Line wrap ☐

```html
1   <!DOCTYPE html>
2
3
4
5   <html lang="en" >
6     <head>
7       <script>
8         (function headInitializer() {
9           var dataLayerObject = {
10             company_unique_id: 'ep3tr8500n6',
11             test_unique_id: '3fmkoj68e7q'
12           };
13                  dataLayerObject['gaUserId'] = '7aa0b06513e2141da303c9d4eb8431437702d234'
14           dataLayerObject['attempt_id'] = 26710752
15                  window.dataLayer = [dataLayerObject];
16           window.userAgent = {"family":"Chrome","major":"91","minor":"0","patch":"4472","device":{"family":"Other","major":"0","minor":"0","patch":"0"},'
17         })();
18       </script>
19
20
21       <script>
22         (function loadFullStory() {
23           window['_fs_debug'] = false;
24           window['_fs_host'] = 'fullstory.com';
25           window['_fs_script'] = 'edge.fullstory.com/s/fs.js';
26           window['_fs_org'] = 'Q02VK';
27           window['_fs_namespace'] = 'CANDIDATE_FS';
28           (function(m,n,e,t,l,o,g,y){
29               if (e in m) {if(m.console && m.console.log) { m.console.log('FullStory namespace conflict. Please set window["_fs_namespace"].');} return;]
30               g=m[e]=function(a,b,s){g.q?g.q.push([a,b,s]):g._api(a,b,s);};g.q=[];
31               o=n.createElement(t);o.async=1;o.crossOrigin='anonymous';o.src='https://'+_fs_script;
32               y=n.getElementsByTagName(t)[0];y.parentNode.insertBefore(o,y);
33               g.identify=function(i,v,s){g(l,{uid:i},s);if(v)g(l,v,s)};g.setUserVars=function(v,s){g(l,v,s)};g.event=function(i,v,s){g('event',{n:i,p:v},
34               g.shutdown=function(){g("rec",!1)};g.restart=function(){g("rec",!0)};
35               g.log = function(a,b){g("log",[a,b])};
36               g.consent=function(a){g("consent",!arguments.length||a)};
37               g.identifyAccount=function(i,v){o='account';v=v||{};v.acctId=i;g(o,v)};
38               g.clearUserCookie=function(){};
39               g._w={};y='XMLHttpRequest';g._w[y]=m[y];y='fetch';g._w[y]=m[y];
40               if(m[y])m[y]=function(){return g._w[y].apply(this,arguments)};
41           })(window,document,window['_fs_namespace'],'script','user');
42         })()
43       </script>
44       <script>
45         //HR namespace
46         HR = window.HR || {};
47         HR.enableFullstory = true;
48
49           HR.currentFullstoryId = 26710752;
50
51       </script>
52
53
54       <meta charset="utf-8"/>
55
56   <title> HackerRank </title><meta name="description" id="meta-description" content="Join over 7 million developers in solving code challenges on HackerF
57   <script>
58     window.BACKEND_ENDPOINT = 'https://www.hackerrank.com/';
59     window.MANIFEST_VERSION = 'a110793360';
60   </script>
61
62   <meta name="viewport" content="width=device-width, initial-scale=1">
63   <link rel="icon" type="image/png" href="https://hrcdn.net/candidate-site/assets/favicon-3c604dd5e6.png" />
64
65   <!-- Prefetch dns on production -->
66
67     <link rel="dns-prefetch" href="//hrcdn.net">
68     <link rel="dns-prefetch" href="//d3keuzeb2crhkn.cloudfront.net">
69     <link rel="dns-prefetch" href="//notifications.hackerrank.com">
70     <link rel="dns-prefetch" href="//api.mixpanel.com">
71     <link rel="dns-prefetch" href="//metrics.hackerrank.com">
72     <link rel="preconnect" href="https://sentry.io">
73     <link rel="dns-prefetch" href="//sentry.io">
74     <link rel="dns-prefetch" href="//browser.sentry-cdn.com">
75     <link rel="dns-prefetch" href="//www.google-analytics.com">
76     <link rel="dns-prefetch" href="//www.googletagmanager.com">
77
78
79
80     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/vendors~hackerrank_r_app-69c1ef85.css">
81
82     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/hackerrank_r_app-4edea2dc.css">
83
84     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/vendors~coding_question_view~custom_input~frontend_question_view
85
86     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/vendors~coding_question_view~custom_input~frontend_question_view
87
88     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/vendors~testbase-19324e5d.css">
89
90     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/commons~diagram_question_view~hackerrank_r_login_view~subjective
91
92     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/commons~hackerrank_r_login_view~testbase-828fd002.css">
93
94     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/testbase-f72aed4b.css">
95
96     <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/vendors~code_review_view~coding_question_view~frontend_question
97
```

```
 98    <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/vendors~coding_question_view~custom_input~frontend_question_view
 99
100    <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/vendors~coding_question_view~whiteboard_question-19324e5d.css">
101
102    <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/commons~coding_question_view~whiteboard_question-3799a584.css">
103
104    <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/coding_question_view-5ab23d40.css">
105
106    <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/vendors~basequestion-91bc1783.css">
107
108    <link rel="stylesheet" type="text/css" href="https://hrcdn.net/candidate-site/assets/basequestion-d38b87e4.css">
109
110
111 <!-- Prefetch / preload assets on production -->
112
113
114    <!-- preload scripts required on the same page -->
115    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/hackerrank_r_vendor-8b139cdd35.js">
116    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/hackerrank_r_client-1a49ff84.js">
117    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/runtime-3d59f276.js">
118    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/chunks_runtime-ea01e074e5.js">
119
120
121    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/vendors~hackerrank_r_app-41be7a6d.js">
122
123    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/hackerrank_r_app-c4b2ceb7.js">
124
125    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/vendors~coding_question_view~custom_input~frontend_question_view~hack
126
127    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/vendors~coding_question_view~custom_input~frontend_question_view~rba_
128
129    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/vendors~testbase-3aa96f51.js">
130
131    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/commons~diagram_question_view~hackerrank_r_login_view~subjective_ques
132
133    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/commons~hackerrank_r_login_view~testbase-210a08d1.js">
134
135    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/testbase-f2add8b3.js">
136
137    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/vendors~code_review_view~coding_question_view~frontend_question_view
138
139    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/vendors~coding_question_view~custom_input~frontend_question_view~rba_
140
141    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/vendors~coding_question_view~whiteboard_question-f37bf124.js">
142
143    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/commons~coding_question_view~whiteboard_question-73711bc7.js">
144
145    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/coding_question_view-6135d3ac.js">
146
147    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/vendors~basequestion-6a17a019.js">
148
149    <link rel="preload" as="script" href="https://hrcdn.net/candidate-site/assets/basequestion-229b1bff.js">
150
151   <!-- preload scripts end -->
152
153
154
155 <!-- Load promise polyfill for the non-believers -->
156 <script>
157   (window.Promise && window.Promise.prototype.finally) || document.write('<script src="https://hrcdn.net/candidate-site/assets/polyfill-d05a380d50.min
158 </script>
159 <!-- Added for GTM and sentry -->
160
161
162 <script>
163   window.dataLayer = window.dataLayer || [];
164 </script>
165
166
167 <script>(function(w,d,s,l,i){w[l]=w[l]||[];w[l].push({'gtm.start':
168 new Date().getTime(),event:'gtm.js'});var f=d.getElementsByTagName(s)[0],
169 j=d.createElement(s),dl=l!='dataLayer'?'&l='+l:'';j.async=true;j.src=
170 'https://www.googletagmanager.com/gtm.js?id='+i+dl;f.parentNode.insertBefore(j,f);
171 })(window,document,'script','dataLayer','GTM-PBPFQ7N');</script>
172
173
174
175
176
177 <script>
178   var errorQueue = [];
179   (function(window) {
180     function errorListener(event) {
181       if (event.type === 'unhandledrejection' && !event.reason) {
182         return;
183       }
184       errorQueue.push(event);
185     }
186     window.addEventListener('error', errorListener);
187     window.addEventListener('unhandledrejection', errorListener);
188     window.removeInitialErrorListeners = function() {
189       window.removeEventListener('error', errorListener);
190       window.removeEventListener('unhandledrejection', errorListener);
191     };
192     window.getSentryConfig = function () {
193       return {
194         token: "76b68c9f9470440faa544a0602206fe9",
```

```
195          projectID: "1393856",
196        };
197      };
198    })(window);
199  </script>
200
201
202
203    </head>
204
205
206
207    <body class="theme-m">
208
209
210    <!-- Just a placeholder div to start loading open sans and source code loader -->
211    <div class="font-open-sans-loader"></div>
212    <div class="font-source-code-loader"></div>
213    <!-- Just a placeholder div to start loading open sans and source code loader end -->
214
215    <div id="content" onclick="void(0);"><div class="ui-kit-root"><div class="body-wrap base-page test_view-page question_listview-page single_question_v
216  .ps-content-wrapper-v0 div.preheader { display: none; }
217  .ps-content-wrapper-v0 p { white-space: pre-wrap; padding-left: 4px; padding-right: 4px; padding-top: 0px; padding-bottom: 2px; }
218  .ps-content-wrapper-v0 p.section-title { font-weight: bold; padding-bottom: 0px; }
219  .ps-content-wrapper-v0 ol.plain-list, .ps-content-wrapper-v0 ul.plain-list { list-style-type: none; padding: 4px; }
220  .ps-content-wrapper-v0 li { white-space: normal; margin-top: 4px; margin-bottom: 4px; }
221  .ps-content-wrapper-v0 code {color: black; background: transparent; font-weight: normal; font-size: 1em; }
222  .ps-content-wrapper-v0 pre { background-color: #f4faff; border: 0; border-radius: 2px; margin: 8px; padding: 10px; }
223  .ps-content-wrapper-v0 figure { background-color: transparent; display: table; margin-top: 8px; margin-bottom: 8px; text-align: center; margin-left: au
224  .ps-content-wrapper-v0 figcaption { text-align: center; display: table-caption; caption-side: bottom; margin-top: 4px; margin-bottom: 4px; }
225  .ps-content-wrapper-v0 img { width: auto; max-width: 100%; height: auto; }
226  .ps-content-wrapper-v0 details { background-color: transparent; padding-left: 4px; padding-right: 4px; padding-top: 0px; padding-bottom: 2px; }
227  .ps-content-wrapper-v0 details summary { background-color: #39424e; color: white; font-weight: bold; margin-top: 4px; margin-bottom: 4px; padding: 8px;
228  .ps-content-wrapper-v0 details div.collapsable-details { margin: 0 auto; padding-left: 4px; padding-right: 4px; padding-top: 0px; padding-bottom: 2px;
229  .ps-content-wrapper-v0 details div.collapsable-details pre { margin-left: 4px; margin-right: 4px; margin-top: 4px; margin-bottom: 4px; }
230  .ps-content-wrapper-v0 table { border: 1px solid black; border-collapse: collapse; border-color: darkgray; margin: 0 auto; margin-top: 8px; margin-bott
231  .ps-content-wrapper-v0 table tbody tr th, .ps-content-wrapper-v0 table tbody tr td { font-weight: bold; white-space: nowrap; text-align: center; vertic
232  .ps-content-wrapper-v0 table tbody tr th.description { width: 60%; }
233  .ps-content-wrapper-v0 table tbody tr td { font-weight: normal; white-space: normal; }
234  .ps-content-wrapper-v0 table.function-params tbody tr:first-child td.headers { border-bottom-width: 2px; }
235  .ps-content-wrapper-v0 table.function-params tbody tr:last-child td { border-top-width: 2px; border-top-color: darkgray; }
236  .ps-content-wrapper-v0 table.function-params tbody tr td.headers { width: 25%; font-weight: bold; text-align: center; border: 1px solid black; border-r
237  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell { width: 100%; height: 100%; padding: 0px; }
238  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell table.params-table { width: 100%; height: 100%; padding: 0px; margin: 0px; b
239  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell table.params-table tbody tr td.code { white-space: normal; }
240  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell table.params-table tbody tr th { border-top: 0; }
241  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell table.params-table tbody tr th:first-child { border-left: 0; }
242  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell table.params-table tbody tr th:last-child { border-right: 0; }
243  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell table.params-table tbody tr:last-child td { border-bottom: 0; border-top-wid
244  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell table.params-table tbody tr td:first-child { border-left: 0; }
245  .ps-content-wrapper-v0 table.function-params tbody tr td.params-table-cell table.params-table tbody tr td:last-child { border-right: 0; }
246  .ps-content-wrapper-v0 .left { text-align: left; }
247  .ps-content-wrapper-v0 .right { text-align: right; }
248  .ps-content-wrapper-v0 .code { font-family: monospace; white-space: nowrap; }
249  .ps-content-wrapper-v0 .json-object-array ol, .ps-content-wrapper-v0 .json-object-array ol ul { margin-top: 0px; padding-left: 14px; }
250  .json-object-array li { float: left; margin-right: 30px; margin-left: 10px; }
251  .json-object-array pre { padding: 4px; margin-left: 0px; }
252  </style>
253  <div class="ps-content-wrapper-v0">
254  <p>Given an array of integers, for each element determine whether that element occurs earlier in the array and whether it occurs later in the array. Cr
255
256  <p> </p>
257
258  <p><strong>Example</strong></p>
259
260  <p><em>num = [1,2,3,2,1]</em></p>
261
262  <p> </p>
263
264  <pre>
265                                              Bit Value
266  i  num[i]  num[0:i-1]      num[i+1:n-1] string 1 string 2
267  -  ------  ----------      ------------ -------- --------
268  0  1       NULL            [2,3,2,1]       0        1
269  1  2       [1]             [3,2,1]         0        1
270  2  3       [1,2]           [2,1]           0        0
271  3  2       [1,2,3]         [1]             1        0
272  4  1       [1,2,3,2]       NULL            1        0
273
274  </pre>
275
276  <ul>
277      <li>For <em>i = 0,</em> the value <em>1</em> does not occur earlier in the array, but it does occur later. The two strings are now <em>['0', '1'].
278      <li>For <em>i = 1,</em> the value <em>2</em> does not occur earlier in the array, but it does occur later. The two strings are now <em>['00', '11']
279      <li>For <em>i = 2,</em> the value <em>3</em> does not occur earlier or later in the array.  The two strings are now <em>['000', '110'].</em>
280  </li>
281      <li>After similar analyses on the remaining values, the return array is <em>['00011', '11000'].</em>
282  </li>
283  </ul>
284
285  <p> </p>
286
287  <p><strong>Function Description </strong></p>
288
289  <p>Complete the function <em>bitPattern</em> in the editor below.</p>
290
291  <p> </p>
292
```

```
293  <p>bitPattern has the following parameter(s):</p>
294
295  <p>    <em>int num[n]:</em>  an array of integers</p>
296
297  <p> </p>
298
299  <p><strong>Returns</strong></p>
300
301  <p>    <em>string[2]: </em>an array of <em>2</em> strings as described</p>
302
303  <p> </p>
304
305  <p><strong>Constraints</strong></p>
306
307  <p><em>1 ≤ n ≤ 10<sup>4</sup></em></p>
308
309  <p><em>0 ≤ num[i] ≤ 10<sup>4</sup></em> </p>
310
311  <p> </p>
312  <!--      <StartOfInputFormat> DO NOT REMOVE THIS LINE-->
313
314  <details><summary class="section-title">Input Format for Custom Testing</summary>
315
316  <div class="collapsable-details">
317  <p>Input from stdin will be processed as follows and passed to the function.</p>
318
319  <p> </p>
320
321  <p>The first line contains an integer <em>n</em>, the size of the array <em>num</em>.</p>
322
323  <p>Each of the next <em>n</em> lines contains an integer <em>num[i]</em>.</p>
324
325  <p> </p>
326  </div>
327  </details>
328
329  <details open="open"><summary class="section-title">Sample Case 0</summary>
330
331  <div class="collapsable-details">
332  <p><strong>Sample Input 0</strong></p>
333
334  <pre>
335  STDIN    Function
336  -----    --------
337  6    →   num[] length n = 6
338  1    →   num = [1, 3, 2, 3, 4, 1]
339  3
340  2
341  3
342  4
343  1
344  </pre>
345
346  <p><strong>Sample Output 0</strong></p>
347
348  <pre>
349  000101
350  110000
351  </pre>
352
353  <p> </p>
354
355  <p><strong>Explanation 0</strong></p>
356
357  <pre>
358                                            Bit Value
359  i  num[i]  num[0:i-1]    num[i+1:n-1]  string 1    string 2
360  -  ------  ----------    -----------   --------    --------
361  0  1       NULL          [3,2,3,4,1]      0           1
362  1  3       [1]           [2,3,4,1]        0           1
363  2  2       [1,3]         [3,4,1]          0           0
364  3  3       [1,3,2]       [4,1]            1           0
365  4  4       [1,3,2,3]     [1]              0           0
366  5  1       [1,3,2,3,4]   NULL             1           0
367  </pre>
368  </div>
369  </details>
370  </div>
371  </div></div></section></div></div></div><div aria-grabbed="false" aria-controls="main-splitpane-left main-splitpane-right" aria-label="Width of problem
372
373
374
375
376
377      <script>
378        window.moment = {
379          tz: {},
380        };
381      </script>
382
383
384    <script>
385  //HR namespace
386  HR = window.HR || {};
387  HR.development = false;
388  HR.assetPath = 'https://hrcdn.net/candidate-site/assets/';
389  HR.pageLoadTime = Date.now();
390  HR.production = true;
```

```
391    HR.devServer = false;
392    HR.isIsomorphic = true;
393    HR.loadedWithOldCss = true;
394    HR.pusher = {"key":"a280047e3b323ccb1b65","cluster":"mt1"};
395  </script>
396
397  <!-- Vendor scripts -->
398
399  <script src="https://hrcdn.net/candidate-site/assets/hackerrank_r_vendor-8b139cdd35.js"></script>
400
401
402  <script type="application/json" id="initialData">
403    %7B%22app%22:%7B%22clientInitialLoading%22:false,%22toastMessage%22:null,%22countries%22:%5B%5D%7D,%22metadata%22:%7B%22manifest%22:%7B%22brand/h_man
404  </script>
405  <script src="https://hrcdn.net/candidate-site/assets/runtime-3d59f276.js"></script>
406
407    <script src="https://hrcdn.net/candidate-site/assets/chunks_runtime-ea01e074e5.js"></script>
408
409  <script src="https://hrcdn.net/candidate-site/assets/hackerrank_r_client-1a49ff84.js"></script>
410
411    </body>
412  </html>
413
```