Week 2 : Analyze
Problem 1

Array Type : Stack   (Last In, First out)

Push: `r`, `a`, `c`, `e`, `c`, `a`, `r`

Pop: ↓7 ↓6 ↓5 ↓4 ↓3 ↓2 ↓1

⇒ result = "racecar"

Same word if reversed order

Push: `s`, `t`, `r`, `e`, `s`, `s`, `e`, `d`

Pop: ↓8 ↓7 ↓6 ↓5 ↓4 ↓3 ↓2 ↓1

⇒ result = "desserts"

Not the same word

Push: `a`, ` `, `n`, `u`, `t`, ` `, `f`, `o`, `r`, ` `, `a`, ` `, `j`, `a`, `r`, ` `, `o`, `f`, ` `,

↓23 ↓22 ↓21 ↓20 ↓19 ↓18 ↓17 ↓16 ↓15 ↓14 ↓13 ↓12 ↓11 ↓10 ↓9 ↓8 ↓7 ↓6 ↓5

`t`, `u`, `n`, `a`

Pop: ↓4 ↓3 ↓2 ↓1

⇒ result = "anut fo raj a rof tun a"

Not the same phrase

Problem 2

String = 5 3 7 + *

Push: 5, 3, 7

+ ⇒ Pop (7)^{op2}, (3)^{op1}

⇒ 3 + 7 → 10

Push: 10

* ⇒ Pop (10)^{op2}, (5)^{op1}

⇒ 5 * 10 → 50

push: 50

String: 6 2 + 5 3 - /

Push: 6, 2

+ ⇒ Pop (2)^{op2}, (6)^{op1}

⇒ 6 + 2 ⇒ 8

Push: 8

Push: 5, 3

- ⇒ pop (3)^{op2}, (5)^{op1}

⇒ 5 - 3 ⇒ 2

Push: 2

/ ⇒ pip : (2)^{op2}, (8)^{op1}

⇒ 8/2 ⇒ 4

Push: 4

Invalid Case 1:

1 + 6 7 2

cannot perform addition (Stack.Count = 1 when item = "+"

Invalid Case 2:

7 0 / 2 3

push : 7, 0

/ ⇒ pop : 0^{op2}, 7^{op1}

⇒ 7/0 (undefined)

Invalid case 3

a b   c d

⇒ X float

⇒ X " "

Invalid case 4

5 3 7 + * 2

Push: 5, 3, 7

+ ⇒ pop $(7)^{op2}$, $(3)^{op1}$

⇒ 3 + 7 ⇒ 10

Push: 10

*   ⇒ pop $(10)^{op2}$, $(5)^{op1}$

⇒ 5 * 10 → 50

push : 50, 2

Stack.Count = 2