Date of Assignment: 27.01.2025
Date of Submission: 24.02.2025

Assignment 6

Question

If $F = x\sin(y)\hat{i} + y\cos(z)\hat{j} + z\tan(x)\hat{k}$, then find div(F) and curl(F)

Code

```
 1  syms x y z;
 2  F = [x*sin(y), y*cos(z), z*(x)];
 3  disp('Vector Function F = ');
 4  disp(F);
 5  div_F = divergence(F,[x,y,z]);
 6  disp('div(F) at (x,y,z) = ');
 7  disp(div_F);
 8  curl_F = curl(F,[x,y,z]);
 9  disp('curl(F) at (x,y,z) = ')
10  disp(curl_F);
```

Output

```
>> Assignment_6
Vector Function F =
[x*sin(y), y*cos(z), z*tan(x)]

div(F) at (x,y,z) =
cos(z) + tan(x) + sin(y)

curl(F) at (x,y,z) =
         y*sin(z)
-z*(tan(x)^2 + 1)
        -x*cos(y)

>>
```