Sherlock and Array

by darkshadows

Problem Submissions Leaderboard Discussions Editorial

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Watson gives Sherlock an array A of length N. Then he asks him to determine if there exists an element in the array such that the sum of the elements on its left is equal to the sum of the elements on its right. If there are no elements to the left/right, then the sum is considered to be zero.
Formally, find an i, such that, $A_1+A_2...A_{i-1} = A_{i+1}+A_{i+2}...A_N$.

Input Format

The first line contains T, the number of test cases. For each test case, the first line contains N, the number of elements in the array A. The second line for each test case contains N space-separated integers, denoting the array A.

Constraints

$1 \leq T \leq 10$
$1 \leq N \leq 10^5$
$1 \leq A_i \leq 2 \times 10^4$
$1 \leq i \leq N$

Output Format

For each test case print `YES` if there exists an element in the array, such that the sum of the elements on its left is equal to the sum of the elements on its right; otherwise print `NO`.

Sample Input

```
2
3
1 2 3
4
1 2 3 3
```

Sample Output

```
NO
YES
```

Explanation

For the first test case, no such index exists.
For the second test case, $A[1] + A[2] = A[4]$, therefore index 3 satisfies the given conditions.

Submissions: 36507
Max Score: 40
Difficulty: Easy

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```
1 using System;
2 using System.Collections.Generic;
```

```
using System.Linq;
using System.Text;

class Solution {
    static void Main(String[] args) {
        /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution */

        int t = int.Parse(Console.ReadLine());

            while (t-- > 0)
            {
                int n = int.Parse(Console.ReadLine());
                int[] a = Array.ConvertAll(Console.ReadLine().Split(' '), e => int.Parse(e));
                //int[] a = Array.ConvertAll("75 426 445 272 81 447 129 497 202 275 325 482 284 417 156 432 402 228 37 357 239 418 211 179 6 340 68 368 16 440 263 93 449 491 310 355 68 431 80 257 218 434 328 176 355 221 80 422 45 11 67 467 174 191 4 335 34 465 480 221 395 1 152 325 231 302 153 396 22 489 399 107 466 432 2 468 333 475 292 84 10 194 328 354 212 409 480 143 121 451 492 420 197 107 425 167 217 438 200 486 104 483 120 306 381 358 59 53 2 54 462 325 435 279 464 327 49 332 95 200 220 158 139 492 130 467 489 458 81 100 466 473 429 275 81 270 455 218 128 307 335 398 52 30 311 69 148 384 454 413 114 315 186 334 382 392 326 8 53 462 457 350 231 61 185 88 305 480 64 390 52 247 443 240 93 469 370 16 443 7 25 299 412 163 199 71 476 455 217 90 343 427 220 342 84 239 496 375 101 258 449 377 40 428 238 455 17 153 433 268 457 307 456 378 477 368 499 382 41 326 264 269 401 98 198 263 15 413 495 23 71 206 357 404 310 410 344 111 484 410 59 262 394 449 107 46 237 487 479 306 185 291 42 42 134 94 251 89 398 229 212 464 297 323 220 297 280 417 338 176 183 465 240 41 55 3 316 256 13 111 474 431 24 109 176 304 151 199 376 325 393 439 237 374 323 346 319 154 157 314 343 386 197 100 356 209 379 479 461 14 123 244 400 94 447 20 152 463 174 329 484 430 322 165 146 385 191 353 105 110 453 356 243 194 354 297 75 331 474 220 337 195 345 154 173 306 365 24 452 231 329 353 331 192 27 413 81 438 63 358 358 266 301 95 374 307 51 368 478 309 304 7 308 492 499 150 206 399 322 198 15 381 267 282 237 119 111 426 444 288 326 444 202 388 444 155 21 489 446 131 116 445 154 434 22 350 183 42 226 241 486 101 161 32 461 68 403 276 258 272 266 259 224 336 241 54 18 325 395 449 425 56 350 378 211 83 184 290 59 445 345 268 322 1 55 272 285 175 312 165 321 420 196 16 357 149 448 307 35 91 284 82 268 398 174 341 439 93 217 3 334 268 471 465 121 83 103 366 149 232 276 488 238 64 236 273 70 122 274 132 60 455 248 380 61 389 454 320 34 233".Split(' '), e => int.Parse(e));
                // int[] a = Array.ConvertAll("1507 1780 958 818 1692 890 1535 2027 1009 1327 1480 1470 1869 1735 1311 1757 1413 2014 1778 651 1292 1251 1598 1681 1340 1768 1432 1228 1332 884 1656 1709 1813 1569 873 680 1764 1998 1595 1477 1180 1181 1073 1075 905 1750 1572 1296 1245 1603 1357 1458 1582 978 1487 1185 934 1302 1899 1386 1858 1510 809 1182 996 941 1878 816 1506 872 2000 1691 1700 907 1372 1594 665 1260 1873 654 1795 1687 1771 1964 1814 2039 1879 1787 1532 1667 1453 1034 1492 1087 786 1385 1968 2007 71 514 398 442 344 241 250 364 342 438 415 269 360 386 342 360 216 375 332 225 436 441 317 383 515 449 213 296 432 457 263 312 217 465 346 498 453 484 290 223 367 504 401 228 313 374 291 416 326 315 412 200 352 490 494 389 387 267 253 217 360 529 317 219 331 445 484 455 309 525 221 319 286 290 470 280 349 523 279 349 511 231 408 267 492 211 223 528 246 494 400 488 220 387 495 483 436 294 430 433 201 523 360 420 241 262 399 510 388 369 458 308 312 274 236 464 347 282 227 216 329 230 270 220 267 186 496 480 328 401 187 284 392 203 514 223 451 306 285 368 498 460 336 387 467 388 429 237 253 333 338 220 245 311 450 313 284 313 292 450 327 272 270 348 525 486 194 217 196 340 404 400 256 477 182 528 366 233 343 200 202 478 293 410 502 202 363 276 441 235 247 414 422 377 393 502 266 260 198 191 433 324 439 373 509 415 307 378 349 354 260 281 391 409 263 282 439 458 511 291 238 494 194 483 504 256 200 245 338 336 318 485 401 265 464 411 273 339 296 358 234 266 349 203 519 305 248 423 494 184 478 313 374 410 424 205 381 428 198 350 206 280 349 481 524 451 249 455 369 327 471 183 231 470 264 322 395 294 352 185 373 202 473 355 321 487 301 388 186 261 471 419 397 318 439 229 446 434 189 416 440 269 318 345 516 380 259 190 229 264 284 517 223 342 190 219 404 478 334 205 430 235 312 522 415 352 308 471 448 491 216 330 474 333 308 197 359 242 485 484 263 475 319 385 292 387 503 511 301 410 418 407 245 210 483 354 517 377 213 211 481 340 363 346 251 213 202 233 454 263 386 295 216 516 281 495 189 350 339 406 346 475 193 419 347 203 210 368 246 438 237 399 253 247 196 187 440 383 506 407 448 288".Split(' '), e => int.Parse(e));
                //int[] a = Array.ConvertAll("1 2 3 3".Split(' '), e => int.Parse(e));
                //int[] a = { 1, 4, 1 };

                if (n == 1)
                {
                    Console.WriteLine("YES");
                    continue;
                }


                int izq = 0, der = a.Sum();
                izq += a[0];
                der -= a[0];

                string ans = "NO";

                for (int i = 1; i+1 < a.Length; i++)
                {
                    der -= a[i];
                    if (izq == der)
                    {
                        ans = "YES";
                        break;
                    }

                    izq += a[i];
                }
```

```
                }

                Console.WriteLine(ans);


            }

    }
}
```

Line: 48 Col: 14

Upload Code as File Test against custom input Run Code Submit Code

Congrats, you solved this challenge!

- ✔ Test Case #0
- ✔ Test Case #1
- ✔ Test Case #2
- ✔ Test Case #3
- ✔ Test Case #4
- ✔ Test Case #5
- ✔ Test Case #6

Next Challenge