Task06

Find global minimum
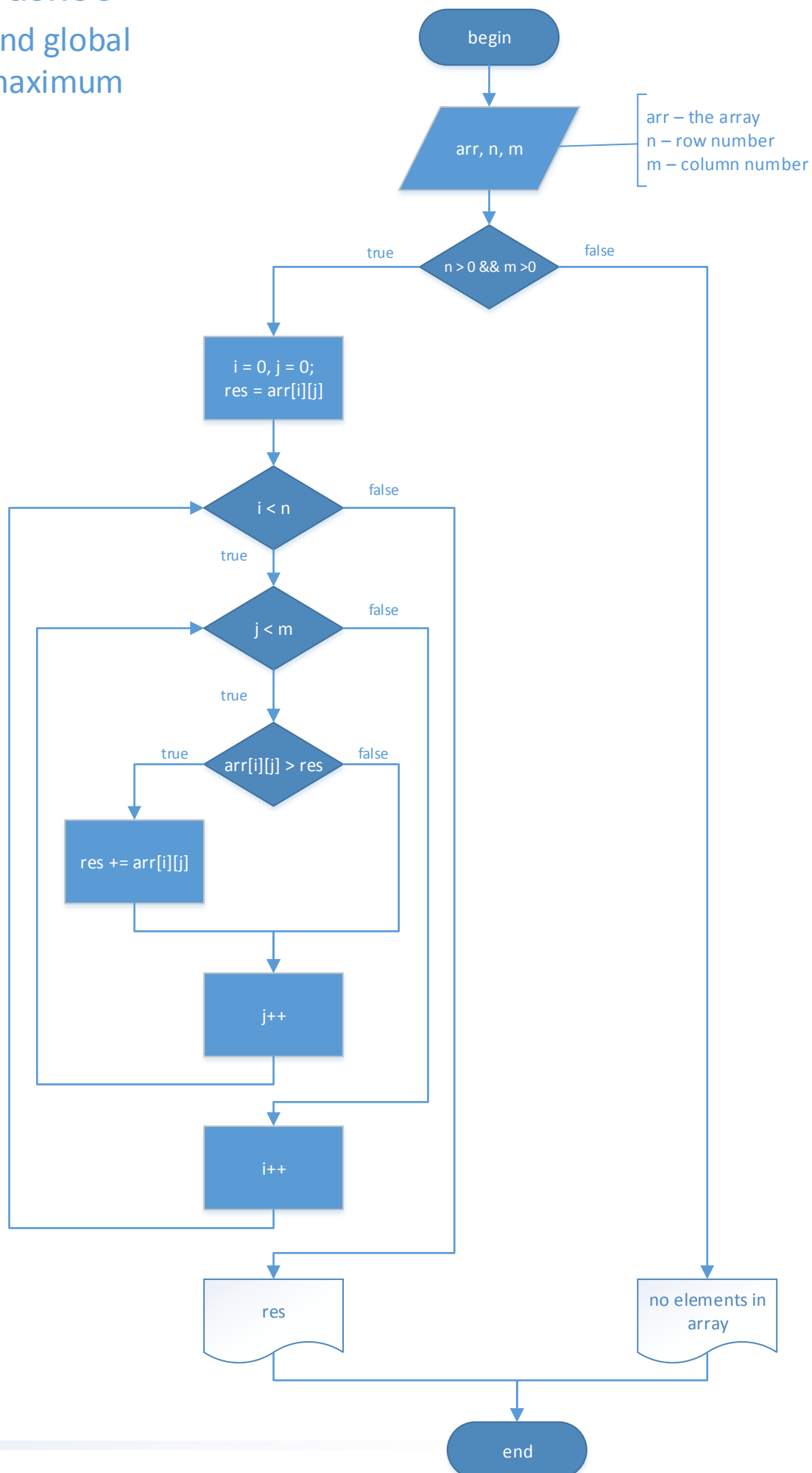
begin

arr, n, m

arr – the array
n – row number
m – column number

n > 0 && m > 0
true — false

i = 0, j = 0;
res = arr[i][j]

i < n
true / false

j < m
true / false

arr[i][j] < res
true / false

res = arr[i][j]

j++

i++

res

no elements in array

end

Find global maximum

begin

arr, n, m

arr – the array
n – row number
m – column number

n > 0 && m > 0
- true
- false

i = 0, j = 0;
res = arr[i][j]

i < n
- false
- true

j < m
- false
- true

arr[i][j] > res
- true
- false

res += arr[i][j]

j++

i++

res

no elements in array

end
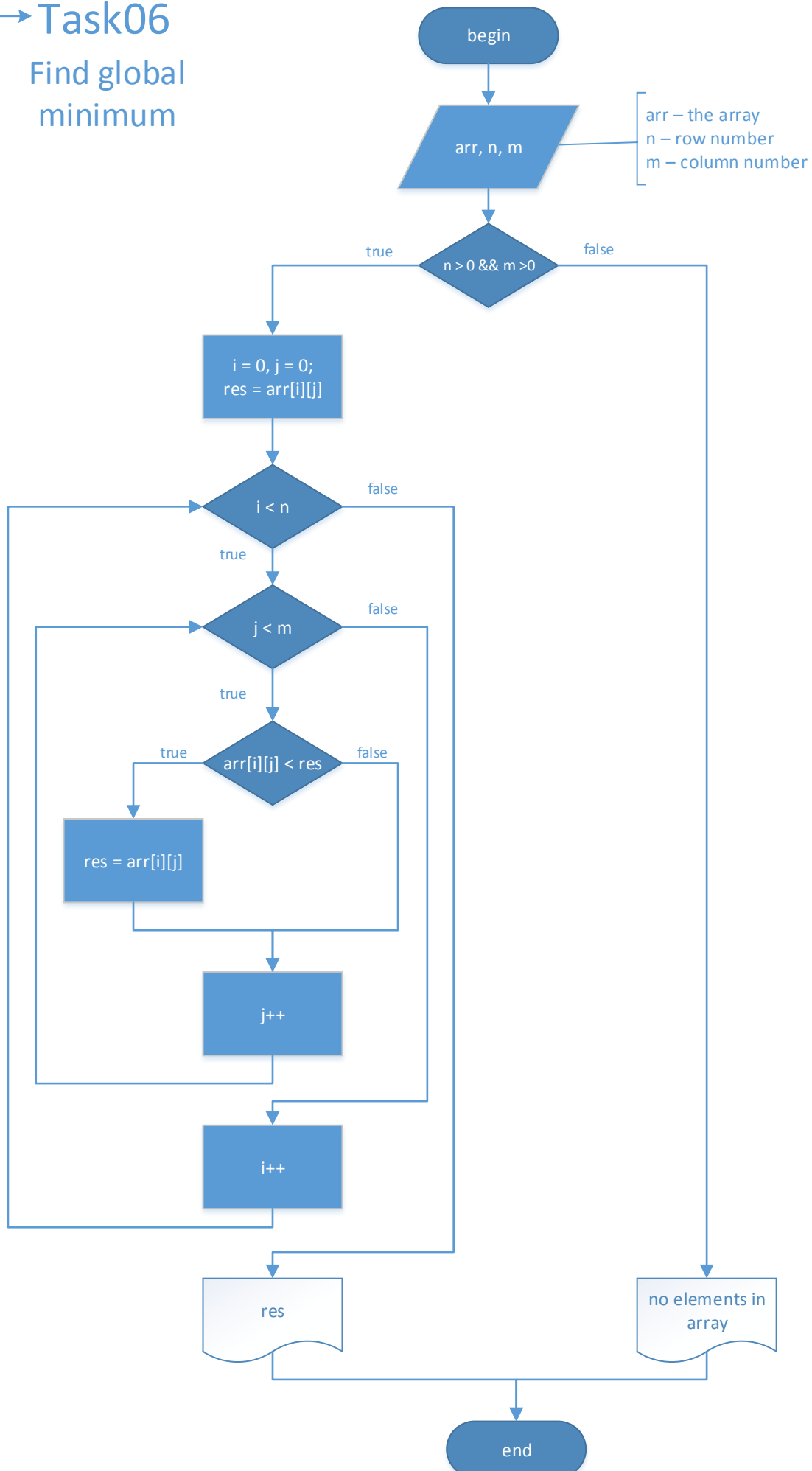
Find the
arithmetic mean
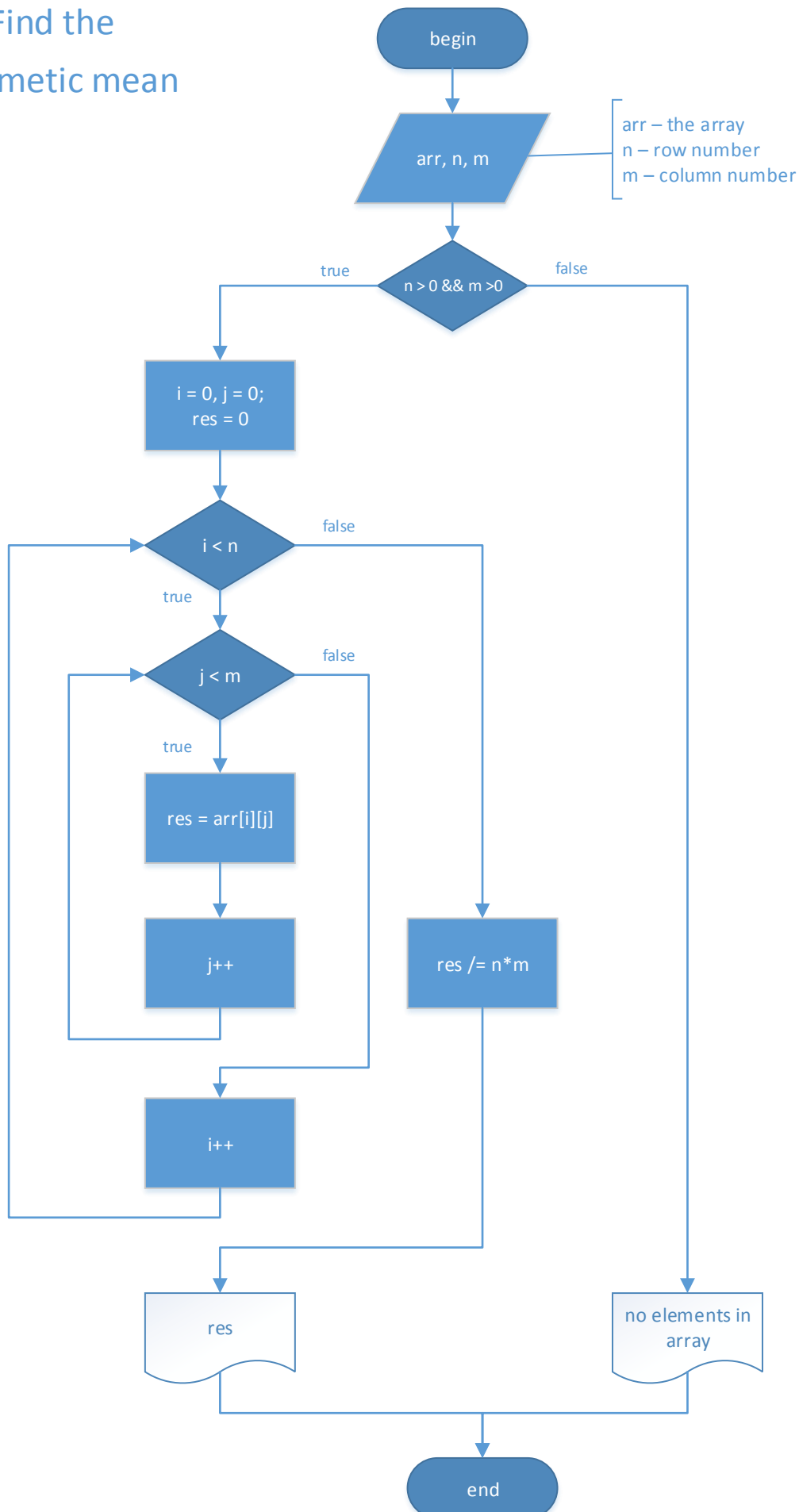
```
begin
```

arr, n, m

arr – the array
n – row number
m – column number

n > 0 && m >0
  true ← | → false

i = 0, j = 0;
res = 0

i < n
  false →

  true ↓

j < m
  false →

  true ↓

res = arr[i][j]

j++

res /= n*m

i++

res

no elements in
array

```
end
```

Task06

Find the
geometric mean

```
begin
```

```
arr, n, m
```

arr – the array
n – row number
m – column number

```
n > 0 && m > 0
```
true / false

```
i = 0, j = 0;
res = 1
```

```
i < n
```
false / true

```
i++
```

```
j < m
```
false / true

```
res =
Math.pow
(res, 1/(n*m))
```

```
a[i][j] > 0
```
false / true

```
res *= arr[i][j]
```

```
j++
```

```
res
```

```
-1
```

```
no elements in
array
```

```
end
```
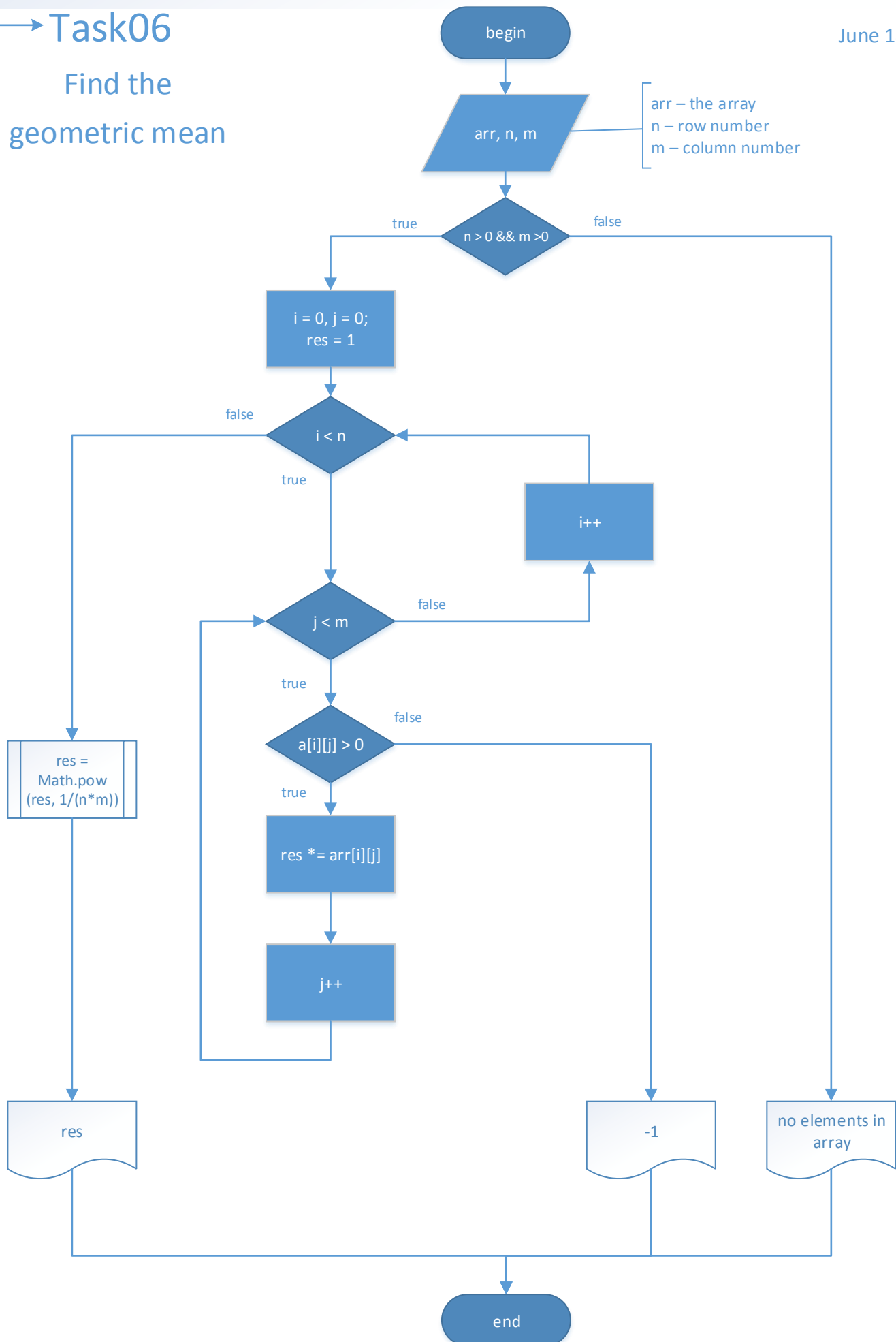
Find the position of the first local minimum

begin

arr, n, m

arr – the array
n – row number
m – column number

n > 0 && m > 0

true / false

i = 0, j = 0;

i < n

false / true

i++

j < m

false / true

i > 0 && a[i][j] < a[i-1][j]
true / false

j > 0 && a[i][j] < a[i][j-1]
true / false

i < n-1 && a[i][j] < a[i+1][j]
true / false

j < m-1 && a[i][j] < a[i][j+1]
true / false

j++

-1, -1

i, j

no elements in array

end
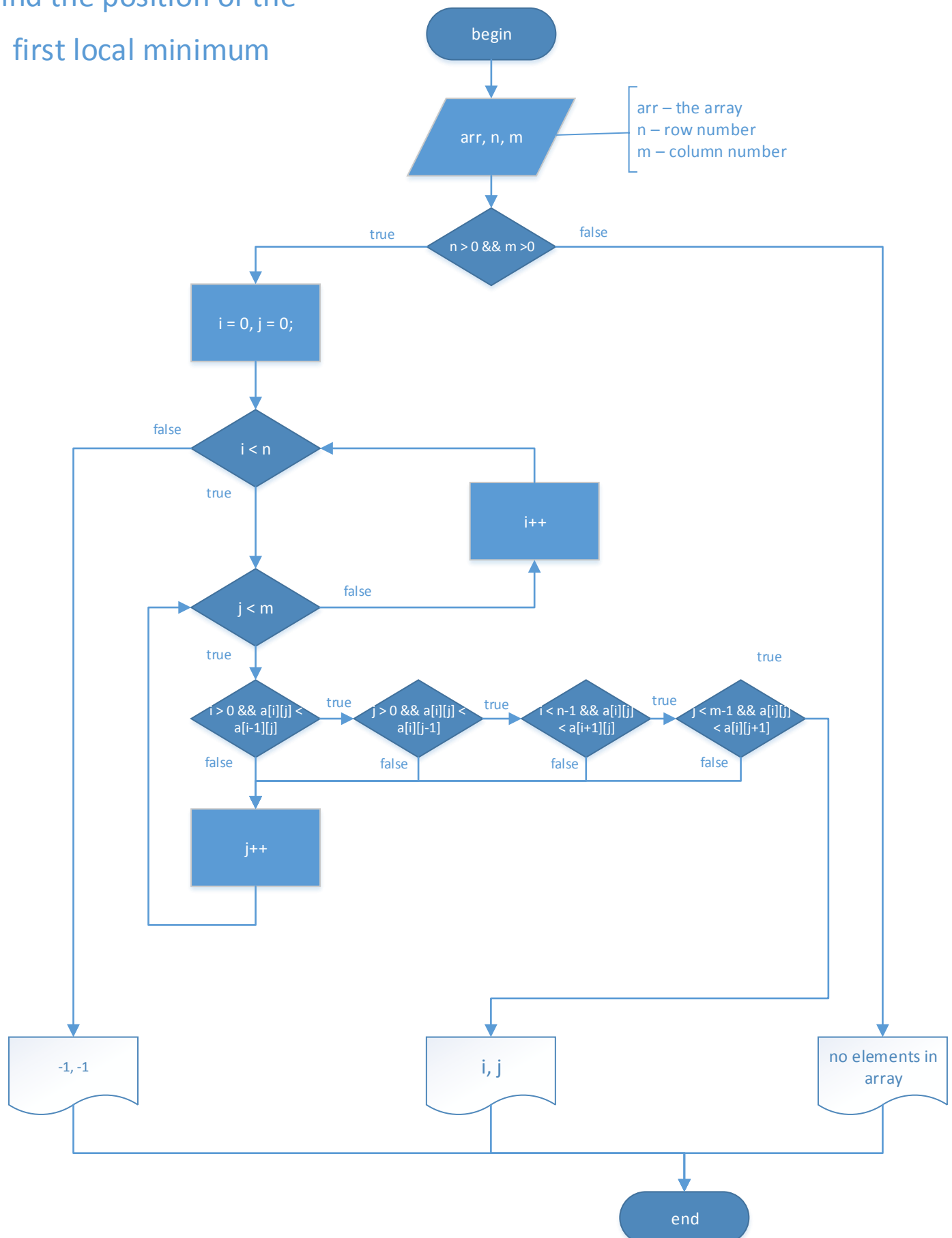
Task06

Find the position of the

first local maximum

begin

arr, n, m

arr – the array
n – row number
m – column number

n > 0 && m >0

true · false

i = 0, j = 0;

i < n

false · true

i++

j < m

false · true

i++

i > 0 && a[i][j] > a[i-1][j]

true · false

j > 0 && a[i][j] > a[i][j-1]

true · false

i < n-1 && a[i][j] > a[i+1][j]

true · false

j < m-1 && a[i][j] > a[i][j+1]

true · false

j++

-1, -1

i, j

no elements in array

end

Transpose the matrix

begin

arr, n, m

arr – the array
n – row number
m – column number

n > 0 && m >0

true

false

arrT = new [m][n]

i = 0, j = 0;

i < n

false

true

j < m

false

true

arrT[j][i] = arr[i][j]

j++

i++

arrT

no elements in array

end
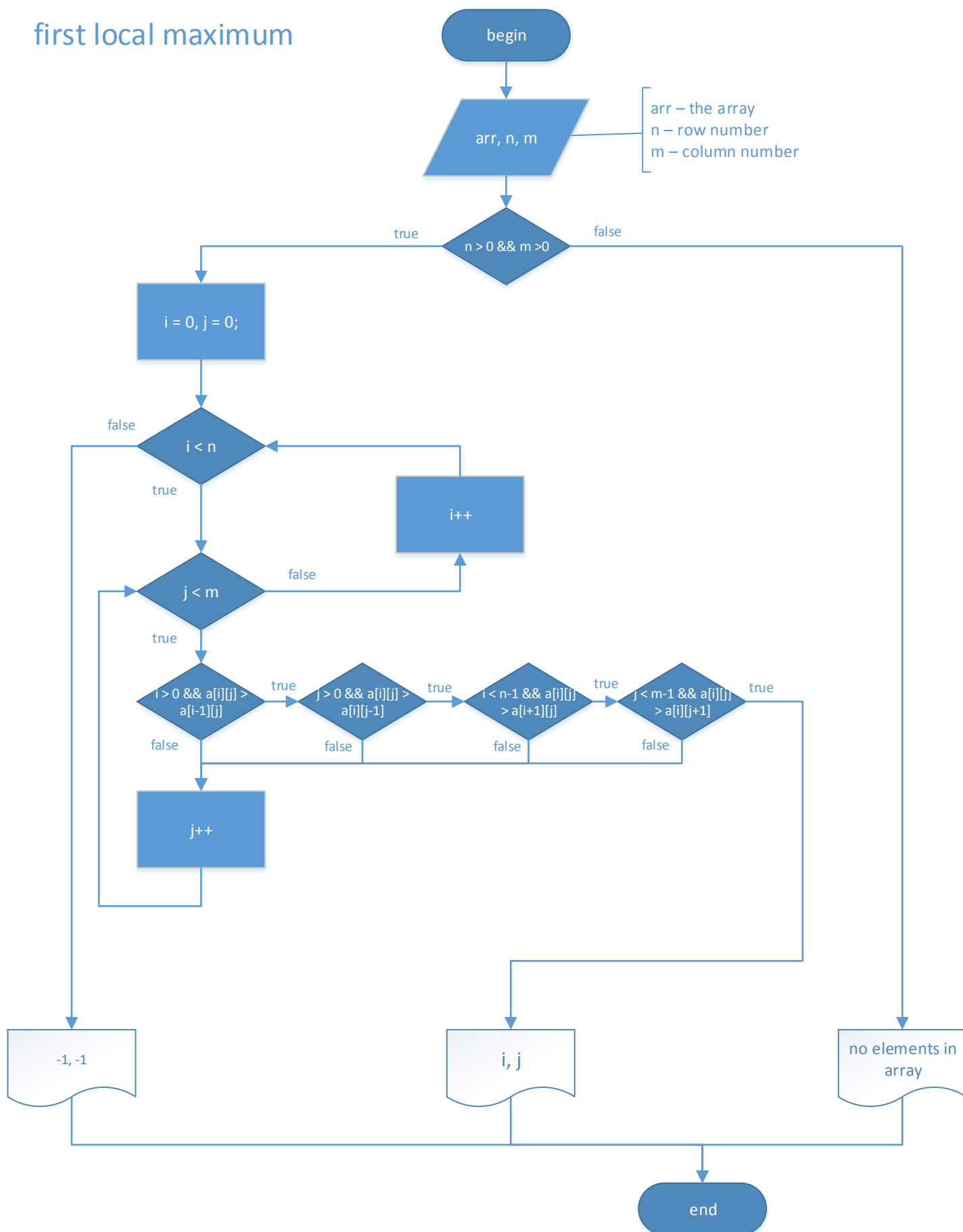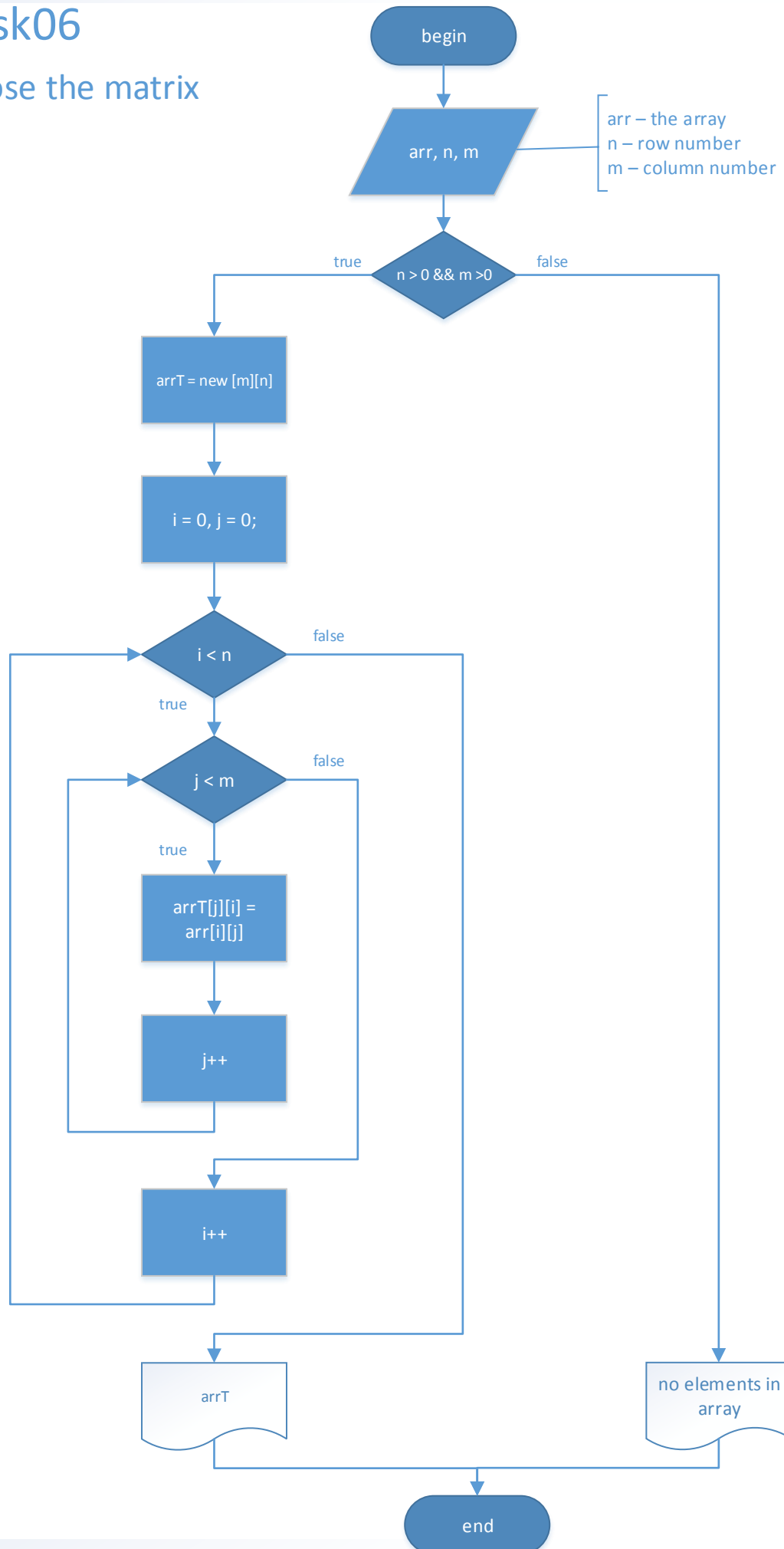
Task06

Transpose the square integer matrix

begin

arr, n

arr – the array
n – row & column number

n > 0

true / false

i = 0

i < n

false

true

j = i

j < n

false

true

j++

i != j

false

true

```
arr[i][j] ^= arr[j][i];
arr[j][i] ^= arr[i][j];
arr[i][j] ^= arr[j][i];
```

i++

arrT

no elements in array

end