15-150 Assignment 12
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4.2: RegExTest with Strings

Results:

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Tests for Regular:

Test R0: [", a, aa, aaa, aaaa, aaaaa, aaaaaa, aaaaaaa, aaaaaaaa, aaaaaaaaa]

Test R1: [", a, b, aa, ab, bb, aaa, aab, abb, bbb]

Test R2: [", a, b, aa, bb, aaa, bbb, aaaa, bbbb, aaaaa]

Test R3: [", ", ", ", ", ", ", ", ", "]

Test R4: [", a, b, aa, ab, ba, bb, aaa, aab, aba]

Test R5: [", ab, abab, ababab, abababab, ababababab, abababababab, abababababababab, ababababababababab, ababababababababab]

Test R6: ["]

Test R7: [", ", ", ", ", ", ", ", ", "]

Test R8: [", ", ", ", ", ", ", ", ", "]

Test R9: [", ab, abab, ababab, abababab, ababababab, abababababab, abababababababab, ababababababababab, ababababababababababab]

Test R10: [abc]

Test R11: [abc]

Test R12: [a, b, c]

Test R13: [a, b, c]

Test R14: [aaa]

Test R15: [aaa]

Test R16: [a]

Test R17: [a]

4.3: RegExTest with Strings2

Results:
****
Tests for Regular2:
Test R0: [", a, aa, aaa, aaaa, aaaaa, aaaaaa, aaaaaaa, aaaaaaaa, aaaaaaaaa]
Test R1: [", a, aa, aaa, aaaa, aaaaa, aaaaaa, aaaaaaa, aaaaaaaa, aaaaaaaaa]
Test R2: [", a, aa, aaa, aaaa, aaaaa, aaaaaa, aaaaaaa, aaaaaaaa, aaaaaaaaa]
Test R3: [", ", ", ", ", ", ", ", ", "]
Test R4: [", a, aa, aaa, aaaa, aaaaa, aaaaaa, aaaaaaa, aaaaaaaa, aaaaaaaaa]
Test R5: [", ab, abab, ababab, abababab, ababababab, abababababab, ababababababab, abababababababab, ababababababababab]
Test R6: ["]
Test R7: [", ", ", ", ", ", ", ", ", "]
Test R8: [", ", ", ", ", ", ", ", ", "]
Test R9: [", ab, abab, ababab, abababab, ababababab, abababababab, ababababababab, abababababababab, ababababababababab]
Test R10: [abc]
Test R11: [abc]
Test R12: [a, b, c]
Test R13: [a, b, c]
Test R14: [aaa]
Test R15: [aaa]
Test R16: [a]
Test R17: [a]

The results differ because in `Strings`, the comparison function cases on the length of each element before comparing their dictionary order. In contrast, `Strings2` uses the typical `String.compare` and nothing else to compare the elements. In the case of `Test R2`, this causes "b" to come before "aa" in `Regular`, even though "aa" has a dictionary value smaller than "b" (which is why strings of a's of increasing length are the first ten elements in `Regular2` for `Test R2`). The effects of this difference can be seen specifically in `Test R1`, `Test R2`, and `Test R4` (only a few examples).

5.2: MemoKnuth results

```
structure S = Memo_Knuth(Table)(SimpleNim)
```

```
S.player 100 = 3
```