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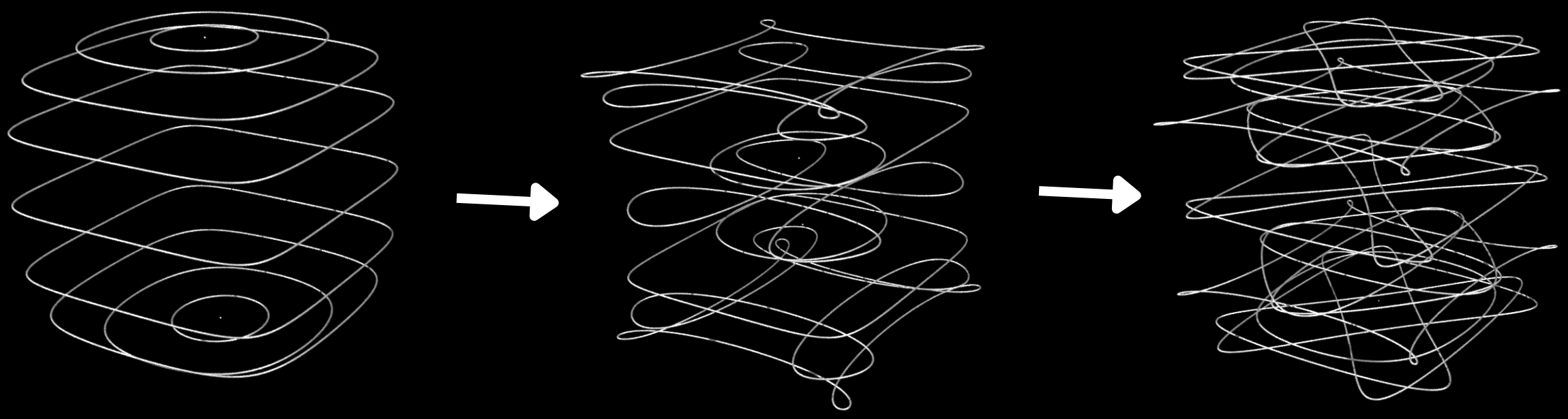
How to use perlin noise to create geometric patterns.



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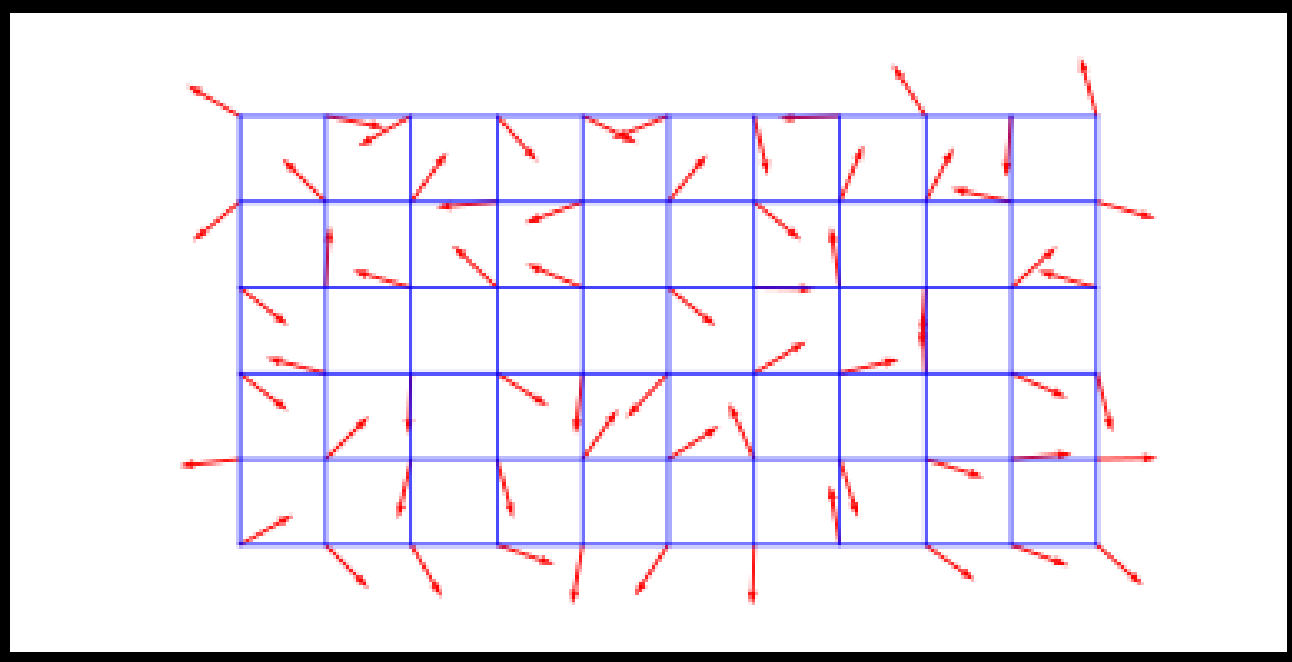
1-Defining a grid of random gradient vectors



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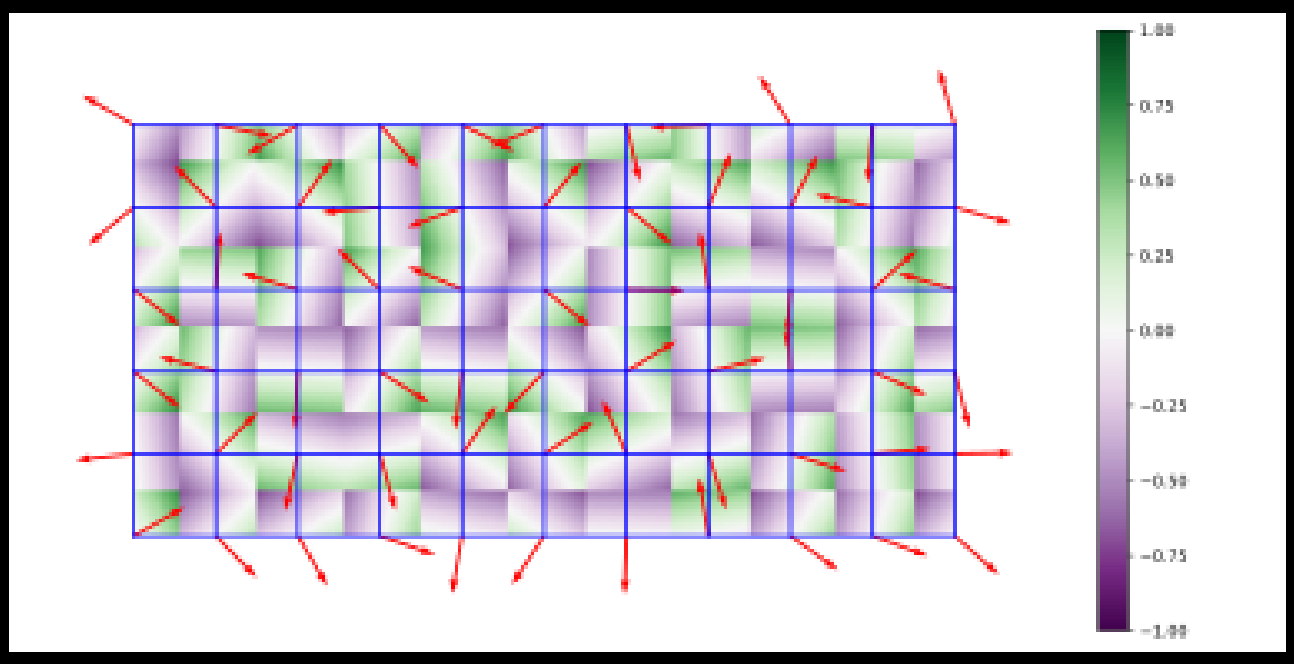
2-Computing the dot product between the gradient vectors and their offsets



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```vex
// Hash function to generate a unique float based on seed
float hash(float n) {
    float frac = sin(n) * 47999999988;
    return frac - int(frac);
}

// Gradient function to calculate dot product based on hash
float grad(float hash; float x) {
    int h = int(hash * 15.0) % 16;
    float grad = 1.0 - (h % 8) / 7.0 * (h < 8 ? 1.0 : -1.0);
    return (grad * x);
}
```

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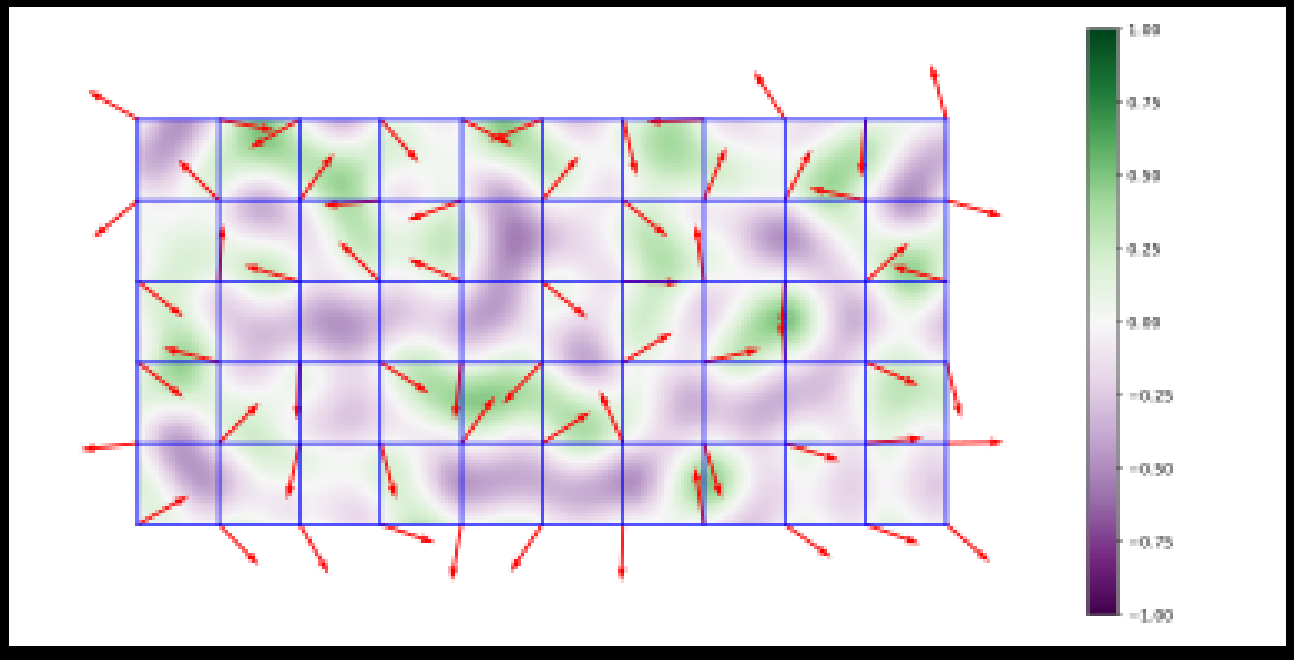
3-Interpolate between the values



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```
// Linear interpolation function
float custom_lerp(float a; float b; float t) {
 return a + t * (b - a);
}
```