Contents

1 Graph

1.1 C129

```cpp
#include <bits/stdc++.h>

using namespace std;
char oil[100][100] = {0};
int m, n;

void dfs( int i, int j )
{
    oil[i][j] = '*';
    if( oil[i-1][j-1] == '@' )
    {
        if( i-1 >= 0 && j-1 >= 0 )
        {
            oil[i-1][j-1] = '*';
            dfs( i-1, j-1 );
        }
    }
    else if( oil[i-1][j] == '@' )
    {
        if( i-1 >= 0 )
        {
            oil[i-1][j] = '*';
            dfs( i-1, j );
        }
    }
    else if( oil[i-1][j+1] == '@' )
    {
        if( i-1 >= 0 && j+1 <= n )
        {
            oil[i-1][j+1] = '*';
            dfs( i-1, j+1 );
        }
    }
    else if( oil[i][j-1] == '@' )
    {
        if( j-1 >= 0 )
        {
            oil[i][j-1] = '*';
            dfs( i, j-1 );
        }
    }
    else if( oil[i][j+1] == '@' )
    {
        if( j+1 <= n )
        {
            oil[i][j+1] = '*';
            dfs( i, j+1 );
        }
    }
    else if( oil[i+1][j-1] == '@' )
    {
        if( i+1 <= m && j-1 >= 0 )
        {
            oil[i+1][j-1] = '*';
            dfs( i+1, j-1 );
        }
    }
    else if( oil[i+1][j] == '@' )
    {
        if( i+1 <= m )
        {
            oil[i+1][j] = '*';
            dfs( i+1, j );
        }
    }
    else if( oil[i+1][j+1] == '@' )
    {
        if( i+1 <= m && j+1 <= n )
        {
            oil[i+1][j+1] = '*';
            dfs( i+1, j+1 );
        }
    }
}

int main(void)
{
    while( cin >> m >> n )
    {
        int ans = 0;
        if(( m == 0 ) && ( n == 0 ))
        {
            break;
        }
        else
        {
            for( int i = 0 ; i < m ; i++ )
            {
                for(int j = 0 ; j < n ; j++ )
                {
                    cin >> oil[i][j];
                }
            }
            for( int i = 0 ; i < m ; i++ )
            {
                for(int j = 0 ; j < n ; j++ )
                {
                    if( oil[i][j] == '@' )
                    {
                        dfs( i, j);
                        ans++;
                    }
                }
            }
            cout << ans <<endl;
        }
    }
    return 0;
}
```

1.2 11935

```cpp
#include <bits/stdc++.h>

using namespace std;

int main()
{
    int num, flag = 1;
    cin >> num;
    while( num > 0 )
    {
        int n, ans = 0;
        char map[100][100] = {0};
        cin >> n;
        for( int i = 0 ; i < n ; i++ )
        {
            for(int j = 0 ; j < n ; j++ )
            {
                cin >> map[i][j];
            }
        }
        for( int i = 0 ; i < n ; i++ )
```

```cpp
22          {
23              for(int j = 0 ; j < n ; j++ )
24              {
25                  if( map[i][j] == 'x' )
26                  {
27                      ans++;
28                  }
29              }
30          }
31          cout << "Case " << flag << ": " << ans <<endl;
32          num--;
33          flag++;
34      }
35      return 0;
36 }
```

2 Numbers

2.1 CongruenceEquation

```cpp
1  #include <bits/stdc++.h>
2
3  using namespace std;
4
5  long long Mode(long long a, long long n, long long m)
6  {
7      long long sum = 1;
8      for( ; n ; n >>= 1 )
9      {
10         if( n & 1 )
11         {
12             sum = ( sum * a ) % m;
13         }
14         a = ( a * a ) % m;
15     }
16     return sum;
17 }
18
19 int main(void)
20 {
21     int a, b, p, x, ans = 0;
22     cin >> a >> b >> p >> x;
23     for( int i = 1 ; i < x + 1 ; i++ )
24     {
25         int n;
26         n = i % p;
27         n = n * Mode( a, i, p);
28         if( n % p == b % p )
29         {
30             ans++;
31         }
32     }
33     cout << ans <<endl;
34     return 0;
35 }
```

3 PD practice

3.1 practice1

```java
1  package com.company;
2  import java.util.Scanner;
3  public class Main {
4
5      public static void main(String[] args) {
6          Scanner scanner = new Scanner(System.in);
7          int n = scanner.nextInt();
8          int m = n-1;
9          for( int i = 1 ; i <= 2*n-1 ; i=i+2 ) {
10             for( int j = m ; j > 0 ; j-- ) {
11                 System.out.print(" ");
```

```java
12             }
13             m--;
14             for (int t = 0; t < i; t++) {
15                 System.out.print("*");
16             }
17             System.out.println();
18         }
19     }
20 }
21 }
```

3.2 practice2

```java
1  package com.company;
2
3  public class Main {
4
5      public static void main(String[] args) {
6          for( int i = 1 ; i < 10 ; i++ ) {
7              for( int j = 1 ; j < 10 ; j++ ) {
8                  System.out.print( i+ " * "+ j+ " =");
9                  if( i * j < 10 ){
10                     System.out.print("  ");
11                 }
12                 else{
13                     System.out.print(" ");
14                 }
15                 int ans = i * j;
16                 if( j == 9 )
17                 {
18                     System.out.print(ans);
19                 }
20                 else
21                 {
22                     System.out.print( ans+ " " );
23                 }
24             }
25             System.out.println();
26         }
27
28     }
29 }
```

3.3 practice3

```java
1  package com.company;
2  import java.util.Scanner;
3  public class Main {
4
5      public static void main(String[] args) {
6          Scanner scanner = new Scanner(System.in);
7          int n = scanner.nextInt();
8          if( n >= 2 ){
9              System.out.print(2);
10         }
11         for (int j = 3; j < n ; j++)
12         {
13             boolean answer = true;
14             for (int i = 2; i <= Math.sqrt(j) ; i++)
15             {
16                 if (j % i == 0)
17                 {
18                     answer = false;
19                     break;
20                 }
21             }
22             if (answer)
23             {
24                 System.out.print( " "+ j );
25
26             }
27         }
28         System.out.println();
```

```
29        }
30 }
```