Postfix and Infix

CS 241
Data Organization using C

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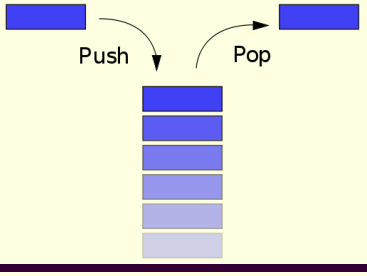

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Quiz: Which lines have ***indenting*** not in compliance with the CS-241 standard?

```
1) if (num <= 50)
2)    {
3)    printf("%d\n", num);
4)    }
5) else
6)    {
7)    printf("error\n");
8)    }
```

```
if (num <= 50)
{
  printf("%d\n",num);
}
else
{
  printf("error\n");
}
```

a) 5, 6, 7, 8
b) 2, 3, 6, 7
c) 3, 7
d) 2, 4, 6, 8
e) 2, 6

Quiz: Infix to Postfix

Which is the correct translation of the infix expression below to postfix?

```
(4*(2+3) ) / (1 + 7)
```

a) `4 2 3 + * 1 7 + /`

b) `4 2 3 + 1 7 + * /`

c) `4 2 3 + 1 7 + /  *`

d) `1 7 + 2 3 + 4 * /`

e) `1 7 + 2 3 + / 4 *`

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Quiz: Postfix Evaluation

What is the value of postfix expression:

```
2 3 4 + * 5 3 – *
```

a) 40

b) -40

c) 27

d) -31

e) 28

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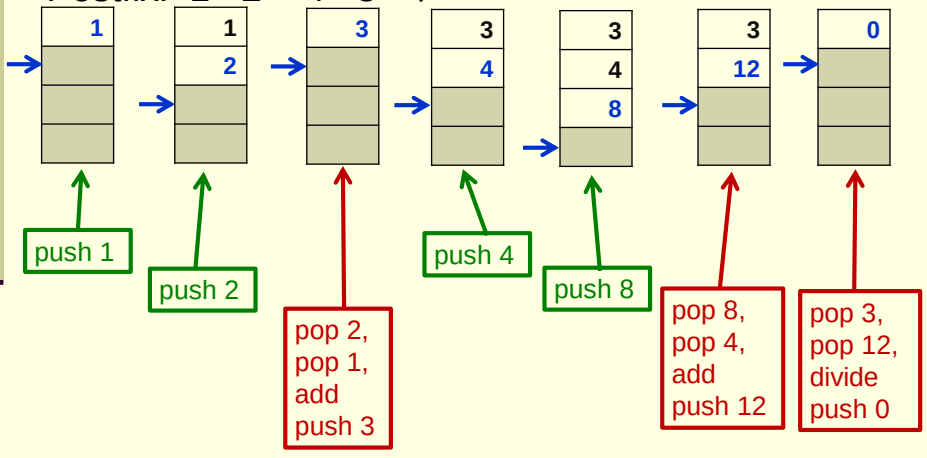
```
2
2 3
2 3 4
2 3 4 +
2 7
2 7 *
14
14 5
14 5 3 –
14 2
14 2 *
28
```

Postfix and a Stack

Infix: (1+2)/(4+8)

Postfix: 1 2 + 4 8 + /



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Lab: Postfix Calculator with header files

- Implement the reverse polish (postfix) calculator of section 4.3 using the header file layout and scope in section 4.4 and 4.5.
- This program is given a series of lines, each containing a space delimited postfix expression.
- The program output for each line of input is the value of the expression or "Error".

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Infix to Postfix

Infix: (1+2)/(4+7)

Postfix: 1 2 + 4 7 + /

Infix: 4*(2+3)

Postfix: 4 2 3 + *

Infix: $(7^2 + 3(2 + 16))/ (56 + 123)$

Postfix: 7 7 * 3 2 16 + * + 56 123 + /

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Quiz: Postfix Evaluation

What is the value of postfix expression:

```
2 3 4 5 + * +
```

a) 29

b) 27

c) 25

d) 40

e) 45

```
2 3 4 5 +
2 3 9
2 3 9 *
2 27
2 27  +
29
```

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Postfix to Infix Examples

Postfix: `3 7 2 1 + + *`

Infix: `3*(7+(2+1))`

Postfix: `3 7 2 + 1 + *`

Infix: `3*(7+2 + 1)`

Postfix: `10 4 8 + -3 2 * + * 6 /`

Infix: `(10*((4+8)+(-3*2)))/ 6`

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