adrianhsu:HW#3 AdrianHsu$ ./hw3\_1

**0 + 34 \* 1 && (0 << 6) || 5 ^9 + ~1 + - 6 - !0**

# transform from indix to postfix

encounter 0: push to my\_queue

Current output\_queue: 0

Current stack:

encounter +: push to op\_stack

Current output\_queue: 0

Current stack: +

encounter 34: push to my\_queue

Current output\_queue: 0 34

Current stack: +

encounter \*: push to op\_stack

Current output\_queue: 0 34

Current stack: \* +

encounter 1: push to my\_queue

Current output\_queue: 0 34 1

Current stack: \* +

compare && with \*: push \* to my\_queue

Current output\_queue: 0 34 1 \*

Current stack: +

compare && with +: push + to my\_queue

Current output\_queue: 0 34 1 \* +

Current stack:

encounter &&: push to op\_stack

Current output\_queue: 0 34 1 \* +

Current stack: &&

encounter (: push to op\_stack

Current output\_queue: 0 34 1 \* +

Current stack: ( &&

encounter 0: push to my\_queue

Current output\_queue: 0 34 1 \* + 0

Current stack: ( &&

encounter <<: push to op\_stack

Current output\_queue: 0 34 1 \* + 0

Current stack: << ( &&

encounter 6: push to my\_queue

Current output\_queue: 0 34 1 \* + 0 6

Current stack: << ( &&

encounter ): flush the stack to output until meeting '('

encounter <<: push into my\_queue

Current output\_queue: 0 34 1 \* + 0 6 <<

Current stack: << ( &&

encounter (:

Current output\_queue: 0 34 1 \* + 0 6 <<

Current stack: &&

compare || with &&: push && to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << &&

Current stack:

encounter ||: push to op\_stack

Current output\_queue: 0 34 1 \* + 0 6 << &&

Current stack: ||

encounter 5: push to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5

Current stack: ||

encounter ^: push to op\_stack

Current output\_queue: 0 34 1 \* + 0 6 << && 5

Current stack: ^ ||

encounter 9: push to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9

Current stack: ^ ||

encounter +: push to op\_stack

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9

Current stack: + ^ ||

encounter ~: push to op\_stack

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9

Current stack: ~ + ^ ||

encounter 1: push to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1

Current stack: ~ + ^ ||

compare + with ~: push ~ to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~

Current stack: + ^ ||

compare + with +: push + to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ +

Current stack: ^ ||

encounter +: push to op\_stack

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ +

Current stack: + ^ ||

encounter -u (unary): push to op\_stack

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ +

Current stack: - + ^ ||

encounter 6: push to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ + 6

Current stack: - + ^ ||

compare - with -u: push -u to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ + 6 -

Current stack: + ^ ||

compare - with +: push + to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ + 6 - +

Current stack: ^ ||

encounter -: push to op\_stack

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ + 6 - +

Current stack: - ^ ||

encounter !: push to op\_stack

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ + 6 - +

Current stack: ! - ^ ||

encounter 0: push to my\_queue

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ + 6 - + 0

Current stack: ! - ^ ||

encounter NOTHING: flush the stack to output

Current output\_queue: 0 34 1 \* + 0 6 << && 5 9 1 ~ + 6 - + 0 ! - ^ ||

Current stack:

# postfix expression transforming complete

Postfix Exp: 0 34 1 \* + 0 6 << && 5 9 1 ~ + 6 - + 0 ! - ^ ||

RESULT: 1

**36 \* 22 ^ (1 || 1+ -2)**

# transform from indix to postfix

encounter 36: push to my\_queue

Current output\_queue: 36

Current stack:

encounter \*: push to op\_stack

Current output\_queue: 36

Current stack: \*

encounter 22: push to my\_queue

Current output\_queue: 36 22

Current stack: \*

compare ^ with \*: push \* to my\_queue

Current output\_queue: 36 22 \*

Current stack:

encounter ^: push to op\_stack

Current output\_queue: 36 22 \*

Current stack: ^

encounter (: push to op\_stack

Current output\_queue: 36 22 \*

Current stack: ( ^

encounter 1: push to my\_queue

Current output\_queue: 36 22 \* 1

Current stack: ( ^

encounter ||: push to op\_stack

Current output\_queue: 36 22 \* 1

Current stack: || ( ^

encounter 1: push to my\_queue

Current output\_queue: 36 22 \* 1 1

Current stack: || ( ^

encounter +: push to op\_stack

Current output\_queue: 36 22 \* 1 1

Current stack: + || ( ^

encounter -u (unary): push to op\_stack

Current output\_queue: 36 22 \* 1 1

Current stack: - + || ( ^

encounter 2: push to my\_queue

Current output\_queue: 36 22 \* 1 1 2

Current stack: - + || ( ^

encounter ): flush the stack to output until meeting '('

encounter -u: push into my\_queue

Current output\_queue: 36 22 \* 1 1 2 -

Current stack: - + || ( ^

encounter +: push into my\_queue

Current output\_queue: 36 22 \* 1 1 2 - +

Current stack: + || ( ^

encounter ||: push into my\_queue

Current output\_queue: 36 22 \* 1 1 2 - + ||

Current stack: || ( ^

encounter (:

Current output\_queue: 36 22 \* 1 1 2 - + ||

Current stack: ^

encounter NOTHING: flush the stack to output

Current output\_queue: 36 22 \* 1 1 2 - + || ^

Current stack:

# postfix expression transforming complete

Postfix Exp: 36 22 \* 1 1 2 - + || ^

RESULT: 793

( 3 + ( ( 22+ !(0)) ^ 3 -2 | -11)^ ~6 \*544 %33 >> ~22 && ( (1 ) >>11 <<22)<<5 && -4 ) || 7 - 2

# transform from indix to postfix

encounter (: push to op\_stack

Current output\_queue:

Current stack: (

encounter 3: push to my\_queue

Current output\_queue: 3

Current stack: (

encounter +: push to op\_stack

Current output\_queue: 3

Current stack: + (

encounter (: push to op\_stack

Current output\_queue: 3

Current stack: ( + (

encounter (: push to op\_stack

Current output\_queue: 3

Current stack: ( ( + (

encounter 22: push to my\_queue

Current output\_queue: 3 22

Current stack: ( ( + (

encounter +: push to op\_stack

Current output\_queue: 3 22

Current stack: + ( ( + (

encounter !: push to op\_stack

Current output\_queue: 3 22

Current stack: ! + ( ( + (

encounter (: push to op\_stack

Current output\_queue: 3 22

Current stack: ( ! + ( ( + (

encounter 0: push to my\_queue

Current output\_queue: 3 22 0

Current stack: ( ! + ( ( + (

encounter ): flush the stack to output until meeting '('

encounter (:

Current output\_queue: 3 22 0

Current stack: ! + ( ( + (

encounter ): flush the stack to output until meeting '('

encounter !: push into my\_queue

Current output\_queue: 3 22 0 !

Current stack: ! + ( ( + (

encounter +: push into my\_queue

Current output\_queue: 3 22 0 ! +

Current stack: + ( ( + (

encounter (:

Current output\_queue: 3 22 0 ! +

Current stack: ( + (

encounter ^: push to op\_stack

Current output\_queue: 3 22 0 ! +

Current stack: ^ ( + (

encounter 3: push to my\_queue

Current output\_queue: 3 22 0 ! + 3

Current stack: ^ ( + (

encounter -: push to op\_stack

Current output\_queue: 3 22 0 ! + 3

Current stack: - ^ ( + (

encounter 2: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2

Current stack: - ^ ( + (

compare | with -: push - to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 -

Current stack: ^ ( + (

compare | with ^: push ^ to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^

Current stack: ( + (

encounter |: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^

Current stack: | ( + (

encounter -u (unary): push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^

Current stack: - | ( + (

encounter 11: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11

Current stack: - | ( + (

encounter ): flush the stack to output until meeting '('

encounter -u: push into my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 -

Current stack: - | ( + (

encounter |: push into my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - |

Current stack: | ( + (

encounter (:

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - |

Current stack: + (

compare ^ with +: push + to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | +

Current stack: (

encounter ^: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | +

Current stack: ^ (

encounter ~: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | +

Current stack: ~ ^ (

encounter 6: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6

Current stack: ~ ^ (

compare \* with ~: push ~ to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~

Current stack: ^ (

encounter \*: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~

Current stack: \* ^ (

encounter 544: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544

Current stack: \* ^ (

compare % with \*: push \* to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \*

Current stack: ^ (

encounter %: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \*

Current stack: % ^ (

encounter 33: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33

Current stack: % ^ (

compare >> with %: push % to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 %

Current stack: ^ (

encounter >>: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 %

Current stack: >> ^ (

encounter ~: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 %

Current stack: ~ >> ^ (

encounter 22: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22

Current stack: ~ >> ^ (

compare && with ~: push ~ to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~

Current stack: >> ^ (

compare && with >>: push >> to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >>

Current stack: ^ (

compare && with ^: push ^ to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^

Current stack: (

encounter &&: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^

Current stack: && (

encounter (: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^

Current stack: ( && (

encounter (: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^

Current stack: ( ( && (

encounter 1: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1

Current stack: ( ( && (

encounter ): flush the stack to output until meeting '('

encounter (:

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1

Current stack: ( && (

encounter >>: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1

Current stack: >> ( && (

encounter 11: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11

Current stack: >> ( && (

compare << with >>: push >> to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >>

Current stack: ( && (

encounter <<: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >>

Current stack: << ( && (

encounter 22: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22

Current stack: << ( && (

encounter ): flush the stack to output until meeting '('

encounter <<: push into my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 <<

Current stack: << ( && (

encounter (:

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 <<

Current stack: && (

encounter <<: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 <<

Current stack: << && (

encounter 5: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5

Current stack: << && (

compare && with <<: push << to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 <<

Current stack: && (

compare && with &&: push && to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << &&

Current stack: (

encounter &&: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << &&

Current stack: && (

encounter -u (unary): push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << &&

Current stack: - && (

encounter 4: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4

Current stack: - && (

encounter ): flush the stack to output until meeting '('

encounter -u: push into my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 -

Current stack: - && (

encounter &&: push into my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 - &&

Current stack: && (

encounter (:

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 - &&

Current stack:

encounter ||: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 - &&

Current stack: ||

encounter 7: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 - && 7

Current stack: ||

encounter -: push to op\_stack

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 - && 7

Current stack: - ||

encounter 2: push to my\_queue

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 - && 7 2

Current stack: - ||

encounter NOTHING: flush the stack to output

Current output\_queue: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 - && 7 2 - ||

Current stack:

# postfix expression transforming complete

Postfix Exp: 3 22 0 ! + 3 2 - ^ 11 - | + 6 ~ 544 \* 33 % 22 ~ >> ^ 1 11 >> 22 << 5 << && 4 - && 7 2 - ||

RESULT: 1

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adrianhsu:HW#3 AdrianHsu$ ./hw3\_2

log( 0.88563 +-0.51537 +-0.17578 + +1.3168+ 0.55399 + 0.58713 -0.59019 - -0.059599\* +0.89103)

Postfix Exp: 0.885630 0.515370 - + 0.175780 - + 1.316800 + + 0.553990 + 0.587130 + 0.590190 - 0.059599 - 0.891030 + \* - log

RESULT: 0.749203

exp(0.20286 \*-0.37746+ -(0.53997) )\* log(1.1245 + sin(1.2))

Postfix Exp: 0.202860 0.377460 - \* 0.539970 - + exp 1.124500 1.200000 sin + log \*

RESULT: 0.389215

2.2568-0.063917+ (( 0.35176- +-1.6603- ( sin( -1.8392+0.16571 + 0.74056- -0.79852\* + (sqrt(( 1.1172)+0.66085 +0.066148)\* -1.1648+ -0.2666 +-1.309 ) ) ) +( -0.12087 \*0.20923\* 1.0198 +-0.38495+ -0.85675 ))-1.3074)

Postfix Exp: 2.256800 0.063917 - 0.351760 1.660300 - + - 1.839200 - 0.165710 + 0.740560 + 0.798520 - 1.117200 0.660850 + 0.066148 + sqrt 1.164800 - \* 0.266600 - + 1.309000 - + + \* - sin - 0.120870 - 0.209230 \* 1.019800 \* 0.384950 - + 0.856750 - + + 1.307400 - +

RESULT: 1.322524

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