable (a) more efficient implementation or (b) a different source (database, network connection, Google query, current line being edited by user in document, ...)