How to Generate a Normally Distributed Dataset

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Generating a dataset following a normal distribution involves creating a set of data points that conform to the bell-shaped curve of a normal distribution. This can be achieved by using a random number generator to generate values that follow a normal distribution with a specified mean and standard deviation. The dataset can then be further refined by adjusting the mean and standard deviation to fit the desired characteristics. This method allows for the creation of a dataset that resembles real-world data and can be used for statistical analysis and modeling.

Normal Distribution Dataset Generator

```
@import
url('https://fonts.googleapis.com/css?family=Droid+Serif|Raleway');

.axis-y .domain {
display: none;
}

h1 {
text-align: center;
font-size: 50px;
margin-bottom: 0px;
font-family: 'Raleway', serif;
}

p {
color: black;
text-align: center;
```

```
margin-bottom: 15px;
margin-top: 15px;
font-family: 'Raleway', sans-serif;
}

#words {
color: black;
font-family: Raleway;
max-width: 550px;
margin: 25px auto;
line-height: 1.75;
padding-left: 100px;
}

#calcTitle {
text-align: center;
font-size: 20px;
margin-bottom: 0px;
font-family: 'Raleway', serif;
}

#hr_top {
width: 30%;
margin-bottom: 0px;
border: none;
```

```
height: 2px;
color: black;
background-color: black;
}

#hr_bottom {
width: 30%;
margin-top: 15px;
border: none;
height: 2px;
color: black;
background-color: black;
}

#words label, input {
display: inline-block;
vertical-align: baseline;
width: 350px;
}

#button {
border: 1px solid;
border-radius: 10px;
margin-top: 20px;
padding: 10px 10px;
```

```
cursor: pointer;
outline: none;
background-color: white;
color: black;
font-family: 'Work Sans', sans-serif;
border: 1px solid grey;
/* Green */
}

#button:hover {
background-color: #f6f6f6;
border: 1px solid black;
}
#words_intro {
color: black;
font-family: Raleway;
max-width: 550px;
margin: 25px auto;
line-height: 1.75;
}

textarea {
width: 100px;
height: 500px;
```

display: block;
margin-left: auto;
margin-right: auto;
}

This tool automatically generates a normally distributed dataset based on a population mean and standard deviation.To generate a normally distributed dataset, simply specify the values below and then click the "Generate" button.

Mean of dataset: 0.023

Standard deviation of dataset: 0.849

function binomialCalc() {

//get input values
var mean = document.getElementById('mean').value;
var sd = document.getElementById('sd').value;
var n = document.getElementById('n').value;

//define function to generate random variables
function gen_norm() {
var u = 0, v = 0;
while(u === 0) u = Math.random(); //Converting ;

```
for (i = 0; i < n; i++) {
num.push(parseFloat(gen_norm()*sd-
(-1*mean)).toFixed(2))
}

//find mean and sd of values
var meanOut = math.mean(num);
var sdOut = math.std(num);

//output mean and sd
document.getElementById('meanOut').innerHTML =
meanOut.toFixed(3);
document.getElementById('sdOut').innerHTML =
sdOut.toFixed(3);

//output normally distributed data values
var textarea =
document.getElementById("output_data");
textarea.value = num.join("n");

}
```