# Advanced Programming

Martijn Vogelaar 1047391
Gianni Monteban 1047546

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## Exercise 5. Assuming mat to be defined as in the previous example, what results do you expect from the following expressions:

### ([3,0,5], [])[[]]

dim(3)
shape<3,0,5>
<>

### ([3,0,5], [])[[1]]

dim(2)
shape(0,5)
<>

### ([3,0,5], [])[[1,0]]

error, acces at non existing part

### mat[reshape([2,0], [])]

can't be printed ??

## Exercise 6. What results do you expect from the following expressions:

### min(reshape([3,0,5], []), 42)

dim(3)
shape([3,0,5])
<>

### reshape([3,0,5], []) + reshape([3,0,5], [])

dim(3)
shape([3,0,5])
<>

### reshape([1,1], [1]) + reshape([1], [1])

error since the shapes are different

## Exercise 7. Which of the following expressions can be reformulated in terms of take,++, and the basic operations defined in the previous parts?

### drop (v, a)

impossible, drop is exactly opossite of take.

### tile (v, o, a)

impossible, due to the offset it is impossible to just take the middle part of an array.

### shift ([n], e, a)

### shift ([m,n], e, a)

### rotate ([n], a)

### rotate ([m,n], a)

### Can we define the general versions of shift and rotate as well?

## Exercise 8. All operations introduced in this part apply to all elements of the array they are applied to. Given the array operations introduced so far, can you specify row-wise or column-wise summationsfor matrices? Try to specify these operations for a 2 by 3 matrix first.