

CSE 332: Data Structures and Parallelism

Section 6: ForkJoin Practice

0. parity

```
public static int parity(int[] arr)
```

Returns true if there are an even number of even numbers and false otherwise.

For example if arr is [1, 7, 4, 3, 6], then `parity(arr) == true`. But, if arr is [6, 5, 4, 3, 2, 1], `parity(arr) == false`.

Your code must have $\mathcal{O}(n)$ work, $\mathcal{O}(\lg n)$ span, where n is the length of arr.

1. countStrs

```
public static int countStrs(String str, String[] arr)
```

Returns the number of elements in arr that equal str.

For example, if arr is ["h", "ee", "llll", "llll", "oo", "llll"], then `countStrs("llll", arr) == 3` and `countStrs("h", arr) == 1`.

Your code must have $\mathcal{O}(n)$ work, $\mathcal{O}(\lg n)$ span, where n is the length of arr.

2. powmod

```
public static void powmod(int[] arr, int p, int m)
```

Replaces every element of arr with $\text{arr}[i]^p \bmod m$.

For example if arr is [1, 7, 4, 3, 6], then `powmod(arr, 2, 5)` would result in `arr = [1, 4, 1, 4, 1]`.

Your code must have $\mathcal{O}(n)$ work, $\mathcal{O}(\lg n)$ span, where n is the length of arr.