NumPy Logs

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Logs

NumPy provides functions to perform log at the base 2, e and 10.

We will also explore how we can take log for any base by creating a custom ufunc.

All of the log functions will place -inf or inf in the elements if the log can not be computed.

Log at Base 2

Use the `log2()` function to perform log at the base 2.

Example

Find log at base 2 of all elements of following array:

```
import numpy as np

arr = np.arange(1, 10)

print(np.log2(arr))
```

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Note: The `arange(1, 10)` function returns an array with integers starting from 1 (included) to 10 (not included).

Log at Base 10

Use the `log10()` function to perform log at the base 10.

Example

Find log at base 10 of all elements of following array:

```
import numpy as np

arr = np.arange(1, 10)

print(np.log10(arr))
```

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Natural Log, or Log at Base e

Use the `log()` function to perform log at the base e.

Example

Find log at base e of all elements of following array:

```
import numpy as np

arr = np.arange(1, 10)
```

```
print(np.log(arr))
```

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Log at Any Base

NumPy does not provide any function to take log at any base, so we can use the `frompyfunc()` function along with inbuilt function `math.log()` with two input parameters and one output parameter:

Example

```
from math import log
import numpy as np

nplog = np.frompyfunc(log, 2, 1)

print(nplog(100, 15))
```

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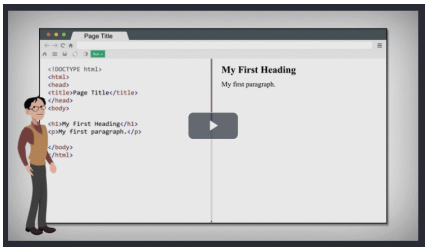

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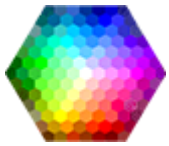

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