# feedforwardnet

Feedforward neural network

## Syntax

```
feedforwardnet(hiddenSizes,trainFcn)
```

## Description

Feedforward networks consist of a series of layers. The first layer has a connection from the network input. Each subsequent layer has a connection from the previous layer. The final layer produces the network's output.

Feedforward networks can be used for any kind of input to output mapping. A feedforward network with one hidden layer and enough neurons in the hidden layers, can fit any finite input-output mapping problem.

Specialized versions of the feedforward network include fitting (`fitnet`) and pattern recognition (`patternnet`) networks. A variation on the feedforward network is the cascade forward network (`cascadeforwardnet`) which has additional connections from the input to every layer, and from each layer to all following layers.

`feedforwardnet(hiddenSizes,trainFcn)` takes these arguments,

| | |
|---|---|
| `hiddenSizes` | Row vector of one or more hidden layer sizes (default = 10) |
| `trainFcn` | Training function (default = `'trainlm'`) |

and returns a feedforward neural network.

## Examples

Here a feedforward neural network is used to solve a simple problem.

```
[x,t] = simplefit_dataset;
net = feedforwardnet(10)
net = train(net,x,t);
view(net)
y = net(x);
perf = perform(net,y,t)
```

## See Also

`cascadeforwardnet` | `fitnet` | `patternnet`