Maharaja Surajmal Institute of Technology

Wireless Communication

External Practical

Siddharth Agrawal
02696302717
CSE (Eve)
7th Semester
(EVEN QUESTION)

- Siddharth Agrawal
- 0269830717
- CSE (EVE)

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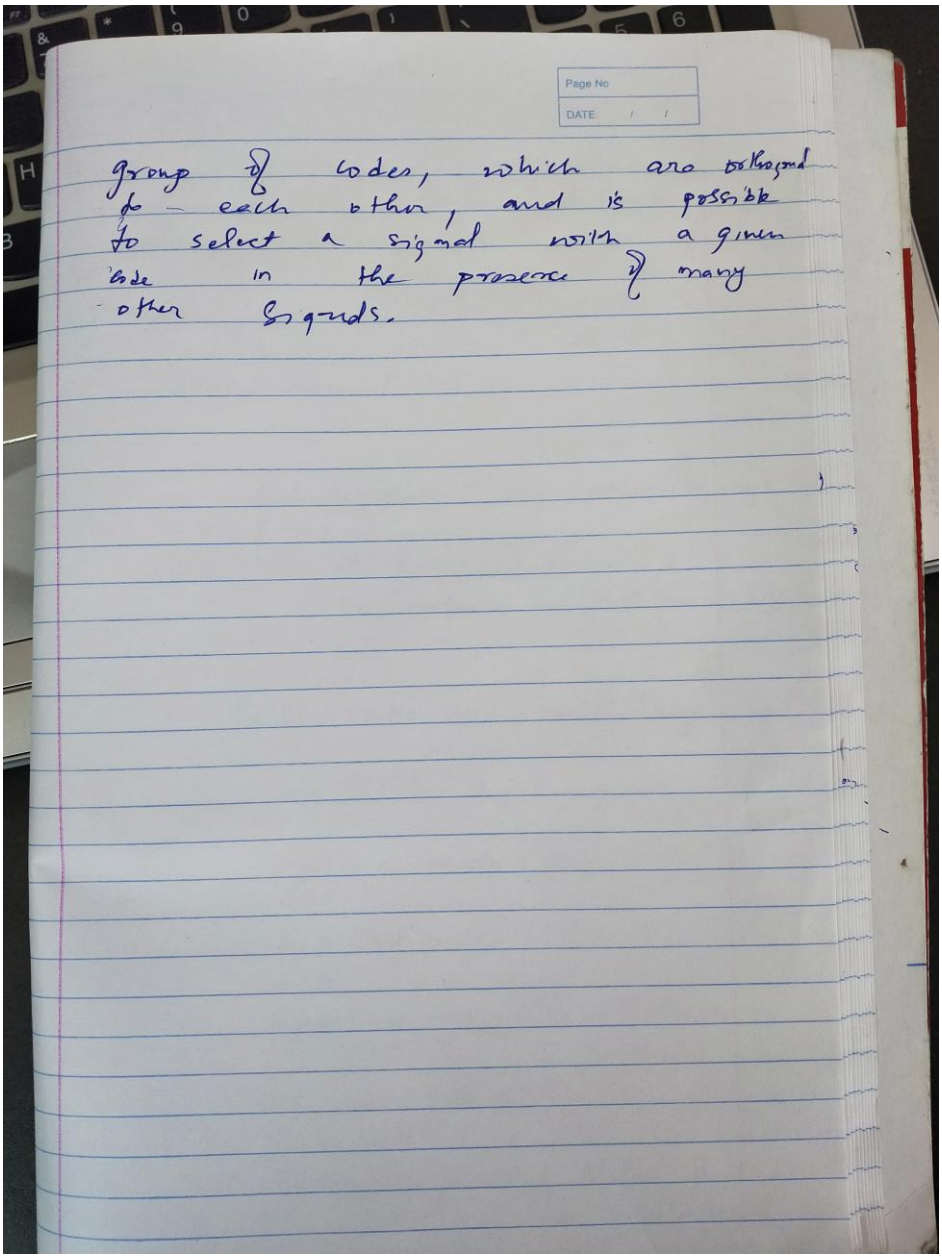
Aim: Study & implement CDMA

Theory:

Code division multiple Access is a sort of multiplexing that harrows signals to occupy a single transmission channel. It optimises the use of available bandwidth. The technology is commonly used in ultra high frequency cellar telephone systems

CDMA is very different from time and frequency multiplexing. In this system, a user has access to the whole bandwidth for entire duration. The basic principle is that different CDMA codes are used to distinguish user.

The technology used are direct sequence or mixed detection. There, a signal is generated which extends over a wide bandwidth, A code called spreading code is used to



Source Code -

```
import java.io.*;

class cdma1

{

BufferedReader br=new BufferedReader(new

InputStreamReader(System.in)); int dataa,datab;

int keya[]=new int [6]; int keyb[]=new int [6];
```

```
int key1[]=new int [6]; int key2[]=new int [6];
int key3[]=new int[6];
int ina ,inb;
public void getdata()throws IOException
{
System.out.println("A-Enter data bit");
ina=Integer.parseInt(br.readLine());
if(ina>1 ||ina<0)
System.out.println("Error enter binary");
System.out.println("B-Enter data bit");
inb=Integer.parseInt(br.readLine());
if(inb>1 ||inb<0)
System.out.println("Error enter binary");
System.out.println("A-Enter the 6bit binary key");
for(int i=0;i<6;i++)
{
 keya[i]=Integer.parseInt(br.readLine());
 if(keya[i]>1 ||keya[i]<0)
 System.out.println("Error enter binary");
}
System.out.println("B-Enter the 6 bit binary key");
for(int i=0;i<6;i++)
{
 keyb[i]=Integer.parseInt(br.readLine());
 if(keyb[i]>1 ||keyb[i]<0)
 System.out.println("Error
enter binary"); }
}
public void compute()throws
IOException {
```

```
if (ina==0)
dataa=-1;
else
dataa=1;
if(inb==0)
datab=-1;
else
datab=1;
for(int i=0;i<6;i++)
 {
 if(keya[i]==0)
 key1[i]=-1;
 else
 key1[i]=1;
 }
for(int i=0;i<6;i++)
{
 if(keyb[i]==0)
 key2[i]=-1;
else
key2[i]=1;
}
for(int i=0;i<6;i++)
{
 keya[i]=key1[i]*dataa;
 keyb[i]=key2[i]*datab;
 key3[i]=keya[i]+keyb[i];
}
for(int i=0;i<6;i++)
{
```

```
 keya[i]=key3[i]*key1[i];
 keyb[i]=key3[i]*key2[i];
}
int totala=0;
int totalb=0;
for(int i=0;i<6;i++)
{
 totala=totala+keya[i];
 totalb=totalb+keyb[i];
}
System.out.println("\nTransfor
med key a"); for(int i=0;i<6;i++)
 System.out.print(key1[i]+" ");
System.out.println("\nTransfor
med key b"); for(int i=0;i<6;i++)
 System.out.print(key2[i]+" ");
System.out.println("\nThe sum of
a is "+totala);
System.out.println("The sum of b is
"+totalb); if(totala>=0)
 System.out.println("The data entered
by A is 1"); else
 System.out.println("The data entered
by A is 0"); if(totalb>=0)
 System.out.println("The data entered
by B is 1"); else
 System.out.println("The data entered by B is 0");
}
}
public class Main
```

```
{
 public static void main(String args[])throws
IOException  {
 cdma1 c=new cdma1();
 c.getdata(); c.compute();
 }
}
```

OUTPUT -