

```
1 #define _CRTDBG_MAP_ALLOC
2 #include <stdlib.h>
3 #include <crtdbg.h>
4
5 #ifdef _DEBUG
6 #ifndef DBG_NEW
7 #define DBG_NEW new ( _NORMAL_BLOCK , __FILE__ , __LINE__ )
8 #define new DBG_NEW
9 #endif
10 #endif // _DEBUG
11 //-----
12 #include <iostream>
13 using namespace std;
14 #include "BigInt.h"
15 #include <string.h>
16 //-----
17
18 BigInt BigInt_create(const char* s)
19 {
20     BigInt a;
21     //checking how much sfarot really in the number (00042 -> number of
22     //sfarot is 2!)
23     a.n_digits = no_leading_0_len(s);
24     if (a.n_digits == 0)
25         a.digits = nullptr;
26     else
27     {
28         a.digits = new char[a.n_digits];
29         int index = strlen(s) - a.n_digits;
30         // assigning the number to array with the sfarot
31         for (int i = 0; i < a.n_digits; i++)
32         {
33             a.digits[i] = s[index];
34             index++;
35         }
36     }
37     return a;
38 }
39 //checking how much sfarot really in the number (00042 -> number of sfarot
40 //is 2!)
41 int no_leading_0_len(const char* s)
42 {
43     int counter = 0;
44     while (s[counter] == '0')
45     {
46         counter++;
47     }
48     int eff_len = strlen(s) - counter;
49     return eff_len;
50 }
51 void BigInt_print(const BigInt& bi)
```

```
52 {
53     for (int i = 0; i < bi.n_digits; i++)
54     {
55         cout << bi.digits[i];
56     }
57 }
58
59 BigInt BigInt_create(int num)
60 {
61     BigInt a;
62     int temp = num;
63     a.n_digits = 0;
64     while (temp != 0)
65     {
66         temp = temp / 10;
67         a.n_digits++;
68     }
69
70     a.digits = new char[a.n_digits];
71     for (int i = a.n_digits - 1; i >= 0; i--)
72     {
73         a.digits[i] = (num % 10) + '0';
74         num = num / 10;
75     }
76
77     return a;
78 }
79
80 int BigInt_compare(const BigInt& a, const BigInt& b)
81 {
82     //first comparing the "size" of the number because if number size is bigger so it is must be bigger!!!
83     if (!(a.n_digits == b.n_digits))
84     {
85         if (a.n_digits > b.n_digits)
86             return 1;
87         else
88             return -1;
89     }
90
91     for (int i = 0; i < a.n_digits; i++)
92     {
93         if (!(a.digits[i] == b.digits[i]))
94         {
95             if (a.digits[i] > b.digits[i])
96                 return 1;
97             else
98                 return -1;
99         }
100     }
101     return 0;
102 }
103
```

```
104 void BigInt_assign(BigInt& a, const BigInt& b)
105 {
106     BigInt_destroy(a);
107     a.digits = new char[b.n_digits];
108     a.n_digits = b.n_digits;
109     for (int i = 0; i < b.n_digits; i++)
110         a.digits[i] = b.digits[i];
111 }
112
113 void BigInt_destroy(BigInt& bi)
114 {
115     delete(bi.digits);
116 }
117
118
```