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4. Which of the following are valid statements? (just provide your reasoning in a

short one-line answer for each statement)

4.1. `var name: String? = "Hello world"`

4.2. `var age: Int = nil`

4.3. `var age = nil`

4.4. `var middleName: String? = nil`

4.5. `let optStr: String? = name!`

Answer:

1 is a valid statement as name is an optional string type variable which can take nil or any string value.

2 is a invalid statement as age is not an optional type variable and it can not take nil value

3 is a invalid statement as age is not an “optional with type annotation” variable.

4 is a valid statement as middleName is optional and it can take nil value.

5 is a valid statement as optStr is a optional string and it can take string value and name! Forced unwrapping a string value.

5. Shortly explain implicitly unwrapped optionals using the below statements, also

explain the type of each of the variables and whether any errors will be shown for

the given code snippet as well:

`var str1: String! = "Hello again"`

`var str2: String = str1`

`var str3 = str1!`

`var str4 = str1`

Answer

First line will not show any error as its implicitly unwrapping the string “Hello again” and str1 will be an implicitly unwrapped optional string.

In second line implicit unwrapping is occurring and str2 will be an string.

In third line forced unwrap is occurring and str3 will be the type of string

In fourth line str4 is same as the str1, and it is an implicitly unwrapped optional string.

6. Shortly explain what will go wrong if we execute following code snippet:

```
var age: Int? = nil  
var unwrapped = age!
```

Answer

Nil value can not be unwrapped at the 2nd line and it will give an execution error.