demo_kmeans

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c:\users\geral\documents\matlab\hw06\demo_kmeans.py

```
Executable script to demonstrate KMeans.
Plots the KMeans clustering process stepwise.
Optionally records a MP4 video.

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```

Modules

clustering
kernel
numpy
matplotlib.pyplot
utils

Functions

init_argparse(parents=[])

```
init_argparse(parents=[]) -> parser
Initialize an ArgumentParser for this module.

Args:
    parents: A list of ArgumentParsers of other scripts, if there are any.

Returns:
    parser: The ArgumentParsers.
```

main(args)

```
main(args) -> exit code
The main function to execute this script.

Args:
    args: The namespace object of an ArgumentParser.
Returns:
    An exit code. (0=OK)
```

plot2D_kmeans(ax, X, Y, means)

```
plot2D_kmeans(ax, X, Y, means)
Plots the KMeans status to given axes.

Args:
    ax: The matplotlib axes.
    X: The ground truth dataset.
    Y: The assigned cluster labels.
    means: The cluster centers.
```

plot_convergence(ax, step, delta)

```
plot_convergence(ax, step, delta)
Plots the convergence of the KMeans process
based on the update delta.

Args:
    ax: The matplotlib axes.
    step: The update step number.
    delta: The update delta.
```

time(...)

```
time() -> floating point number

Return the current time in seconds since the Epoch.
Fractions of a second may be present if the system clock provides them.
```

Data

KMEANS_INIT_MODES = ('mean', 'select', 'uniform', 'normal', 'kmeans++')
LAPLACIAN_MODES = ('default', 'shi', 'jordan')
last_call = 0