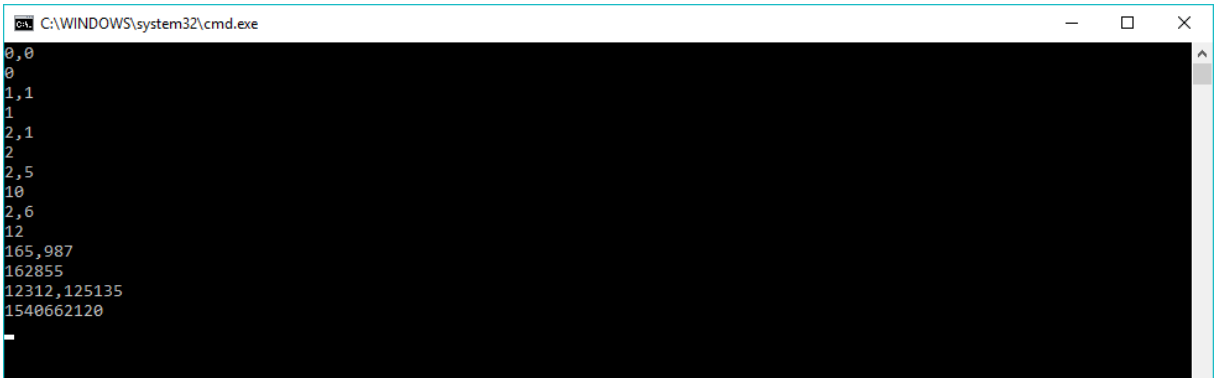
Aufgabe 1

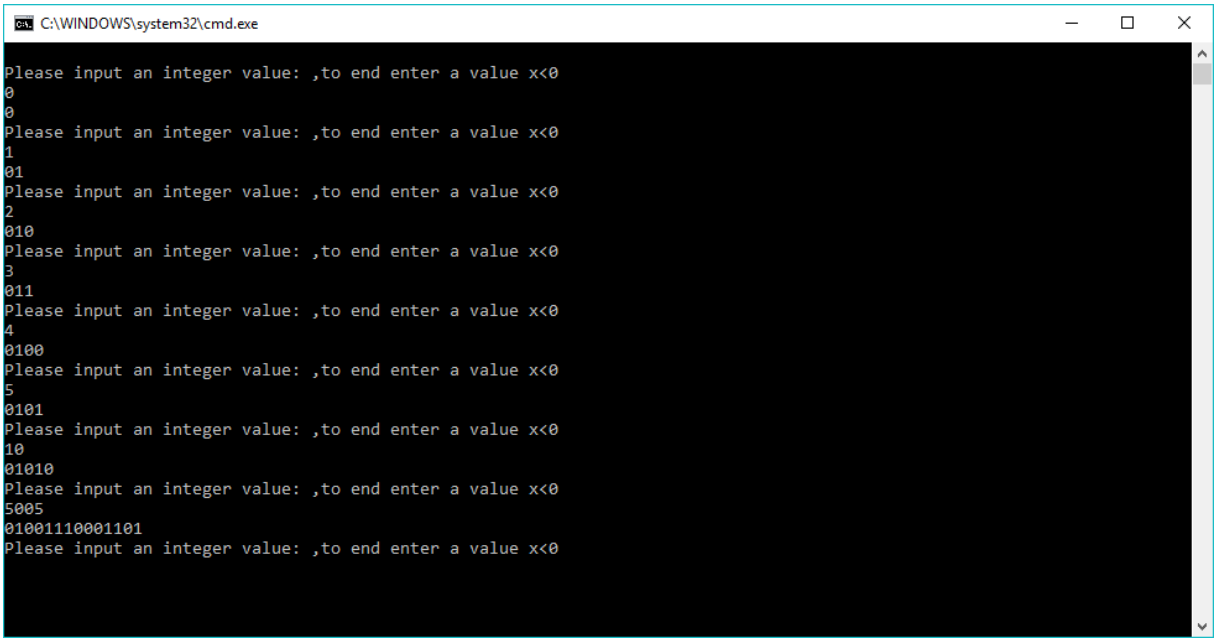
```
#include <stdio.h>
int main(int argc, char* argv[]) {
    int number1 = 20;
    int number2 = 10;
    int memory = 0;
    int result = 0;
    if (number1 > number2) {
        memory = number1;
        number1 = number2;
        number2 = memory;
    }
    memory = number2;
        while (number1 != 0) {
            if (number1 % 2 != 0) {
                result = result + memory;
            }
            number1 = number1/2;
            number2 = number2 * 2;
            memory = number2;
        }
    printf("%d\n",result);
    return 0;
}
```



Aufgabe 2

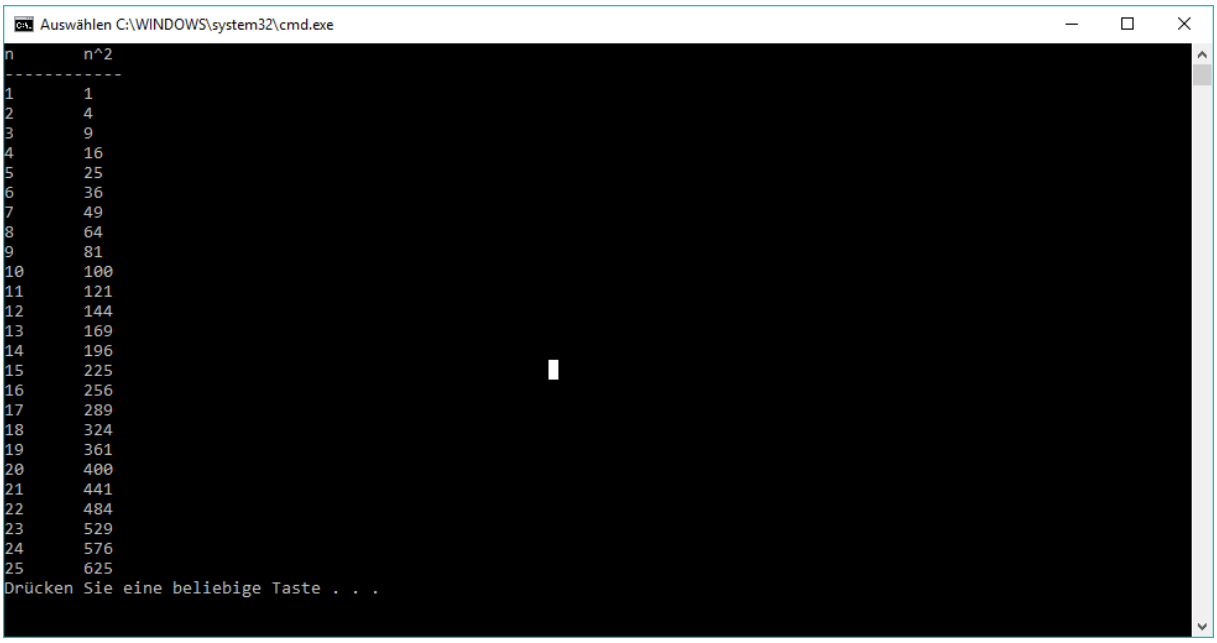
```
#include <stdio.h>
int main(int argc, const char* argv[]) {
    int input = 1;
    printBi(input);
    //USER INPUT
    int userIn = 1;
    while (userIn >= 0) {
        printf("\nPlease input an integer value: ,to end enter a value
x<0\n");
        scanf("%d", &userIn);
        printBi(userIn);
    }
    //END USER INPUT
    return 0;
}
int printBi(int number) {
    if (number > 0) {
        printBi(number / 2);
        printf("%d", number % 2);
```

```
    }
    else { printf("0"); }
    return 0;
}
```



Aufgabe 3

```
1   #include <stdio.h>
2   int main(int argc, const char* argv[]) {
3           printf("n    |  n^2\n----------\n");
4           for (int n = 1; n < 26;n+=1) {
5                   if (n < 10) {
6                           printf("%d    |  %d\n", n, n*n);
7                   } else {
8                           printf("%d   |  %d\n", n, n*n);
9                   }
10              }
11          return 0;
12  }
13
```



Aufgabe 4

Gedanke: Syntaxdiagramm umsetzen

```
SimpleCalc(String str):Real
Real number1 = 0;
Real number2 = 0;
Integer position = 0;
Character operation;
    if
((str[0]=='c')AND(str[1]=='a')AND(str[2]=='l')AND(str[3]=='c')AND(str[4]=='
') then
    Integer i=5
        while ((i<str[].length )AND(str[i]!=' ')) do
            number1 = 10^position*number1+(str[i]-48)
            position+=1
            i+=1;
        end while
            i+=1;
        for(i;i<str[].length;i+=1)
            if (str[i]!=' ') then
                operation = str[i]
                i=i+2
                position=0
                while ((i<str[].length )AND(str[i]!=' ')) do
                    number2 = 10^position*number2+(str[i]-48)
                    position+=1
                    i+=1;
                end while
                switch(operation)
                    case '+':   number1 = number1 + number2 break
                    case '-':   number1 = number1 - number2 break
                    case 'x':   number1 = number1 * number2 break
                    case '/':   number1 = number1 / number2 break
                    default: //Fehler
                end switch
                i-=1
            end if
        end for
```

```
    end if
    number1 = ((int)number1*100)/100.0
    return number1
end SimpleCalc
```