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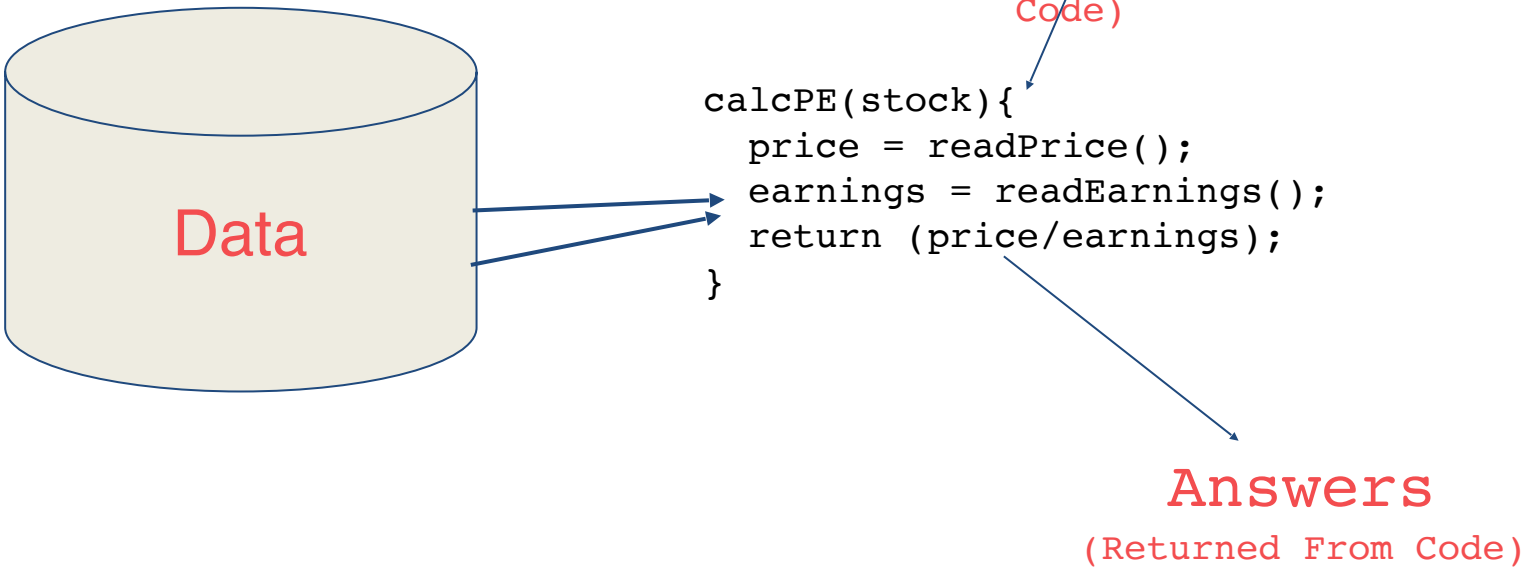
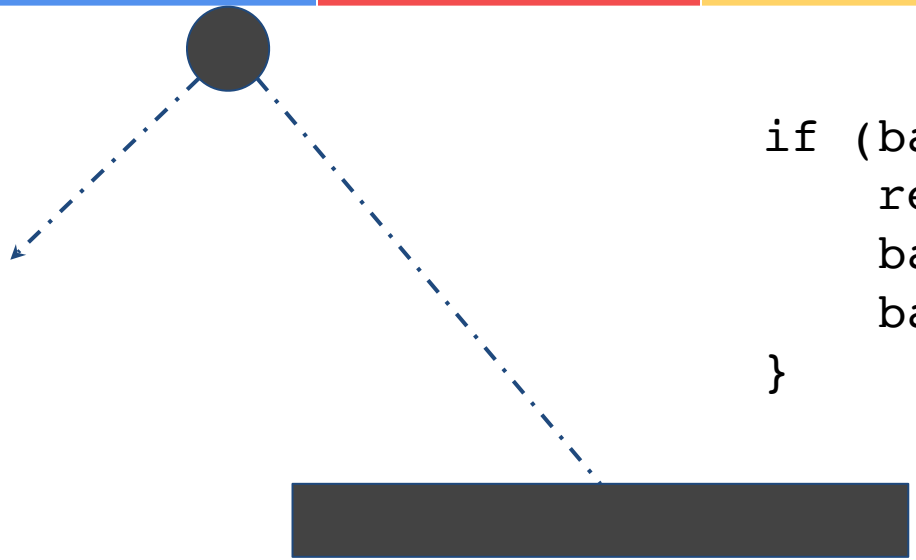
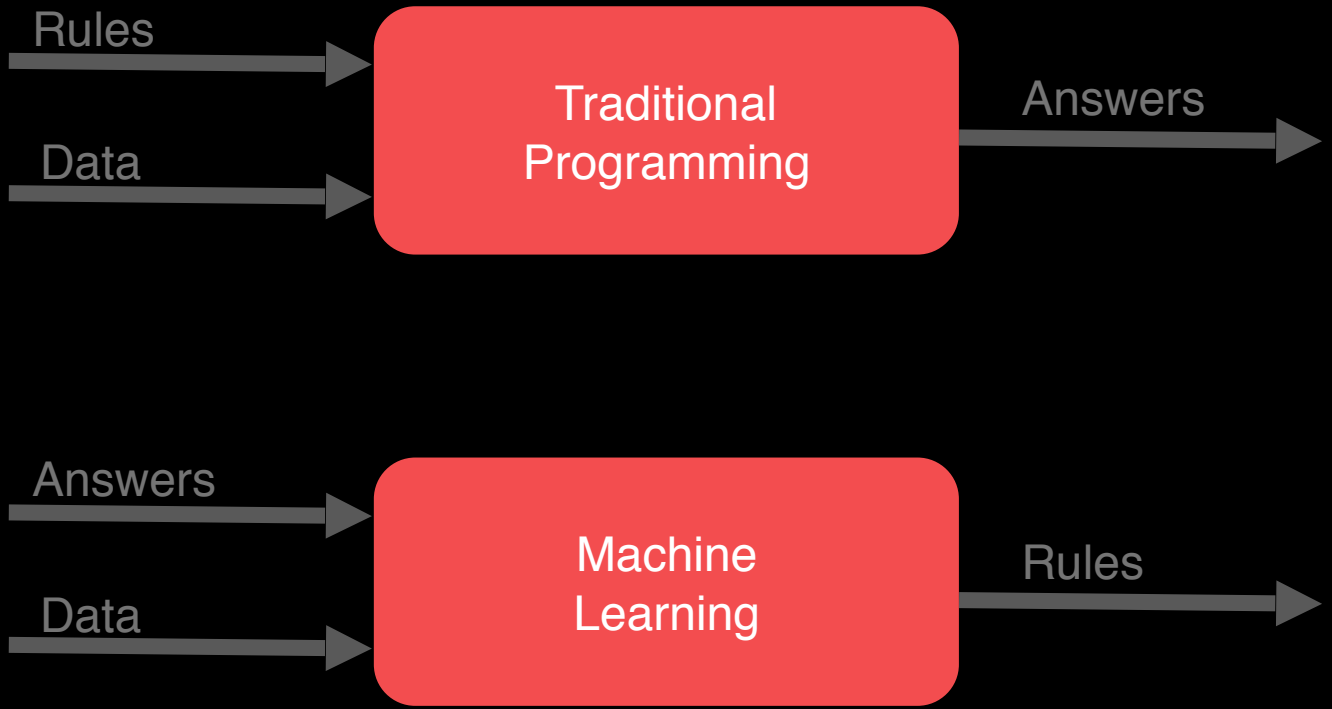

Rules
(Expressed in Code)
Data
calcPE(stock){
price = readPrice();
earnings = readEarnings();
return (price/earnings);
}
Answers
(Returned From Code)



```
if (ball.collide(brick)){
    removeBrick();
    ball.dx=-1*(ball.dx);
    ball.dy=-1*(ball.dy);
}
```

Rules
Data
Traditional Programming
Answers


Rules
Data
Traditional Programming
Answers
Answers
Data
Machine Learning
Rules

Activity Recognition

```
if(speed<4){

status=WALKING;
}
```

Activity Recognition

```
if(speed<4){

status=WALKING;
}
```

```
if(speed<4){

status=WALKING;
} else {

status=RUNNING;
}
```

Activity Recognition

```
if(speed<4){

status=WALKING;
}
```

```
if(speed<4){

status=WALKING;
} else {

status=RUNNING;
}
```

```
if(speed<4){
    status=WALKING;
} else if(speed<12){
    status=RUNNING;
} else {
    status=BIKING;
}
```

Activity Recognition

```
if(speed<4){

status=WALKING;
}
```

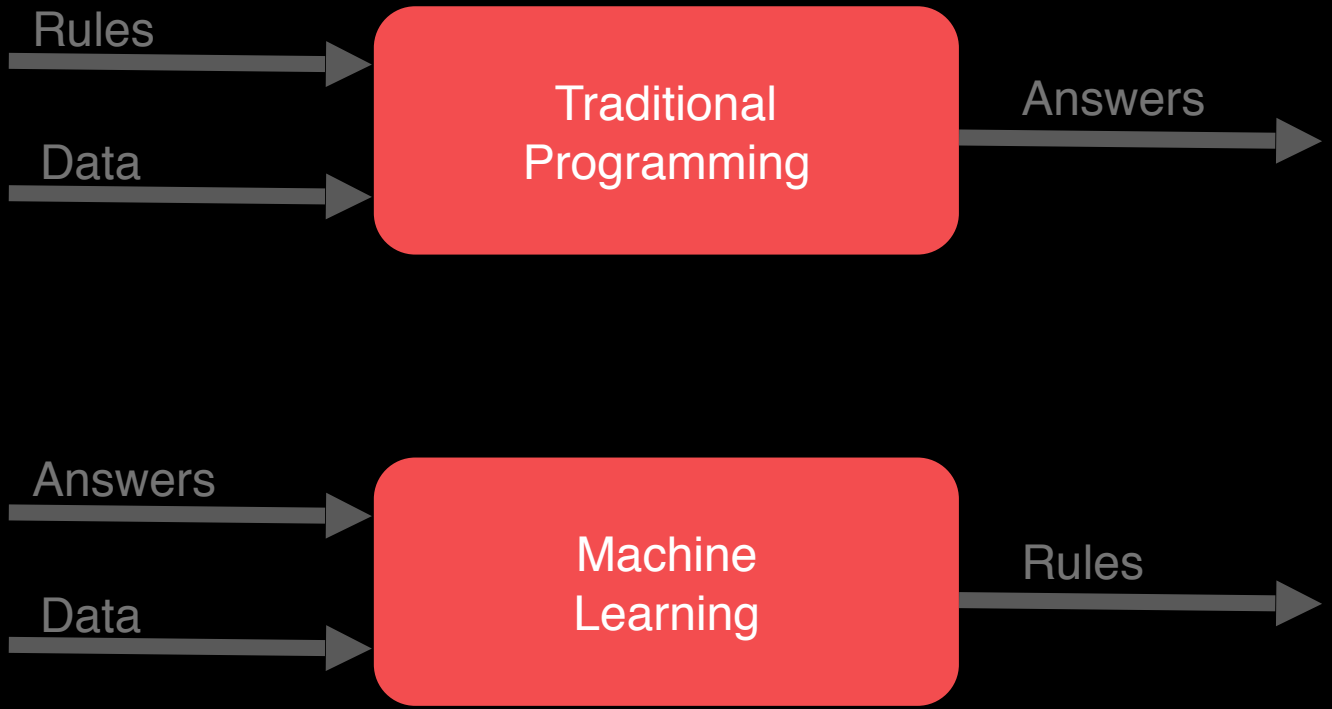
```
if(speed<4){

status=WALKING;
} else {

status=RUNNING;
}
```

```
if(speed<4){
    status=WALKING;
} else if(speed<12){
    status=RUNNING;
} else {
    status=BIKING;
}
```

```
// Oh crap
```


Rules
Data
Traditional Programming
Answers
Answers
Data
Machine Learning
Rules

Activity Recognition

```
01010010101001010
10100101010100101
11010100101010010
10100101010010101
00101010
```

Label = WALKING

```
10101001010010101
01010101001001001
00010010011111010
10111110101001001
11101011
```

Label = RUNNING

```
10010100111110101
01110101011101010
11101010101111010
10101111111100011
11010101
```

Label = BIKING

```
11111111110100111
01001111101011111
01010101110101010
10111010101010101
00111110
```

Label = GOLFING (Sort of)

X = -1, 0, 1, 2, 3, 4

Y = -3, -1, 1, 3, 5, 7

```
model = tf.keras.Sequential([keras.layers.Dense(units=1, input_shape=[1])])
model.compile(optimizer='sgd', loss='mean_squared_error')

xs = np.array([-1.0, 0.0, 1.0, 2.0, 3.0, 4.0], dtype=float)
ys = np.array([-3.0, -1.0, 1.0, 3.0, 5.0, 7.0], dtype=float)

model.fit(xs, ys, epochs=500)

print(model.predict([10.0]))
```

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