

Submission

[illegible]

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substrings.cpp	2371 bytes	7b6289762b1c236917da11c94387d075f927292b	download

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substrings.cpp

```
1 #include <bits/stdc++.h>
2
3 #define INF 99999999;
4
5 using namespace std;
6
7 int main(){
8
9     long long t;
10    cin>>t;
11
12    Help .e(t--){
13        string s;
```

```

14 cin>>s;
15 s += " ";
16 int n = s.length();
17 vector<int> sa(n), c(n);
18 vector<pair<int, int>> v(n);
19
20 auto count_sort = [&]() {
21
22     vector<int> cnt(n), sa_new(n);
23     for(auto x: c)
24         cnt[x]++;
25     vector<int> pos(n);
26
27     for(int i = 1; i < n; i++){
28         pos[i] = pos[i-1] + cnt[i-1];
29     }
30
31     for(auto x: sa){
32         int i = c[x];
33         sa_new[pos[i]] = x;
34         pos[i]++;
35     }
36     sa = sa_new;
37 };
38
39 for(int i = 0; i < n; i++){
40     v[i] = {s[i] - '0', i};
41 }
42
43 sort(v.begin(), v.end());
44
45 for(int i = 0; i < n; i++){
46     sa[i] = v[i].second;
47 }
48
49 c[sa[0]] = 0;
50 for(int i = 1; i < n; i++){
51     c[sa[i]] = c[sa[i-1]] + !(v[i].first == v[i-1].first);
52 }
53
54 int k = 0;
55 while(n > (1LL<<k)){
56     for(int i = 0; i < n; i++){
57         sa[i] = (sa[i] - (1<<k) + n) % n;

```

```

58     }
59     count_sort();
60     vector<int> c_new(n);
61
62     c_new[sa[0]] = 0;
63     for(int i = 1; i < n; i++){
64         pair<int, int> prev = {c[sa[i-1]], c[(sa[i-1] + (1<<k)) % n]};
65         pair<int, int> now = {c[sa[i]], c[(sa[i] + (1<<k)) % n]};
66         if(now == prev)
67             c_new[sa[i]] = c_new[sa[i-1]];
68         else
69             c_new[sa[i]] = c_new[sa[i-1]] + 1;
70     }
71     c = c_new;
72     k++;
73 }
74
75 k = 0;
76 vector<int> lcp(n);
77 for(int i = 0; i < n-1; i++){
78     int pi = c[i];
79     int j = sa[pi-1];
80     while(s[i+k] == s[j+k])
81         k++;
82     lcp[pi] = k;
83     k = max(k-1, 0);
84 }
85
86 long long ans = 0;
87 for(int i = 1; i < n; i++){
88     if(lcp[i] > lcp[i-1]){
89         ans += lcp[i] - lcp[i-1];
90     }
91 }
92 cout<<ans<<endl;
93 }
94
95 return 0;
96 }

```