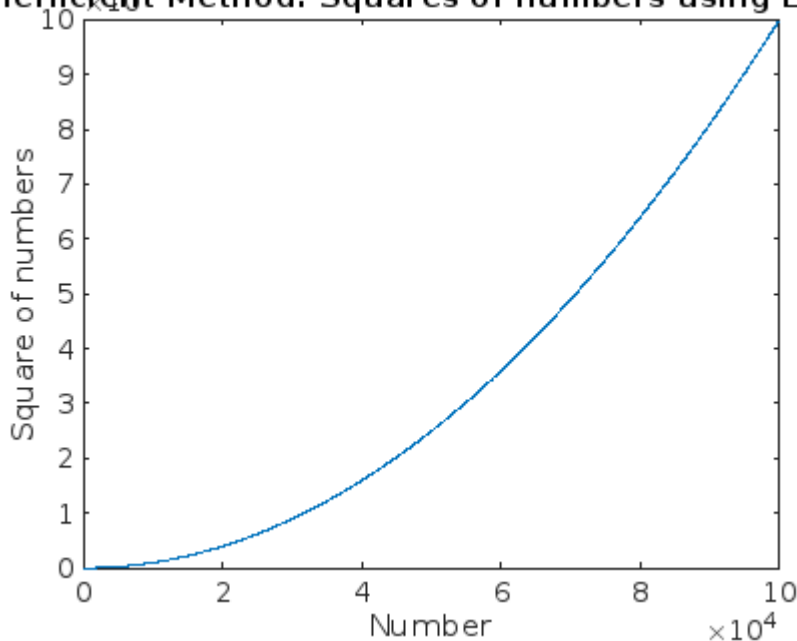# Efficient code vs. Inefficient code

Code readability, less number of lines of code, less possibility of errors, quicker code writing.

Inefficeint Code: Squares of numbers using Loops

```matlab
n = 1e5;
result = zeros(1, n);
for i = 1:n
    result(i) = i^2;
end
% Plot the graph for the above arithmetic:
figure;
plot(1:n, result);
title('Inefficient Method: Squares of numbers using Loops');
xlabel('Number');
ylabel('Square of numbers');
```
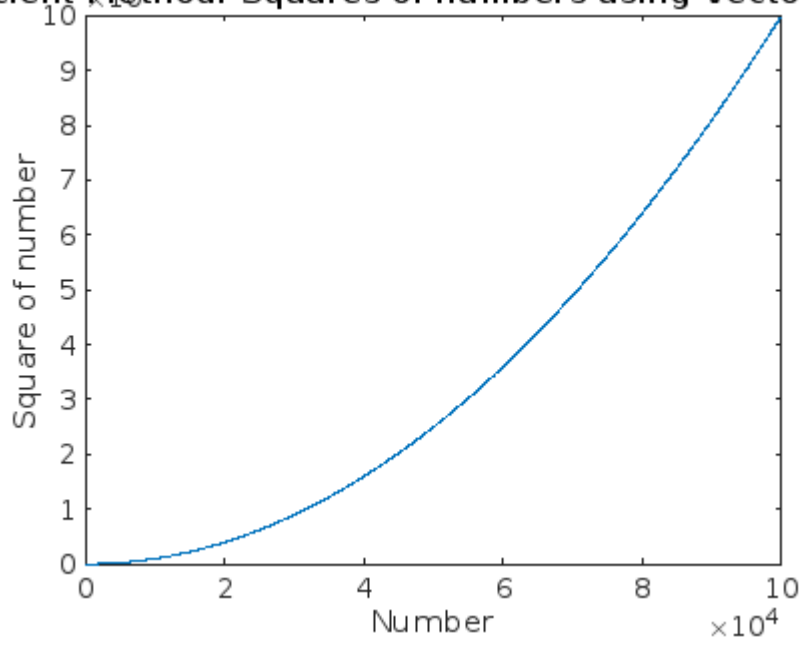

Efficent code: Squares of numbers using Vectorization

```matlab
n = 1e5;
result = (1:n).^2;
% Plot the result:
figure;
plot(1:n, result);
```

```
title('Efficient Method: Squares of numbers using Vectorization');
xlabel('Number');
ylabel('Square of number');
```


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