

**Name:** Anya Rajan

**Cruz ID:** arajan2

### Instructions to Compile/Run

- While in terminal, “cd” into the directory that contains the file “bloom\_filter.py”.
- Run the following command to run the file: `python3 bloom_filter.py`

### Output

```
(base) ucsc-guest-169-233-117-16:project_3 anyarajan$ python3 bloom_filter.py
Adding malicious URLs to Bloom Filter
(a) Computing False Positive Rate (FPR) on 10000 Unseen URLs
The false positive is: 0.0359
Please include your Solution for problem (b) in the submitted pdf file.
```

### Problem 3

To find the first part of the question, we need to multiply 1 million by 25 bytes and then divide by 1,000,000 to get the answer in MB. The answer is 25MB of memory. The next part of the question involves the following equation:  $km/8$ .  $k = 10$  and  $m = 800,000$ .  $10 * 800,000$  is 8,000,000. Divide that by 8, you get 1,000,000. Finally, divide this by 1,000,000 to get the answer in MB. The answer is 1MB.