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**PPTI 14 – 2602192292**

1. Queue

INIT(0, N, INT)

N = NULL

INIT(1, B, STR[4])

B[4] = NULL, NULL, NULL, NULL

ASSIGN(1, "A=0.85)  
COMMAND ERROR

ASSIGN(0, "N = 3")

N = 3

ASSIGN(0, "A = A + 1)

COMMAND ERROR

INIT(-1, C, BOOL)

C = NULL

ASSIGN(1, "B[0] = 'Hello'")

B[4] = Hello, NULL, NULL, NULL

PRINTVARS(1)

B[4] = Hello, Darling, NULL, NULL(1)

N = 9(0)

C = true(-1)

INIT(1, A, FLO)

A = NULL

ASSIGN(0, A, A = N \* 2)

A = 6.00

PRINTVARS(0)

B[4] = Hello, Darling, NULL, NULL(1)

N = 9(0)

A = 6.00(0)

C = true(-1)

ASSIGN(-1, "C = true")

C = true

ASSIGN(-1, "C = C or false and C")

COMMAND ERROR

ASSIGN(0, "N = N \* N + A")

N = 9 (because N type is INT)

INIT(1, D, STR)

D = NULL

ASSIGN(-1, B, "B[1] = 'Darling'")

B = Hello, Darling, NULL, NULL

PRINTVARS(-1)

D = NULL(1)

N = 9(0)

A = 6.00(0)

C = true(-1)

B[4] = Hello, Darling, NULL, NULL(-1)

1. PostFix

Convert to Postfix: (A-B/D^E+(F\*G))

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Input |  |  | Stack |  | Output |
| ) |  |  | ) |  |  |
| )) |  |  | )) |  |  |
| ))G |  |  | )) |  | G |
| ))G\* |  |  | ))\* |  | G |
| ))G\*F |  |  | ))\* |  | GF |
| ))G\*F( |  |  | ))\*( |  | GF |
| ))G\*F(+ |  |  | ))(+ |  | GF\* |
| ))G\*F(+E |  |  | ))(+ |  | GF\*E |
| ))G\*F(+E^ |  |  | ))(+^ |  | GF\*E |
| ))G\*F(+E^D | |  | ))(+^ |  | GF\*ED |
| ))G\*F(+E^D/ | |  | ))(+/ |  | GF\*ED^ |
| ))G\*F(+E^D/) | |  | ))(+/) |  | GF\*ED^ |
| ))G\*F(+E^D/)B | |  | ))(+/) |  | GF\*ED^B |
| ))G\*F(+E^D/)B- | |  | ))()- |  | GF\*ED^B/+ |
| ))G\*F(+E^D/)B-A | |  | ))()- |  | GF\*ED^B/+A |
| ))G\*F(+E^D/)B-A( | |  | ))()-( |  | GF\*ED^B/+A |
|  | |  |  |  |  |

Convert to Postfix:(((A+B)/(C+D)-E)^(F\*G)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Input |  |  | Stack |  | Output |
| ) |  |  | ) |  |  |
| )) |  |  | )) |  |  |
| ))G |  |  | )) |  | G |
| ))G\* |  |  | ))\* |  | G |
| ))G\*F |  |  | ))\* |  | GF |
| ))G\*F( |  |  | ))\*( |  | GF |
| ))G\*F(^ |  |  | ))\*(^ |  | GF |
| ))G\*F(^) |  |  | ((\*(^) |  | GF |
| ))G\*F(^)E |  |  | ((\*(^) |  | GFE |
| ))G\*F(^)E- | |  | ((()- |  | GFE^\* |
| ))G\*F(^)E-) | |  | ((()-) |  | GFE^\* |
| ))G\*F(^)E-)D | |  | ((()-) |  | GFE^\*D |
| ))G\*F(^)E-)D+ | |  | ((()-)+ |  | GFE^\*D |
| ))G\*F(^)E-)D+C | |  | ((()-)+ |  | GFE^\*DC |
| ))G\*F(^)E-)D+C( | |  | ((()-)+( |  | GFE^\*DC |
| ))G\*F(^)E-)D+C(/ | |  | ((()-)+(/) |  | GFE^\*DC |
| ))G\*F(^)E-)D+C(/) | |  | ((()-)+(/) |  | GFE^\*DC |
| ))G\*F(^)E-)D+C(/)B | |  | ((()-)+(/) |  | GFE^\*DCB |
| ))G\*F(^)E-)D+C(/)B+ | |  | ((()-)(+) |  | GFE^\*DCB/+A |
| ))G\*F(^)E-)D+C(/)B+A | | | ((()-)(+) |  | GFE^\*DCB/+A |
| ))G\*F(^)E-)D+C(/)B+A(( | | | ((()-)(+)(( |  | GFE^\*DCB/+A |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| (3.5%)Evaluate postfix: 10 2 + 3 / 2 -10 5 / ^ | | | |  |  |
| input |  |  | stack |  | output |
| 10 |  |  | 10 |  | 10 |
| 2 |  |  | 2 |  | 10 2 |
| + |  |  | + |  | 10 2 |
| 3 |  |  | + 3 |  | 10 2 3 |
| / |  |  | + / |  | 10 2 3 / |
| 2 |  |  | + 2 |  | 10 2 3 / 2 |
| - |  |  | + - |  | 10 2 3 / 2 + |
| 10 |  |  | - 10 |  | 10 2 3 / 2 + 10 |
| 5 |  |  | - 5 |  | 10 2 3 / 2 + 10 5 |
| / |  |  | - / |  | 10 2 3 / 2 + 10 5 |
| ^ |  |  | - / ^ |  | 10 2 3 / 2 + 10 5 |
| (3.5%)Evaluatepostfix: 10 2 –3 \*2 3 \*6 /+ |  |  |  |  |  |

10 10 10

2 2 10 2

* - -

3 3 10 2 3

X - x 10 2 3

2 2 10 2 3 2

X - x x 10 2 3 2 \* \*

10 2 3 \* 2 3 \* /

1. Hashing

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| AabCg | A = 00 | a = 26 | b = 27 | C = 02 | g = 32 | 0026270232 |
| defHI | d = 29 | e = 30 | f = 31 | H = 07 | I = 08 | 2930310708 |
| OaNjG | O = 14 | a = 26 | N = 13 | j = 35 | G = 06 | 1426133506 |
| ZnmOs | Z = 25 | n = 39 | m = 38 | O = 14 | s = 44 | 2539381444 |
| BboOm | B = 01 | b = 27 | o = 40 | O = 14 | m = 38 | 0127401438 |
| PpTiA | P = 15 | p = 41 | T = 45 | I = 34 | A = 00 | 1541453400 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| hash 1 | hash 2 | |  | |  | |
| 02203 | 06722 | | = | | 0220306722 | |
| 23300 | 90178 | | = | | 2330090178 | |
| 12130 | 46356 | | = | | 1213046356 | |
| 23314 | 59844 | | = | | 2331459844 | |
| 02413 | 17048 | | = | | 0241317048 | |
| 14430 | 51540 | | = | | 1443051540 | |
|  |  | |  | |  | |
| fold 1 | | fold 2 | | fold 3 | | fold 4 | | fold 5 |
| 02 | | 20 | | 30 | | 67 | | 22 |
| 23 | | 30 | | 09 | | 01 | | 78 |
| 12 | | 13 | | 04 | | 63 | | 56 |
| 23 | | 31 | | 45 | | 98 | | 44 |
| 02 | | 41 | | 31 | | 70 | | 48 |
| 12 | | 43 | | 05 | | 15 | | 40 |