

MENTAL MODELS FOR IMPROVING YOUR CODE

By Chris Mercer



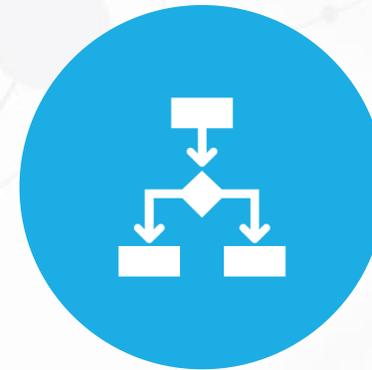
MENTAL MODELS FOR IMPROVING YOUR CODE



NEGATIVE SPACE

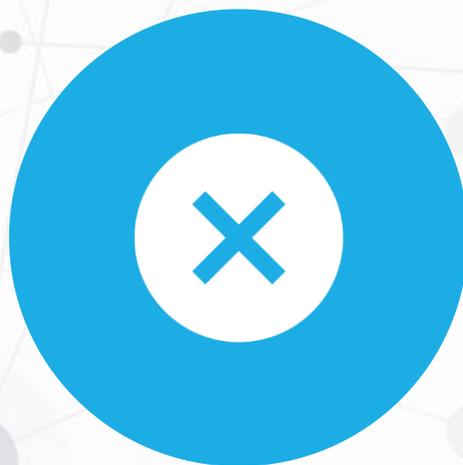


PARETO PRINCIPLE

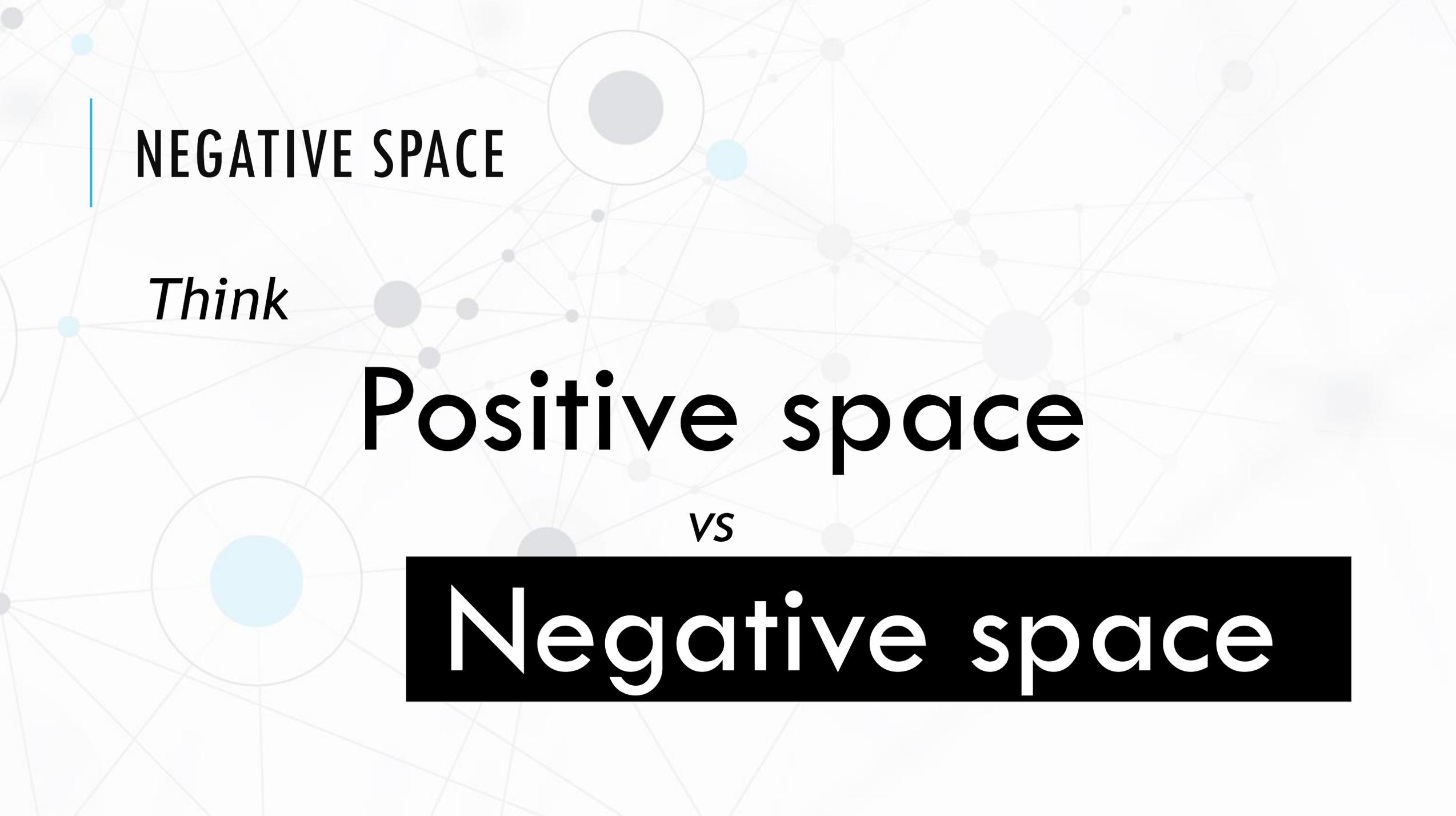


ABSTRACTION

MENTAL MODELS FOR IMPROVING YOUR CODE



NEGATIVE SPACE



NEGATIVE SPACE

Think

Positive space

VS

Negative space

NEGATIVE SPACE

OR

What is 

vs

What is 

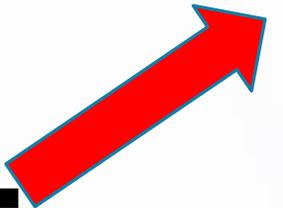
NEGATIVE SPACE

What does my code have

IN IT

VS

NOT HAVE IN IT



NEGATIVE SPACE

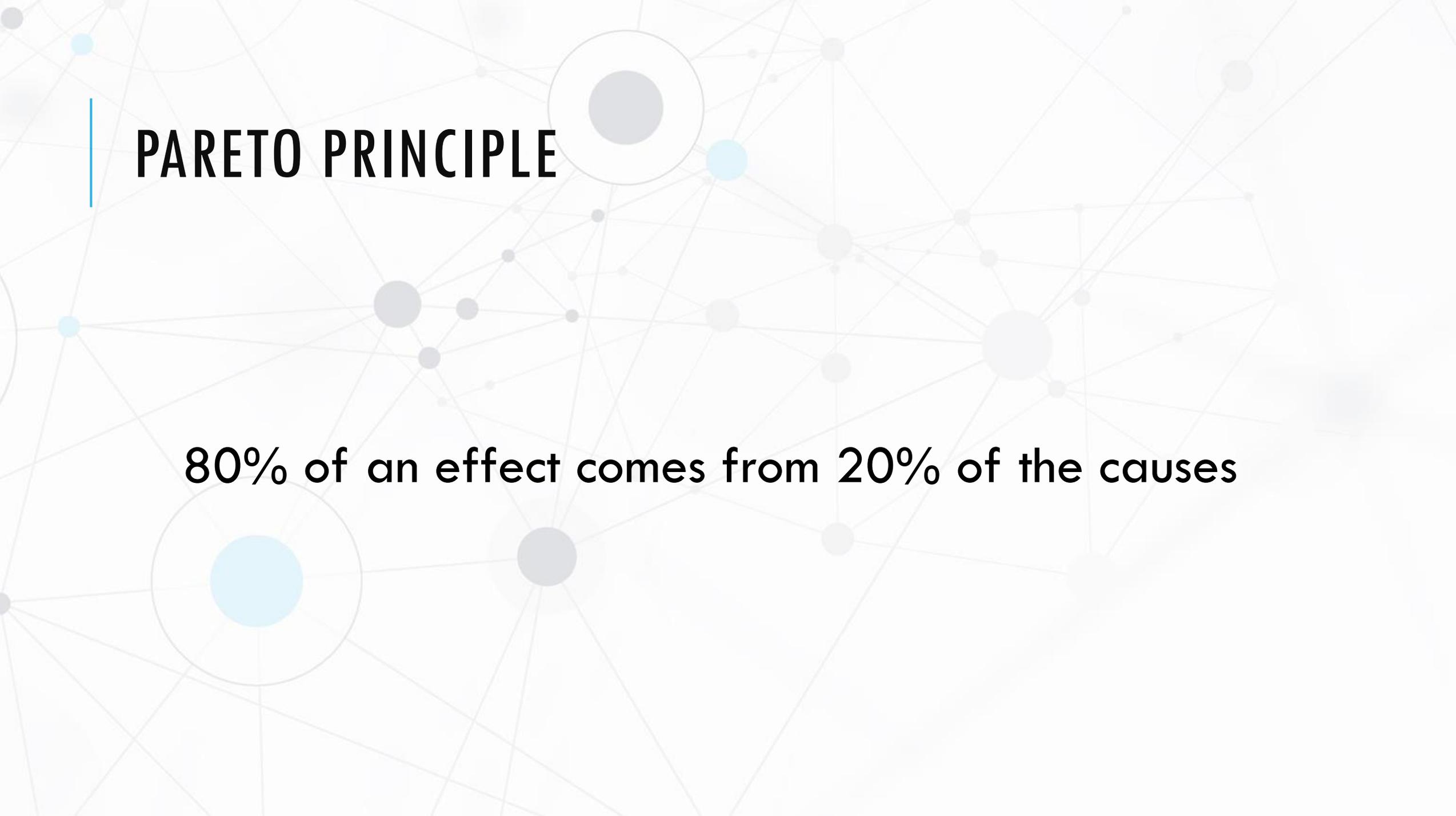
- Is there something missing?
- What is missing?
- Why is it missing?
- Was it a conscious choice?



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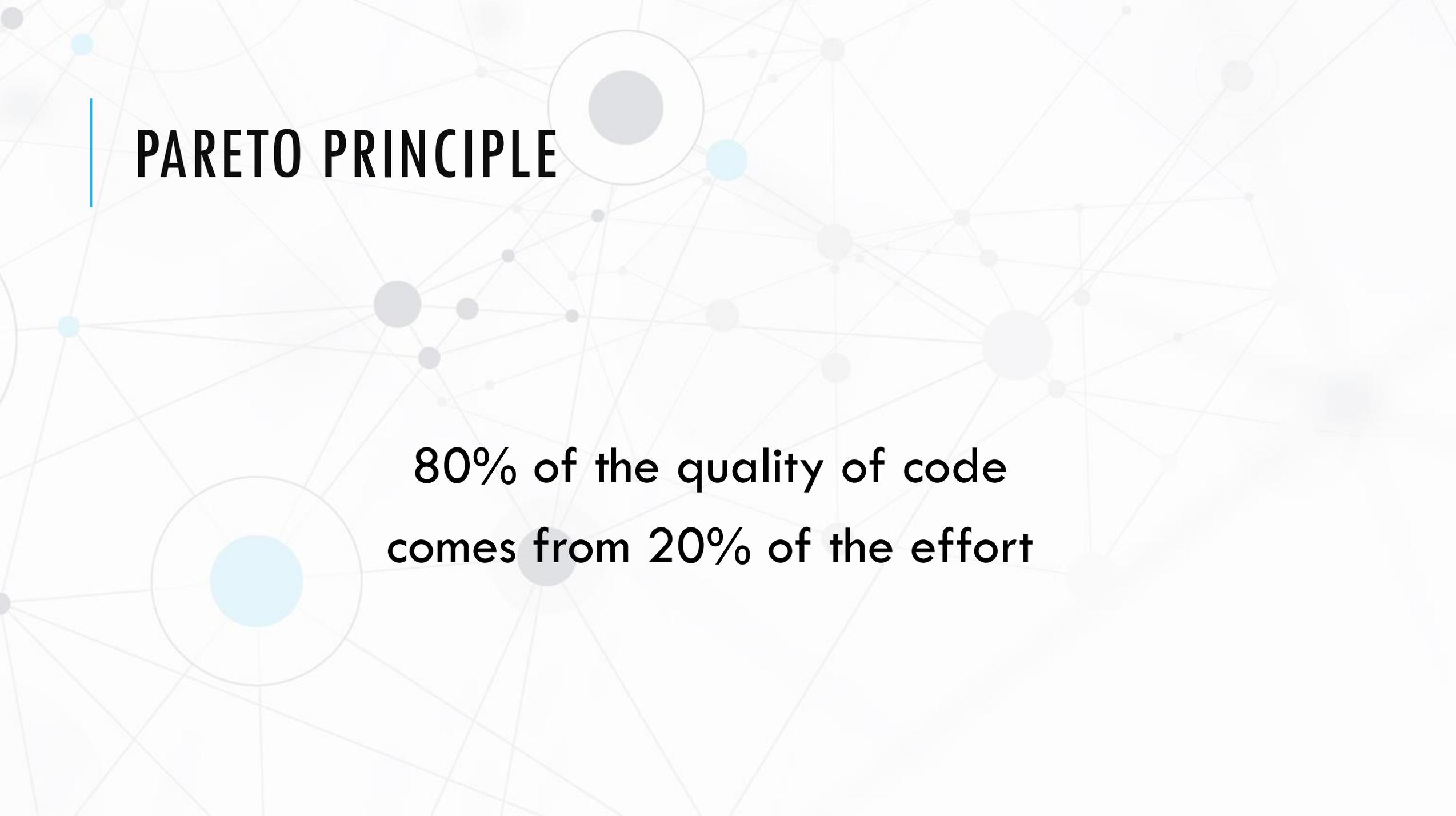


PARETO PRINCIPLE

A background network diagram consisting of a complex web of thin grey lines connecting various nodes. The nodes are represented by circles of different sizes and colors, including light blue, grey, and white. Some nodes are larger and more prominent, while others are smaller and less visible. The overall structure is a dense, interconnected web.

PARETO PRINCIPLE

80% of an effect comes from 20% of the causes



PARETO PRINCIPLE

**80% of the quality of code
comes from 20% of the effort**

PARETO PRINCIPLE

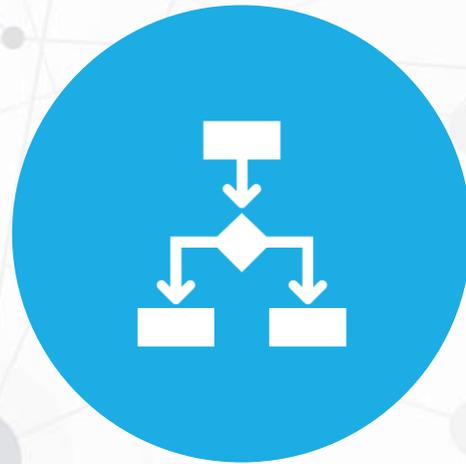


**Building a
strong base**

**Changing the
base as you go**

**Goodness will
prevail**

MENTAL MODELS FOR IMPROVING YOUR CODE



ABSTRACTION



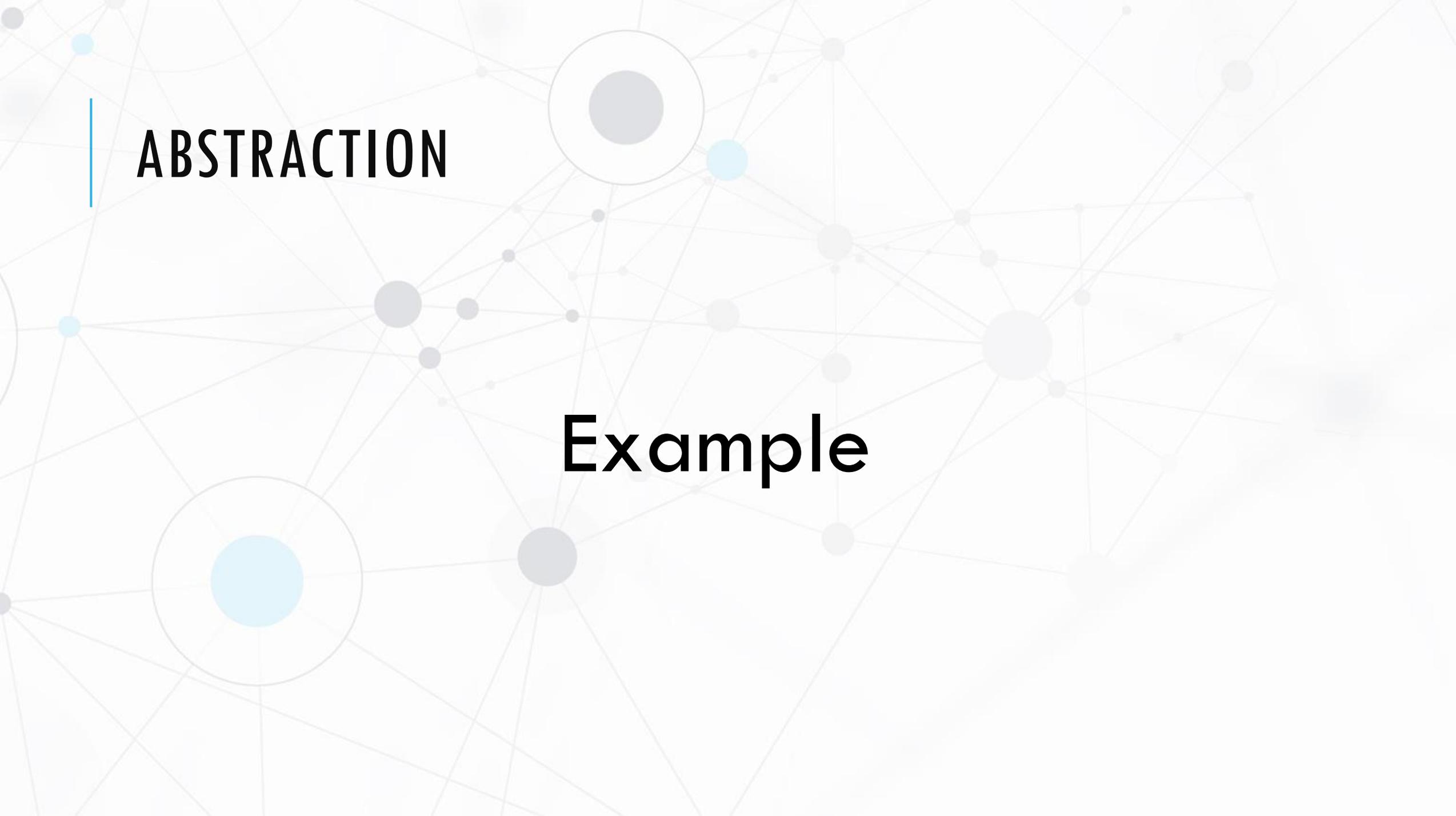
ABSTRACTION

REAL WORLD ABSTRACTIONS

and

CODING ABSTRACTIONS

are often different

A background network diagram consisting of a complex web of thin grey lines connecting various nodes. The nodes are represented by circles of different sizes and colors, including light blue, dark grey, and white. Some nodes are highlighted with larger, semi-transparent circles of the same color. A vertical blue line is positioned to the left of the word 'ABSTRACTION'.

ABSTRACTION

Example

ABSTRACTION

In the real world...

A Square

is a

Rectangle



ABSTRACTION

In code...

CodeSample.cs •

Volumes > Data > Dropbox > Work > FDB > Training > Alcor > CodeSample.cs

```
1 public class Rectangle
2 {
3     public int Width;
4     public int Height;
5
6     public Rectangle(int width, int height)
7     {
8         Height = height;
9         Width = width;
10    }
11 }
12
```

ABSTRACTION

In this version,
it is possible to
define a square
that isn't a square

CodeSample.cs

Volumes > Data > Dropbox > Work > FDB > Training > Alcor > CodeSample.cs

```
1  public class Rectangle
2  {
3      public int Width;
4      public int Height;
5
6      public Rectangle(int width, int height)
7      {
8          Height = height;
9          Width = width;
10     }
11 }
12
13 public class Square : Rectangle
14 {
15     public Square(int width, int height) : base(width, height)
16     {
17     }
18 }
19
```

ABSTRACTION

In this version,
it violates a
SOLID principle.

Can you see which
one?

CodeSample.cs

Volumes > Data > Dropbox > Work > FDB > Training > Alcor > CodeSample.cs

```
1  public class Rectangle
2  {
3      public int Width;
4      public int Height;
5
6      public Rectangle(int width, int height)
7      {
8          Height = height;
9          Width = width;
10     }
11 }
12
13 public class Square : Rectangle
14 {
15     public Square(int sideLength) : base(sideLength, sideLength)
16     {
17     }
18 }
19
```

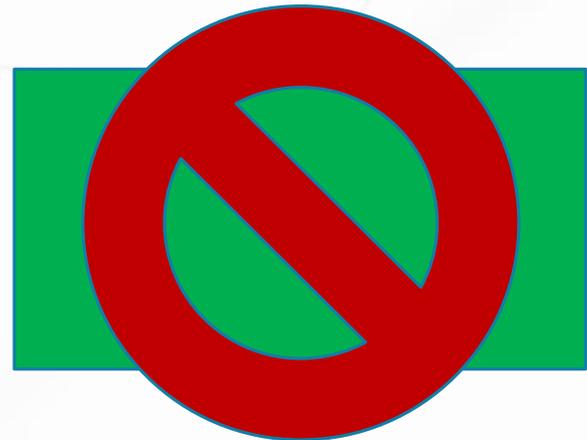
ABSTRACTION

So in code

A Square

is NOT a

Rectangle





ABSTRACTION



Do not force
a real-world abstraction
into code if it's not appropriate

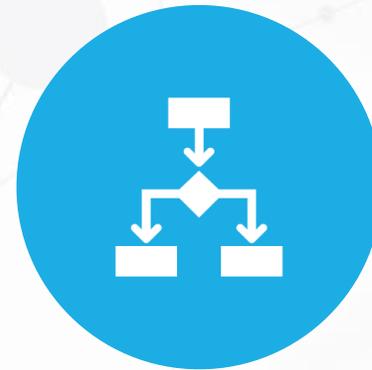
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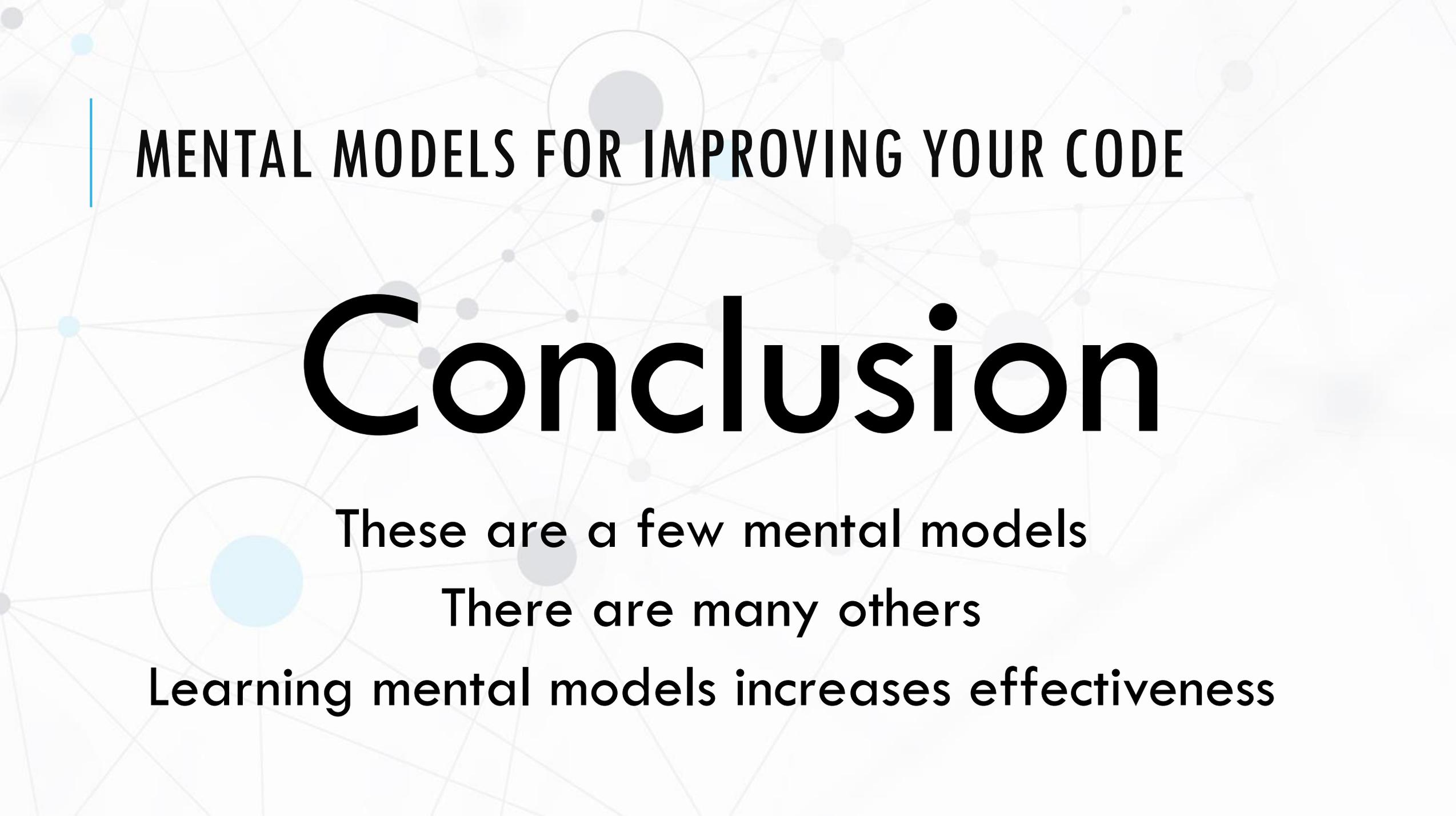
NEGATIVE SPACE



PARETO PRINCIPLE



ABSTRACTION



MENTAL MODELS FOR IMPROVING YOUR CODE

Conclusion

These are a few mental models

There are many others

Learning mental models increases effectiveness

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Questions?



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Thank you



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