**Digital Circuits lab**

1. Suppose that we want to synthesize a circuit that has three switches x and y. and z. The required functional behavior of the circuit is that the output must be equal to 1 if the majority of switches are open (1); otherwise the output must be 0.

|  |  |  |  |
| --- | --- | --- | --- |
| X | Y | Z | Output F |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

F = X’YZ + XY’Z + XYZ’ + XYZ