

## Tema 8

```
numere.out x main.cpp x
1 42 531
2

1 #include <iostream>
2 #include <fstream>
3 using namespace std;
4
5 int main()
6 {
7     ifstream n1 ("numar.in");
8     long x, n, a;
9     n1 >> n;
10    n1.close();
11    ofstream n2 ("numere.out");
12    a=0; x=n;
13    while (x!=0)
14    {
15        if (x%2==0) a=a*10+x%10;
16        x=x/10;
17    }
18    n2 << a << ' ';
19    a=0; x=n;
20    while (x!=0)
21    {
22        if (x%2==1) a=a*10+x%10;
23        x=x/10;
24    }
25    n2 << a << endl;
26    n2.close();
27    return 0;
28 }
```

numar.in x

```
1 12345
2
```



## Tema 10

```
numar.out x      main.cpp x
1      192345
2
3
4
5 {
6     long n,c,m,p;
7     int r,cif,nr,poz;
8     ifstream f("numere.in");
9     f>>n>>cif>>poz;
10    f.close();
11    c=n;nr=0;
12    while (c>0)
13    { nr++; c/=10; }
14    ofstream g("numar.out");
15    m=0;p=1;r=0;c=n;
16    while (c>0 || r<poz)
17    {
18        r++;
19        if (r==nr-poz+2)
20            {m=m+cif*p;p*=10;r++;}
21        m=m+c%10*p;
22        p*=10;
23        c/=10;
24    }
25    g<<m;
26    g.close();
27    return 0;
28 }
```

```
numere.in x
1      12345 9 2
2
```

## Tema 11

The image shows a C++ IDE with three windows: 'numar.out', 'numere.in', and 'main.cpp'. The 'numar.out' window displays the output '211'. The 'numere.in' window displays the input '111'. The 'main.cpp' window shows the source code, which reads a number 'n' from 'numere.in' and prints its digits in reverse order to 'numar.out'.

```
1  #include <iostream>
2  #include <fstream>
3  using namespace std;
4  int main()
5  {
6      long n,c,p;
7      int m,k,r,nr,cif;
8      ifstream f("numere.in");
9      f>>n>>cif>>p;
10     f.close();
11     c=n;
12     ofstream g("numar.out");
13     m=0;k=1;r=1;
14     while(c>0 or r<=p)
15     {
16         if(r==p)m+=cif*k;
17         else {m+=c%10*k;c/=10;}
18         r++;
19         k*=10;
20     }
21     g<<m;
22     g.close();
23     return 0;
24 }
25
```

## Tema 12

```
1  #include <iostream>
2  #include <fstream>
3  using namespace std;
4  int main()
5  {
6      long n,c,p=1;
7      int nr=0,poz;
8      ifstream f("numere.in");
9      f>>n>>poz;
10     f.close();
11     c=n;
12     ofstream g("numar.out");
13     while(c>0)
14     {   nr++; c/=10;   }
15     if(nr>=poz)
16     {   for(int i=1;i<=nr-poz;i++)
17         p*=10;
18         g<<(n/(p*10))*p+n%p;
19     }
20     else g<<n;
21     g.close();
22     return 0;
23 }
```

The image shows a C++ IDE with three windows. The top-left window, titled 'numar.out', displays the output '45'. The bottom-left window, titled 'numere.in', displays the input '456'. The main window, titled '\*main.cpp', shows the source code. The code reads the number 456 from 'numere.in', processes it to reverse the digits, and prints '45' to 'numar.out'. The logic involves counting the number of digits (nr) and then printing the number from the most significant digit to the least significant digit by repeatedly dividing by 10 and using the remainder.

## Tema 13

The image shows a C++ IDE with three windows: 'numar.out', 'numere.in', and 'main.cpp'. The 'numar.out' window displays the output '12345'. The 'numere.in' window displays the input '12345 8'. The 'main.cpp' window shows the source code, which reads the number from 'numere.in', calculates the number of digits, and writes each digit to 'numar.out'.

```
1  #include <iostream>
2  #include <fstream>
3  using namespace std;
4  int main()
5  {
6      long n,p=1;
7      int poz;
8      ifstream f("numere.in");
9      f>>n>>poz;
10     f.close();
11     ofstream g("numar.out");
12     for(int i=1;i<poz;i++)
13         p*=10;
14     g<<n/(p*10)*p+n%p;
15     g.close();
16     return 0;
17 }
```