

NAME : ALI AYMAN MOHAMED

The image displays two screenshots of the MATLAB R2016a environment. The top screenshot shows the execution of a script named 'calcdism.m'. The script defines a vector 'x' with values [1, 4, 7, 2, 5, 8, 3, 6, 9], calculates the time taken to traverse it, and computes the distances between the first three points. The Command Window shows the output: 'distances = 4.4721 2.6284 4.4721' and 'the time taken by vector is 0.001616 and the the three distance is 4.472136 ,2.628427 ,4.472136>'. The bottom screenshot shows the definition of a function 'dpyvector' in a file named 'dpyvector.m'. The function takes two points 'p' and 'p1' as input and returns the distance 'dis' between them. The Command Window shows the same output as the top screenshot, indicating that the function was called from the script.

```
calcdism.m
1 %NAME:ALI AYMAN MOHAMED
2 %suppose we had 6 points and want t calc distance between each 2 points
3 clear
4 clc
5 x=[1,4,7,2,5,8,3,6,9];%first 3 points
6 y=x;%second 3points
7 t1=tic;
8 [distances]=dpyvector(x,y)
9 time1=toc(t1);
10 fprintf('the time taken by vector is %f and the the three distance is %f ,%f ,%f',time1,distances);
11
```

Command Window

```
distances =
    4.4721    2.6284    4.4721

the time taken by vector is 0.001616 and the the three distance is 4.472136 ,2.628427 ,4.472136>
```

Workspace

MATLAB R2016a

```
dpyvector.m
1 %NAME: ALI AYMAN MOHAMED
2 function [ dis ] = dpyvector( p ,p1 )
3
4 dis=sqrt( sum( (p1-p).^2 ) );
5
6 end
7
8
```

Command Window

```
distances =
    4.4721    2.6284    4.4721

the time taken by vector is 0.001616 and the the three distance is 4.472136 ,2.628427 ,4.472136>
```

Workspace

Click and drag to move dpyvector.m or its tabs.

dpyvector

MATLAB R2016a

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calidism x dpvector.m x dbyloops.m x fun.m x

```

1 %NAME: ALI AYMAN MOHAMED
2 %suppose we had 6 points and want t calc distance between each 2 points
3 clear
4 clc
5 x=[1,4,7;2,5,8;3,6,9];%first 3 points
6 y=x';%second 3points
7 t1=tic;
8 [distances]=dpvector(x,y);
9 time1=toc(t1);
10 fprintf ('the time taken by vecor is %f and the the three distance is %f ,%f\n',time1,distances);
11 t2=tic;
12 [dloop]=dbyloops(x,y);
13 time2=toc(t2);
14 fprintf ('the time taken by loops is %f and the the three distance is %f ,%f\n',time2,dloop);

```

Command Window

```

the time taken by vecor is 0.000760 and the the three distance is 4.472136 ,2.828427 ,4.472136
the time taken by loops is 0.005003 and the the three distance is 4.472136 ,2.828427 ,4.472136>>

```

Workspace

script Ln 6 Col 22

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calidism x dpvector.m x dbyloops.m x fun.m x

```

1 %NAME: ALI AYMAN MOHAMED
2 function [ dis ] = dpvector( p ,p1 )
3
4 dis=sqrt(sum((p1-p).^2));
5
6 end
7
8

```

Command Window

```

the time taken by vecor is 0.000760 and the the three distance is 4.472136 ,2.828427 ,4.472136
the time taken by loops is 0.005003 and the the three distance is 4.472136 ,2.828427 ,4.472136>>

```

Workspace

dpvector Ln 1 Col 2

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```
1 function [ dis ] = dbyloops( p,p1 )
2     [r,c]=size(p);
3     k=r*c;
4     d=zeros(r,c);
5     s=zeros(1,c);
6     for i=1:k
7         d(i)=(p1(i)-p(i))^2;
8     end
9     for i=1:c
10        s(i)= sum(d(:,i));
11        s(i)=sqrt(s(i));
12    end
13    dis=s;
14 end
15
16
```

Command Window

the time taken by vector is 0.000760 and the the three distance is 4.472136 ,2.828427 ,4.472136
the time taken by loops is 0.005003 and the the three distance is 4.472136 ,2.828427 ,4.472136>>

Workspace

Click and drag to move dbyloops.m or its tab..

dbyloops Ln 10 Col 21

Type here to search

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