

## EE 381 Project 2 Lab Report

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Resultt:

```
-----Problem 1-----
Enter the probability of heads: 0.5
Enter the number of trials to simulate: 10
Success
Fail
Fail
Success
Fail
Fail
Success
Success
Fail
Success
The number of Successes : 5
The number of Failures : 5

-----Problem 2-----
The probability of  $P(C|B)$  for row 1 is: 0.08257638315441784
The probability of  $P(C|B)$  for row 2 is: 0.47393364928909953
The probability of  $P(C|B)$  for row 3 is: 0.08264462809917356
The probability of  $P(C|B)$  for row 4 is: 0.08676591469540598
The probability of  $P(C|B)$  for row 5 is: 0.08683729433272395
```

Code:

```
# -*- coding: utf-8 -*-  
"""
```

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```
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"""
```

```
import random
```

```
print("-----Problem 1-----")  
headProbability=float(input("Enter the probability of heads: "))  
numberTrials=int(input("Enter the number of trials to simulate: "))  
success = 0  
fail = 0  
for i in range(numberTrials):  
    r = random.uniform(0,1)  
    if r<headProbability:  
        success = success + 1  
        print("Success")  
    else:  
        fail = fail + 1  
        print("Fail")  
  
print("The number of Successes : ", success)  
print("The number of Failures : ", fail)
```

```
print("\n-----Problem 2-----")
```

```
pC = [.0001,.001,.001,.0001,.001]  
pBC = [.9,.9,.9,.95,.95]  
pBCFalse=[.001,.001,.01,.001,.01]
```

```
for i in range(len(pC)):  
    probB = (pC[i]*pBC[i])+ pBCFalse[i]*(1-pC[i])  
    answer = (pC[i]*pBC[i])/probB  
    print("The probability of P(C|B) for row ",i+1," is: ",answer)
```