

Quiz in TSRT04 Introduction in Matlab: Preparations

Functions: Learn the basic syntax of the built-in functions `zeros`, `ones`, `eye`, `sin`, `sum`, `prod`, `max`, `min`, `mean`, `abs`, `find`, `floor`, `ceil`, `round`, `disp`.

Plotting: Learn the basic commands to make a plot of a curve (e.g., sinus from 0 to 1). Learn how to make subplots and how to name the axes.

Indexing: Learn how to extract a specific element, row, or column from a matrix. Learn how to replace a certain part of a matrix with new numbers.

Logical operations: Learn how to use operators such as `>` `>=` `==` `&&` `||` `~=` `<` `<=` to check which properties that are fulfilled by the elements of a matrix.

Function: Learn the basic syntax of a function. Here is an example:

```
function minperkm = computeRunPace(dist, min, s)
    totalMinutes = min + s/60;
    minperkm = totalMinutes/dist;
end
```

Control structures: Learn the syntax of basic control structures. Here are some examples:

```
if amount >= 0
    interest = 0.02*amount;
else
    interest = 0.14*amount;
end

for index = 2:24
    currentSaving(index) = currentSaving(index-1) + monthlySaving;
end

while currentLoan >= 0
    currentLoan = currentLoan - monthlyPayment;
end
```

Quiz in TSRT04 Introduction in Matlab: Example

The real quiz contains 3 questions that resembles the following examples.

1. Create a vector with all integers between 5 and 400.
2. Given a matrix Z of dimension 4×2 , extract the third row and store it in x . Then replace the values on the third row with zeros.
3. Given a vector Z , find its largest value.
4. Given a matrix Z , replace all zero elements with -1 .
5. What is stored in x after running the following code?

```
x = zeros(4,1);  
for k = 1:4  
    x(k) = 1/k;  
end
```

6. Write a function `integerdivision` that takes two input numbers and divides the first one with the second one. The function should return the result, truncated to the closest smaller integer.

7. Sketch the figure generated by running the following commands:

```
plot(5:-1:0);  
xlabel('Day');  
ylabel('Money');  
title('Loss');
```

8. The last four lines below contains coding mistakes that will cause errors. Point out and explain at least three of these mistakes.

```
x = [-1 2 -3 7]; % this line is correct!  
x(-3) = 3;  
Plot(x);  
z = x*x;
```