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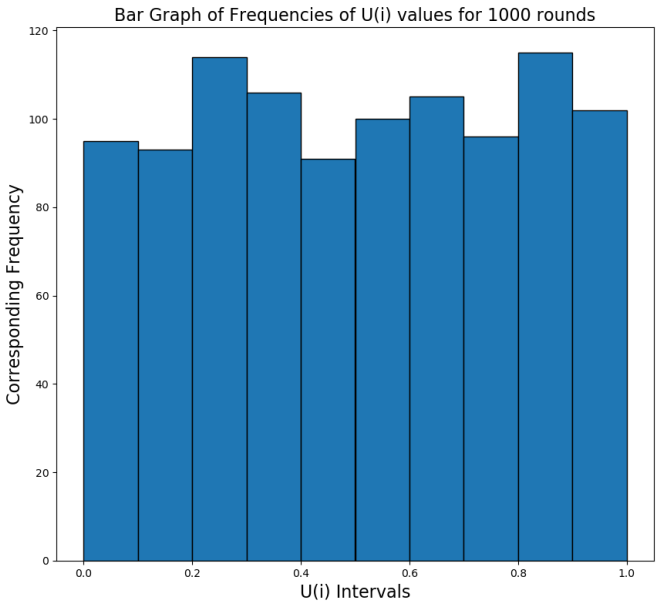
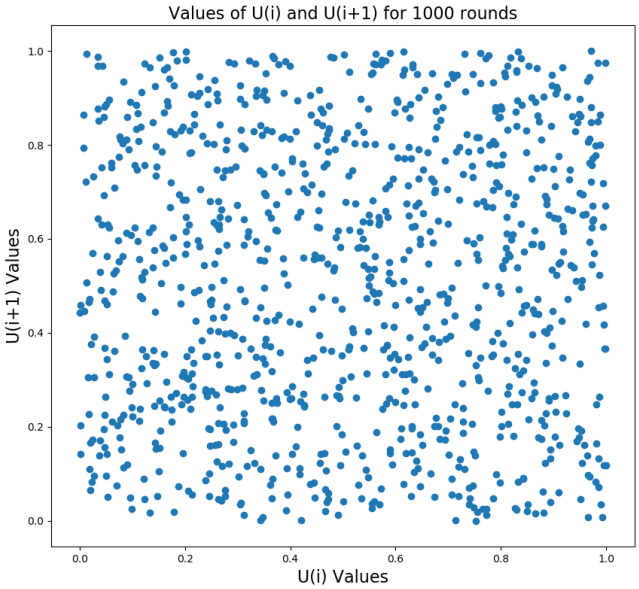
Roll No: **180123029**

Branch : **Mathematics and Computing**
Assignment : **Lab 2**
Date : **16 Sept 2020**

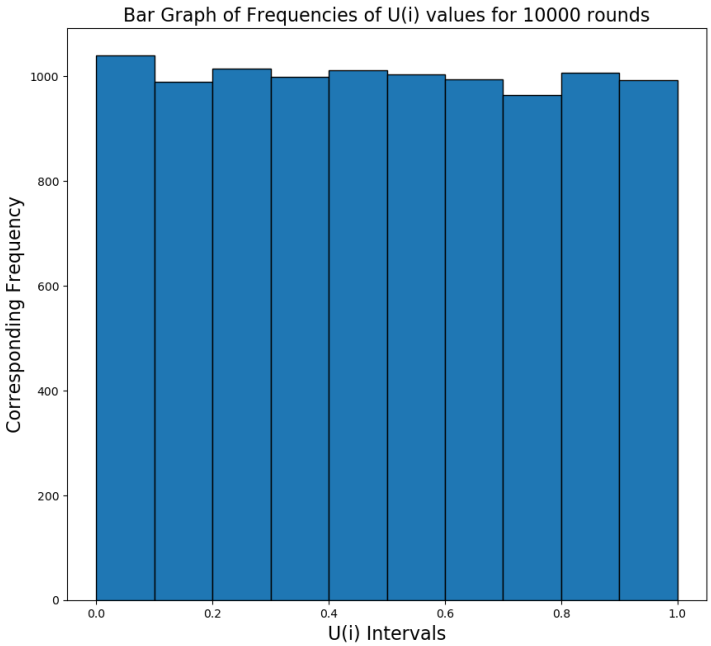
Q1.)

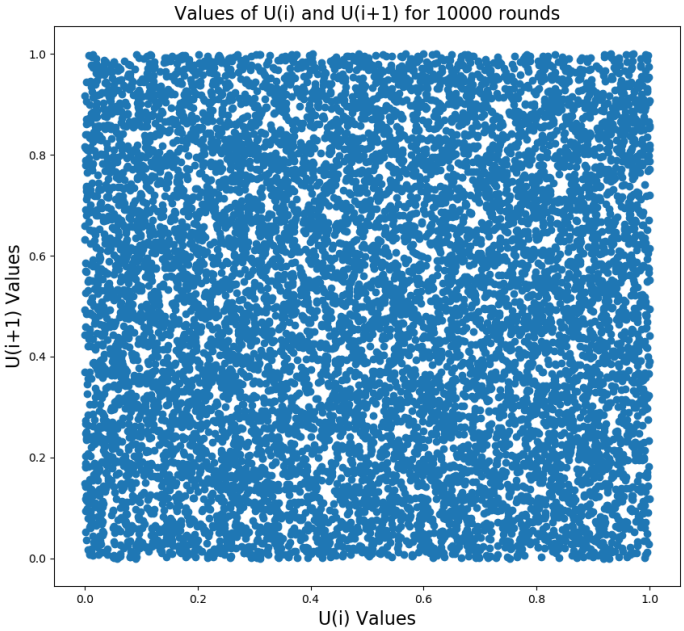
(a) for 1000 values:



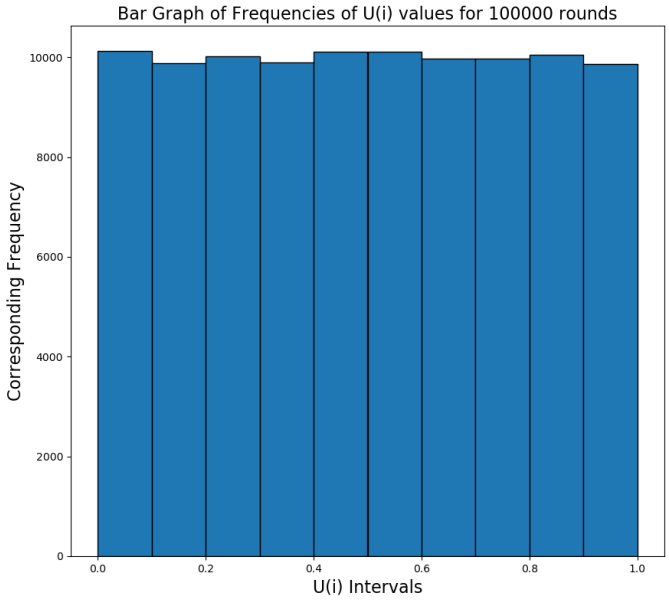


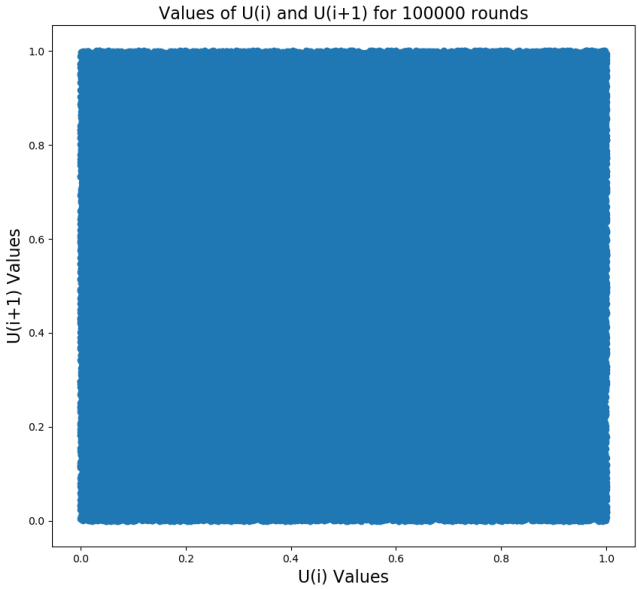
(b) for 10000 values:





(c) for 100000 values :

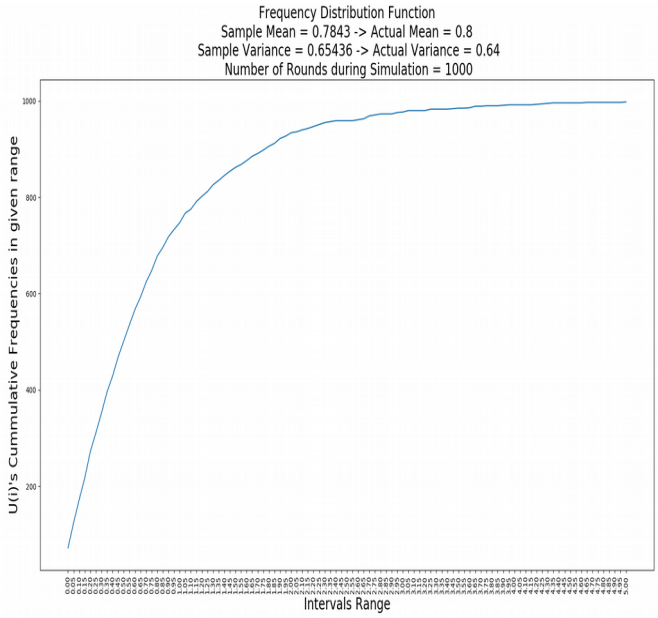


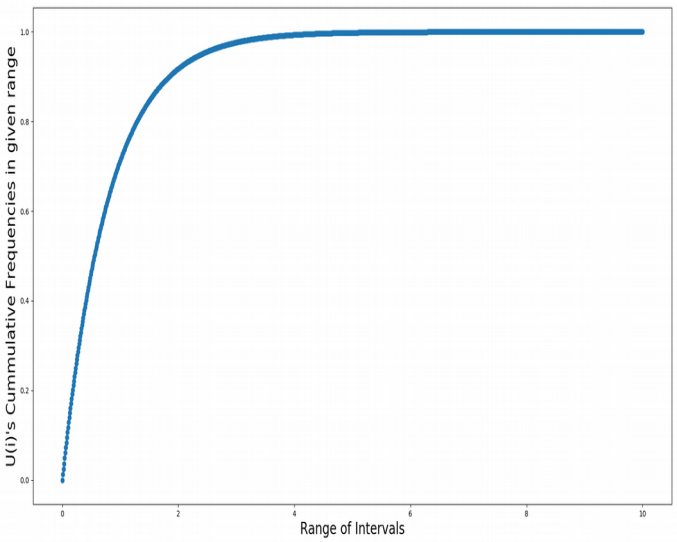


Observations : As the value of n increases the randomness increases as well. There will be more uniformity in bar graphs as we increase n.

Q.2)

(a) for 1000 values :



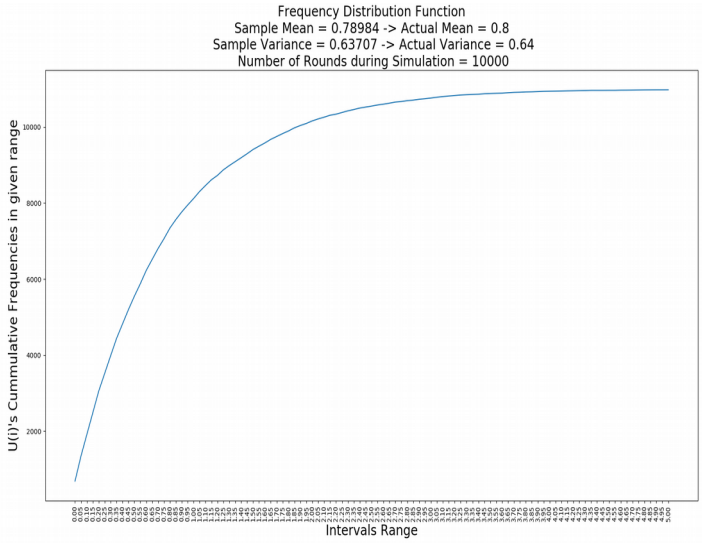


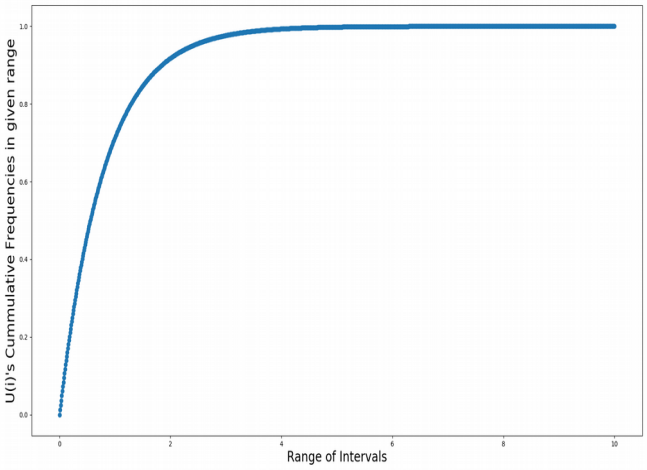
Observations : The mean and variance expected were very close to the sample case.

Expected Mean : 0.8 **Expected Variance : 0.64**

Actual Mean : 0.7843 **Actual Variance : 0.65436**

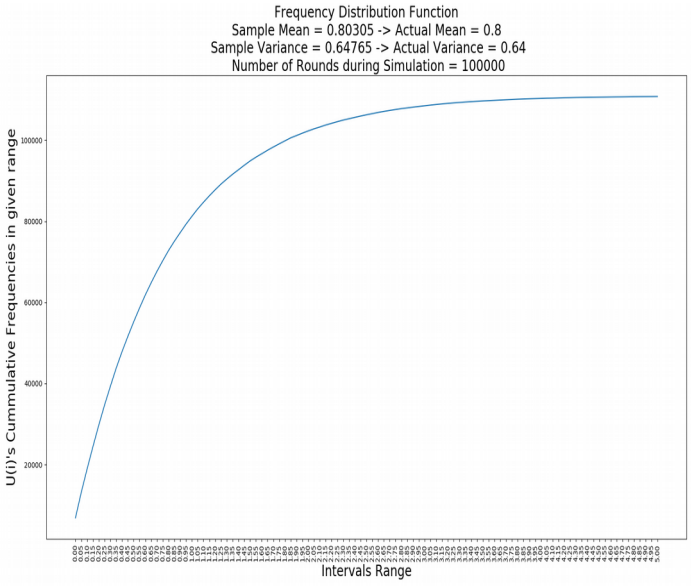
(b) for 10000 values :

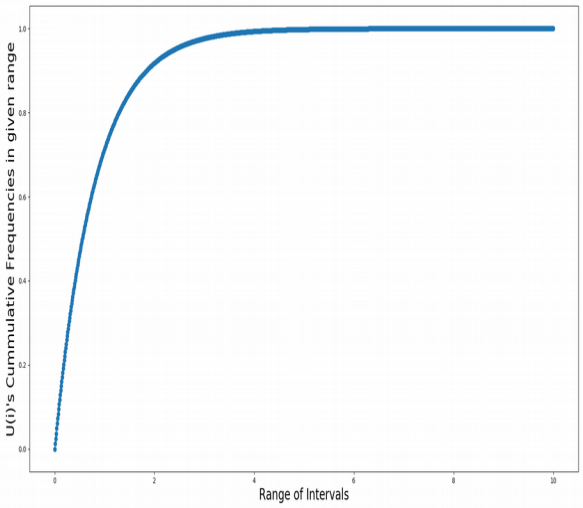




Observations : The mean and variance expected were very close to the sample case.
Expected Mean : 0.8 **Expected Variance : 0.64**
Actual Mean : 0.78984 **Actual Variance : 0.63707**

(c) for 100000 values :

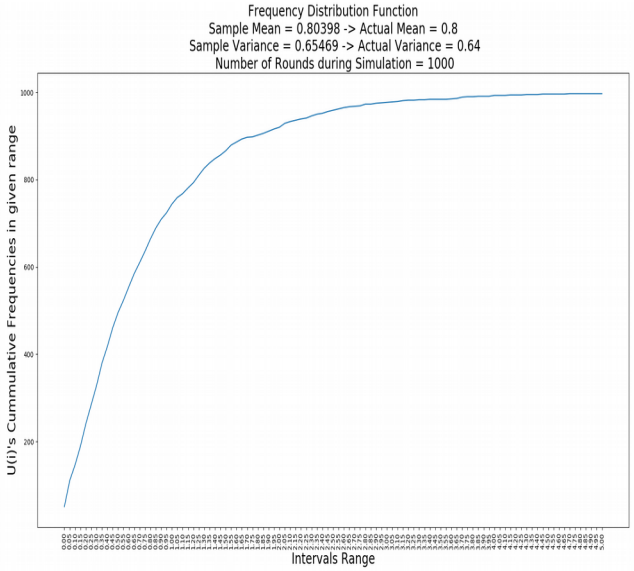


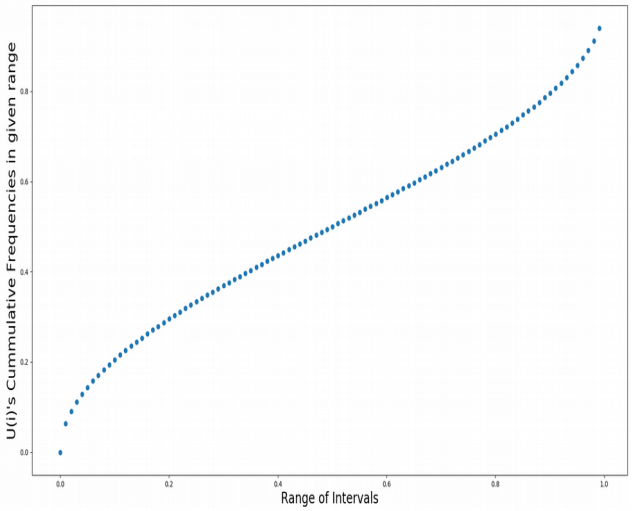


Observations : The mean and variance expected were very close to the sample case.
Expected Mean : 0.8 **Expected Variance : 0.64**
Actual Mean : 0.80305 **Actual Variance : 0.64765**

Q.3)

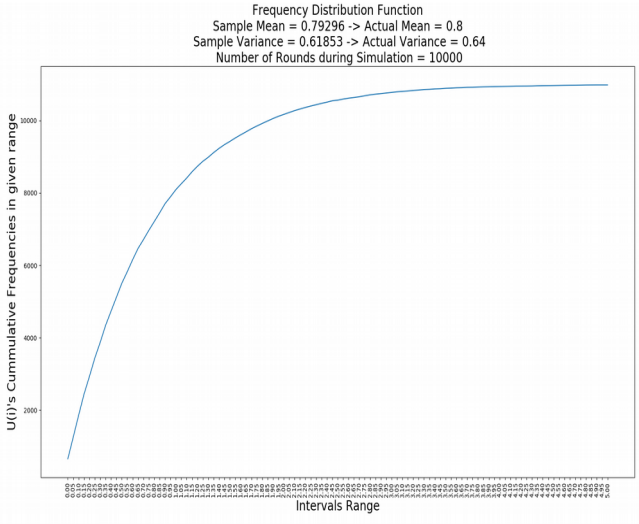
(a) for 1000 values :

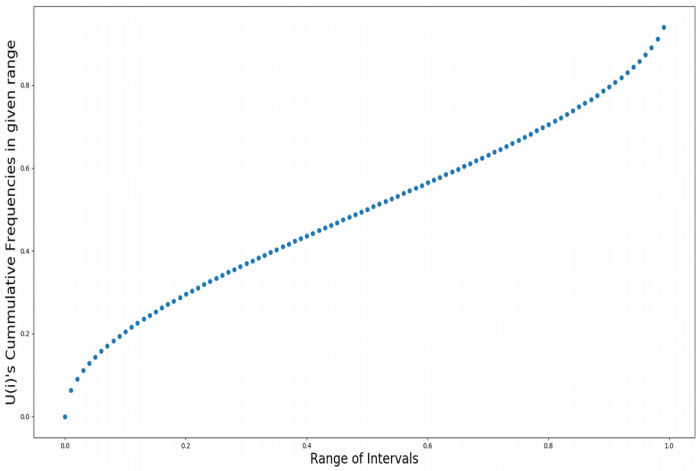




Observations : The mean and variance expected were very close to the sample case.
Expected Mean : 0.8 **Expected Variance : 0.64**
Actual Mean : 0.80398 **Actual Variance : 0.65469**

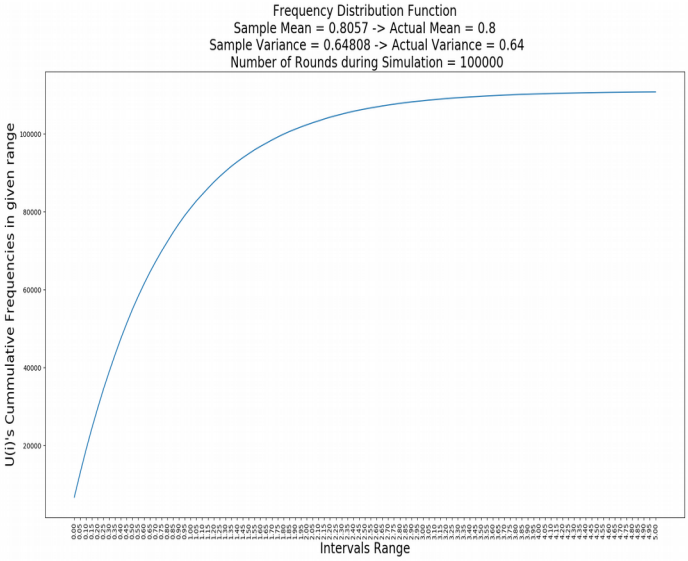
(b) for 10000 values :

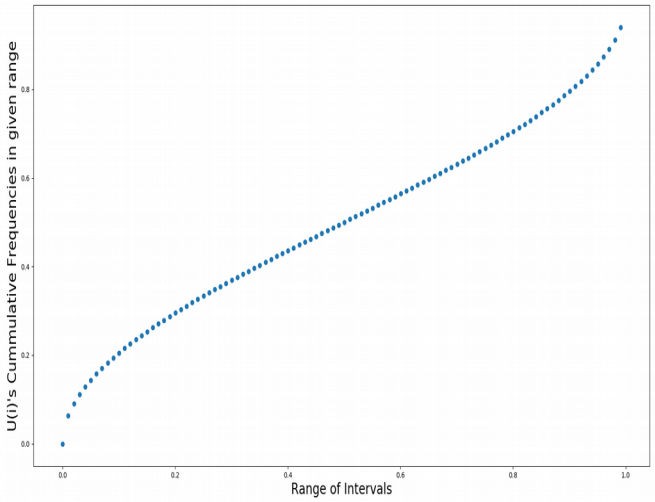




Observations : The mean and variance expected were very close to the sample case.
Expected Mean : 0.8 **Expected Variance : 0.64**
Actual Mean : 0.79296 **Actual Variance : 0.61853**

(c) <u>for 100000 values</u> :





Observations : **The mean and variance expected were very close to the sample case.**

Expected Mean : 0.8 **Expected Variance : 0.64**

Actual Mean : 0.8057 **Actual Variance : 0.64808**