In generals.

COL 100
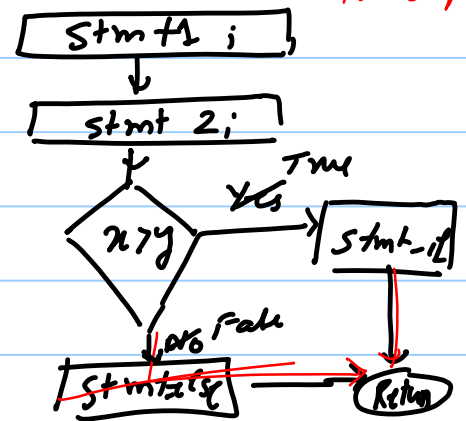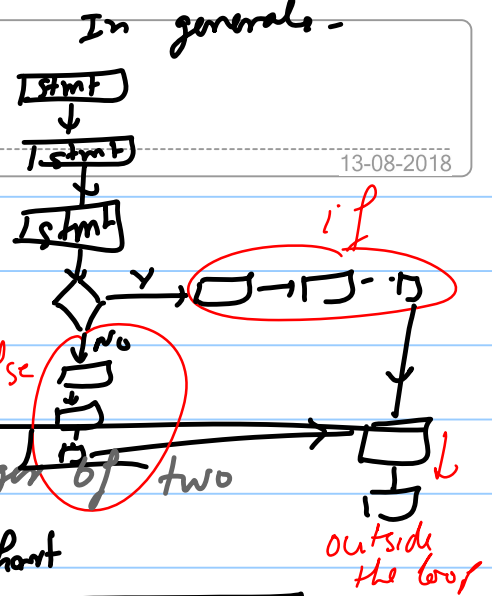Aug 13, 2018

Flowcharts.

$x, y :-$ Input

→ so Prints the larger of two
numbers

int $x = getInteger("No 1 :");$
int $y = getInteger("No 2");$

if $(x > y)$ {

        cout << x ; // stmt-if;

} else {
        cout << y; // stmt-else;
}

```cpp
int main () {

    int n = getInteger (" Enter No:");

    int sum = 0;
    int i = 1;
    while ( i <= n ) {
            sum = sum + i;    //stmt_a
            i++;              // stmt_b
    }

    cout << " Sum  is = " << sum << endl;    // the loop

    return 0;

}
```

Flowchart "while"
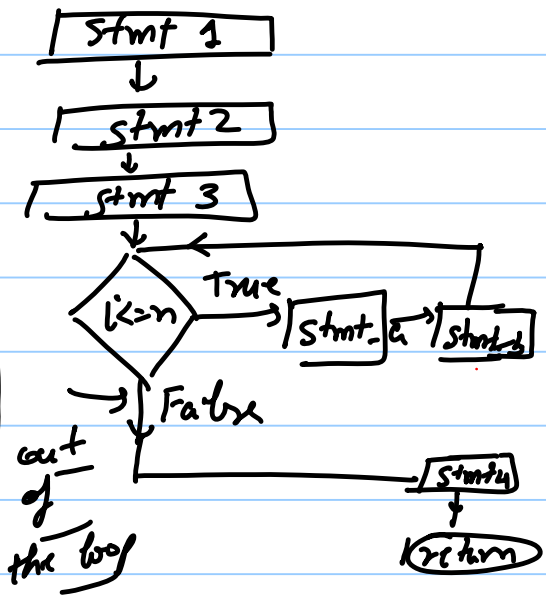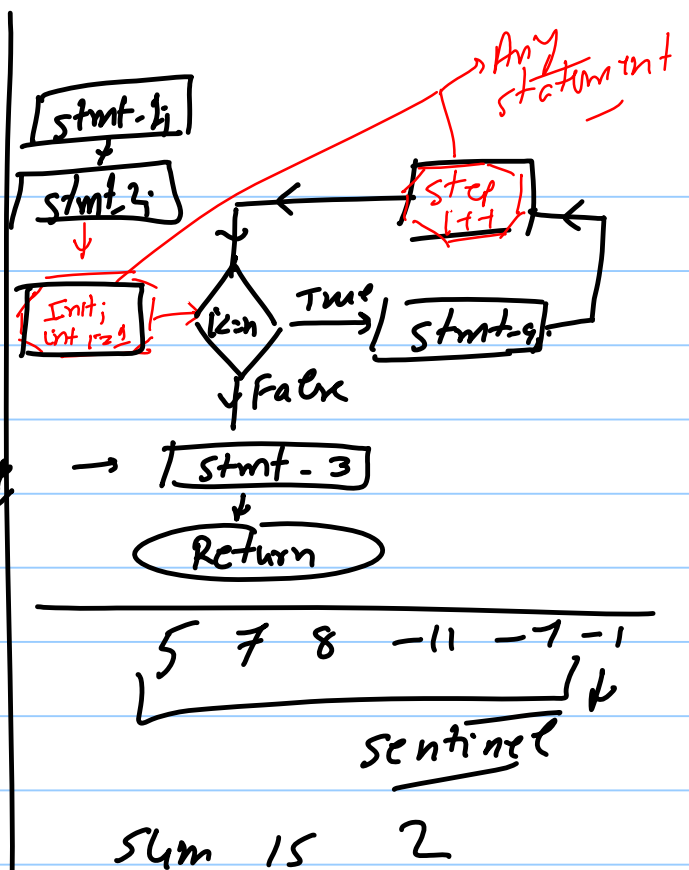
```cpp
int main() {
    int sum = 0;
    int n = getInteger("No: ");
    for(int i = 1; i <= n; i++) {
        sum = sum+i; //stmt. a
    }
    cout << "Sum is" << sum << endl;
    return 0;
}
```

//for loop for
// ~~out~~ computing sum
// of first n
// natural numbers

Boolean expression

cond.

step

Init

Any statement

stmt-1.

stmt-2.

Init;
int i=1;

i<=n True stmt-g.

Step
i++

False

stmt-3

Return

5 7 8 -11 -7 -1

sentinel

sum is 2

```
//program to sum numbers
//until -1 is entered
    int    cnt = 0;
    int    sum = 0;
    int    i = get Int get "Enter a No.");
→   while ( i != -1)(true) {
        → cnt++;
        → sum = sum + i;
          i = get Integer ("Enter a N°");
→   {   if ( i == -i) {
    }         break;
          }
          cout << "Sum is" << sum;
```

5 7 -1

Loop 1) -
    cnt ← 1
    sum ← 5
Loop 2) -
    cnt ← 2
    sum ← 12
Loop 3 →
    Exit

```
             1
        → 1 2
        → 1 2   3
     .. → 1 2   3    4
  with row → 1 2 3   4    5
        [ 1 2 =    . =   . r =      i ]
          1 2  3   4   j   ,  -   n
  outer
  loop
```

```
int n = get Integer ( "N:" );
for (int i = 1; i <= n; i++) {
  → for (int j = 1; j <= i; j++)
     {
        cout << j << " ";
     }
     cout << endl;
}
```
(red annotation: j = n; j >= 1; j--)

```
× × × × × 1
× × × × 2   1
× × × 3   2   1
× × × × × ×
× 4  .3  2   1
5  4  3  2   1
```
i-th row
1...
n...

```
int n = get Integer ("N!");
for (int i = 1; i <= n; i++) {
   for (int j = n; j >= 1; j--) {
      if ( j > i ) {
         3 then {   cout < < " ";
      , 3 →          cout << j;
```

```cpp
int printName () {       // function
                         // arguments

}

int main () {
    n = get integer ();
    for (int i=1; i<=n; i++) {
        String name= getLine ("Enter Name");
        cout << "Hello Friend". <<
                    name << endl;
    }
    printName ();
}
```