**BIBD Practical 6**

**Code :**

import java.io.\*;

import java.util.\*;

class AMSA

{

public static int findCharCount(String stream,char XE,int random,int n)

{

int countOccurance=0;

for(int i=random;i<n;i++)

{

if(stream.charAt(i)==XE)

{

countOccurance++;//System.out.println(countOccurance+" "+i);

}

}

return countOccurance;

}

public static int estimateValue(int XV1,int n)

{

int ExpValue;

ExpValue=n\*(2\*XV1-1);

return ExpValue;

}

public static void main(String args[])

{

int n=15;

String stream="abcbdacdabdcaab";

int random1=3,random2=8,random3=13;

char XE1,XE2,XE3;

int XV1,XV2,XV3;

int ExpValuXE1, ExpValuXE2, ExpValuXE3;

int apprSecondMomentValue;

/\*random1=Integer.parseInt(Math.random()+"");

random2=Integer.parseInt(Math.random()+"");

random3=Integer.parseInt(Math.random()+"");\*/

XE1=stream.charAt(random1-1);

XE2=stream.charAt(random2-1);

XE3=stream.charAt(random3-1);

//System.out.println(XE1+" "+XE2+" "+XE3);

XV1=findCharCount(stream,XE1,random1-1,n);

XV2=findCharCount(stream,XE2,random2-1,n);

XV3=findCharCount(stream,XE3,random3-1,n);

System.out.println(XE1+"="+XV1+" "+XE2+"="+XV2+" "+XE3+"="+XV3);

ExpValuXE1=estimateValue(XV1,n);

ExpValuXE2=estimateValue(XV2,n);

ExpValuXE3=estimateValue(XV3,n);

System.out.println("Expected value for "+XE1+" is :: "+ExpValuXE1);

System.out.println("Expected value for "+XE2+" is :: "+ExpValuXE2);

System.out.println("Expected value for "+XE3+" is :: "+ExpValuXE3);

apprSecondMomentValue=(ExpValuXE1+ExpValuXE2+ExpValuXE3)/3;

System.out.println("Approximate Second moment value using Alon-Matias-Szegedy is :: "+apprSecondMomentValue);

}

}

**OUTPUT :**

