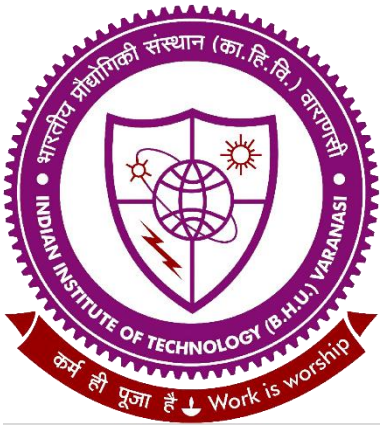


**CSE-535 NETWORK SECURITY**

**PRACTICAL ASSIGNMENT - 2**

# VISUALISING THE AVALANCHE EFFECT ON DES ROUNDS USING DIFFERENT PLAINTEXTS,HAMMING DISTANCES AND SECRET KEYS

**SUBMITTED BY:-**

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***Common initial plaintext used*: 3F5A2F0F0AC0B257**

***Common initial secret key used*: D3E5B2B0A0C0F57A**

**1.USING 5 DIFFERENT RANDOM PLAIN-TEXTS**

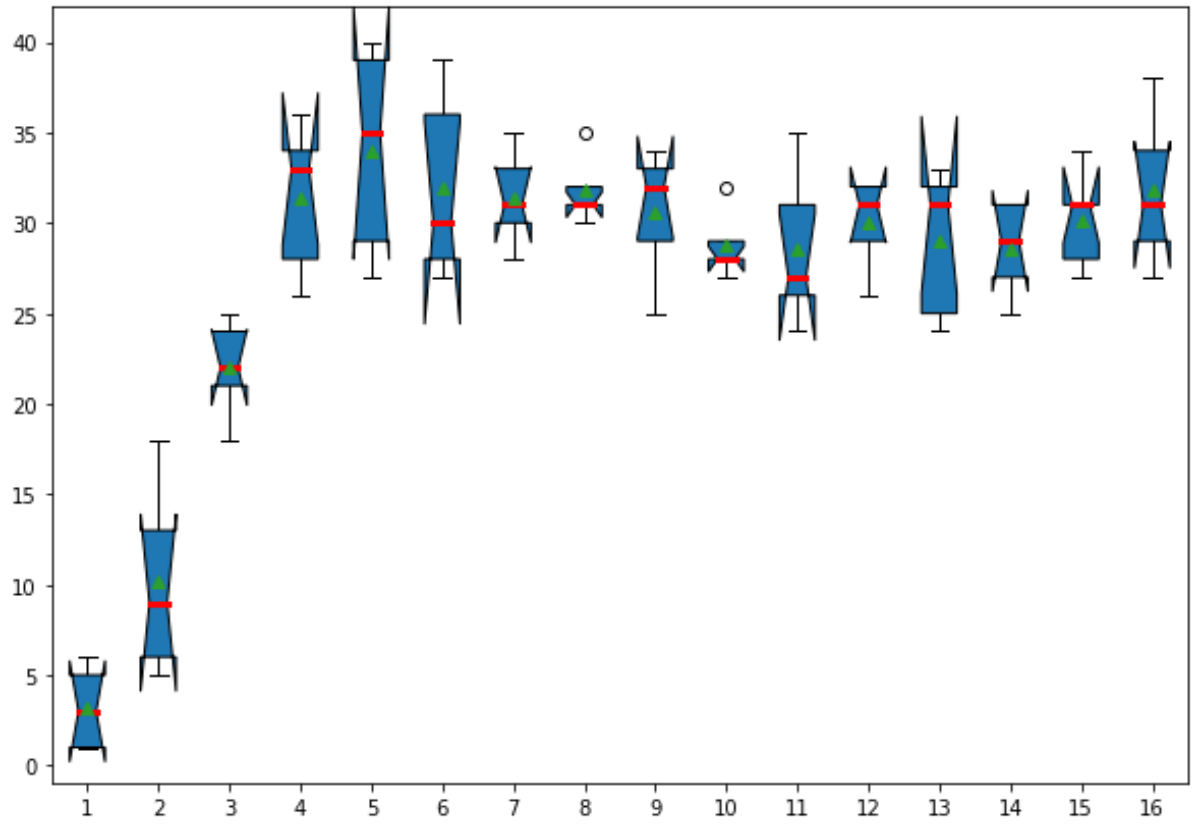
```
1.CHANGING PLAINTEXTS i.e USING 5 DIFFERENT PLAINTEXTS

[92] pt =  "3F5A2F0F0AC0B257"
     key = "D3E5B2B0A0C0F57A"
     xorPtList=[]
     for _ in range(5):
         xorPtList.append(xorN(pt,1))

     print("5 different plain texts are ")
     xorPtList

     5 different plain texts are
     ['3F5A2F0F0AC0B255',
      '3E5A2F0F0AC0B257',
      '3F5A2F0F0AD0B257',
      '3F5A2F0F0AC0B2D7',
      '3F5A2F0F0AC1B257']
```

**Box plots on different plaintexts**



## 2.USING 5 DIFFERENT RANDOM HAMMING DISTANCES

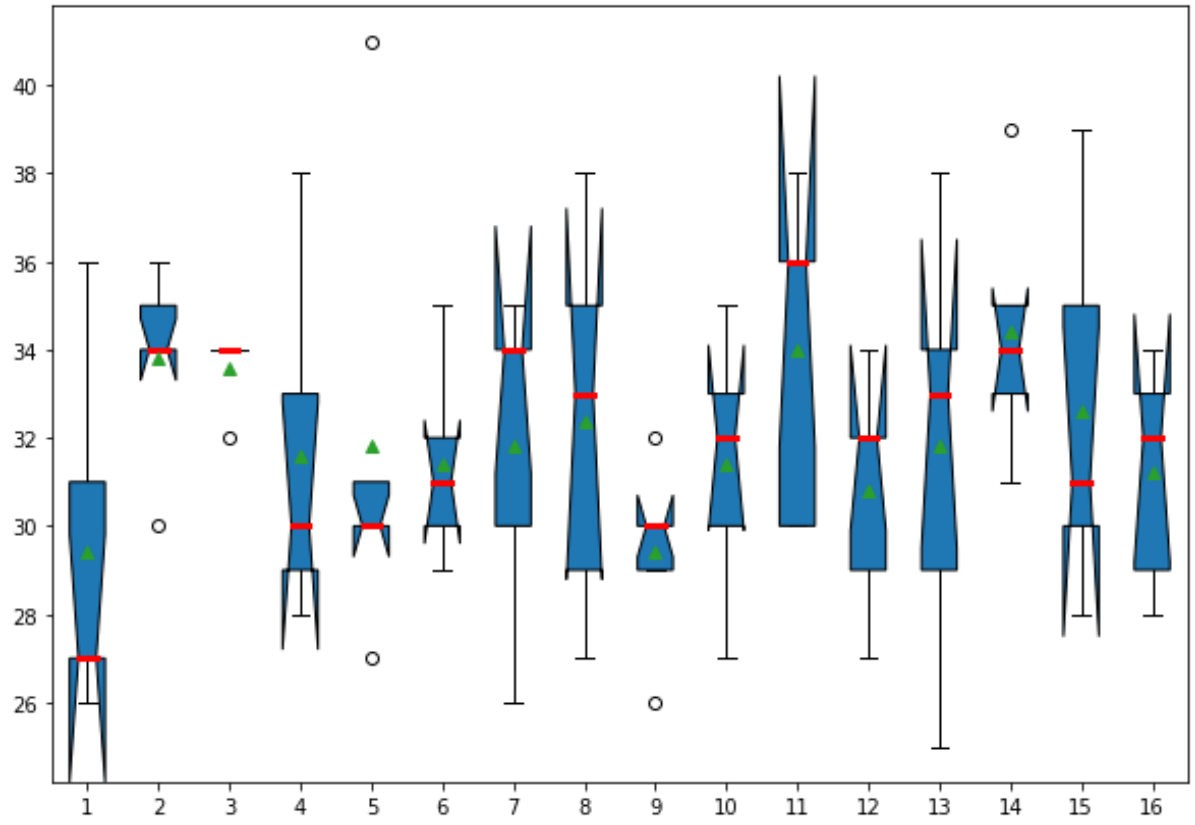
### 2 5 DIFFERENT HAMMING DISTANCE

```
[128] pt =  "3F5A2F0F0AC0B257"
      key = "D3E5B2B0A0C0F57A"
      xorPtList=[]
      for _ in range(5):
          xorPtList.append(xorN(pt,1))
```

```
[129] random5HDs=list(random.choices(range(64),k=5))
      print("5 different hamming distances are ")
      random5HDs
```

```
5 different hamming distances are
[47, 59, 35, 57, 60]
```

**Box plot on different hamming distance**



### 3.USING 5 DIFFERENT RANDOM SECRET KEYS

## 3. CHANGE KEYS i.e USING 5 DIFFERENT KEYS

```
[140] pt =  "3F5A2F0F0AC0B257"
      key = "D3E5B2B0A0C0F57A"
      xorPtList=[]
      for _ in range(5):
          xorPtList.append(xorN(pt,1))
```

```
[141] xorKeyList=[]
      for _ in range(5):
          xorKeyList.append(xorN(key,1))
```

```
[145] print("5 different keys are ")
      xorKeyList
```

```
5 different keys are
['D3E5B2A0A0C0F57A',
 'D3E592B0A0C0F57A',
 'D3E5B2B0A0C0F57B',
 'D3E5B2B0A0C0D57A',
 'D3E5B2B0A0C0F56A']
```

**Box plot on different keys**