DETECTING SLEEPING DISORDER IN FEMALE UNDER THE AGE CATEGORY BETWEEN 20-50

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ABSTRACT:

This project is about detecting sleep apnea in women who fall under the age category of 50-20. Sleep apnea is a sleeping disorder. In this disorder breathing continuously stops and starts repeatedly. Women between this age is also prone to this disorder .So women is identified seperately from the given data set. The severe of the sleep apnea is identified with the ahi level and with their ahi level in consideration the effect of the same is found out.

Key words ,sleep apnea ,women, ahi level

I. INTRODUCTION:

The safety of the data is a most needed one and when it comes to medical dataset the privacy and security of the data is more important . It should be protected from data hackers . For this purpose the data is encrypted. Encryption means the process of converting information or data into a code, especially to prevent unauthorized access.So homomorphic encryption technique is used here for the data to be converted from decrypted form to encrypted form and the result is found out with the encrypted data .Two homomorphic encryption namely gortis and carmichal technique is used and the time of execution taken for the two technique is noted to find out the effective technique. And finally with result visualization is done using data wrapper tool . Data wrapper tool is user friendly and a best charting tool

II. OBJECTIVES

To detect sleeping disorder in women under age category of 20 - 50. This project is undertaken to learn more about sleep apnea .Sleep apnea occurs while in sleep where breathing starts and stops continuosly. Symptoms include snoring loudly and feeling tired even after a full night's sleep. Risk factors include age and obesity. Here the data set is a medical dataset with nearly 5000 attributes which contains Id, hours of sleep, age, weight, height (feet), gender, Total hypopnea events,Total Apnea events, and calories. And the main aim of this objective is to find their ahi level and see whether it is mild , moderate or wild and their effects thereof.

III. RELATED WORKS:

Sleep apnea (SA) event occurs because of restraint in normal respiration. It requires accurate diagnosis, because of neurotic and cardiac disorders. The Apnea Hypopnea Index (AHI) is taken into account to be the foremost relevant metric to diagnose the existence and severity of the disorder, indicating the amount of apnea events per hour of sleep.

This disorder is significantly prevalent with a worldwide estimation of 200 million people . Four percent of adult men and two percent of adult women are victims of this disorder making it more common in males than in women . However, among the apnea patients, 93% of middle-aged women and 82% of middle-aged men with moderate to severe sleep apnea were undiagnosedThe data here will be encrypted and the time taken to do the same is noted and then the same data is decrypted and the time taken to do the same result is taken into account and helps in protecting sensitive data from outsourced . The main reason to use the two encryption schemes is to find the time taken to do on encrypted data .The encryption is done here to maintain the data from threat because the privacy and security of the data is of an utmost importance.

Sleep apnea (SA) event occurs because of restraint in normal respiration. It requires accurate diagnosis, because of neurotic and cardiac disordersSleep apnea is classified into two types. The first type is Obstructive apnea (OSA), which is usually caused by a collapse of the upper respiratory airway. The other is Central apnea (CSA), which is caused by inhibited respiratory drive, since the brain fails to appropriately control breathing during sleep. Out of the two sleep apnea types, OSA is more common than CSA.The Apnea Hypopnea Index (AHI) is taken into account to be the foremost relevant metric to diagnose the existence and severity of the disorder, indicating the amount of apnea events per hour of sleep. This disorder is significantly prevalent with a worldwide estimation of 200 million people .

The privacy concerns areoften satisfactorily addressed if users encrypt the info they send to the cloud. If the encryption scheme is homomorphic, the cloud can still perform meaningful computations on the info , though it's encrypted.

Homomorphic encryption may be a sort of encryption which allows specific sorts of computations to be administered on ciphertexts and generate an encrypted result which, when decrypted, matches the results of operations performed on the plaintexts**.** this is often a desirable feature in modern communication system architectures.

IV. METHODOLOGY

The most important and used techniques are

- Gortis
- Carmichal

The dataset with all the records that is taken from a monitoring device that records all the activities during sleeping are connected to netbeans java IDE 8.2. Encryption is the process of translating data into a secret format so that only authorized parties can understand the information. Plain text, or readable data that is not encrypted, is converted into cipher text, or scrambled data that is unreadable. Encryption takes readable data and alters it so it appears random. Encryption Provides Security for Data at All Times. Generally, data is most vulnerable when it is being moved from one location to another. Encryption works during data transport or at rest, making it an ideal solution no matter where data is stored or how it is used .

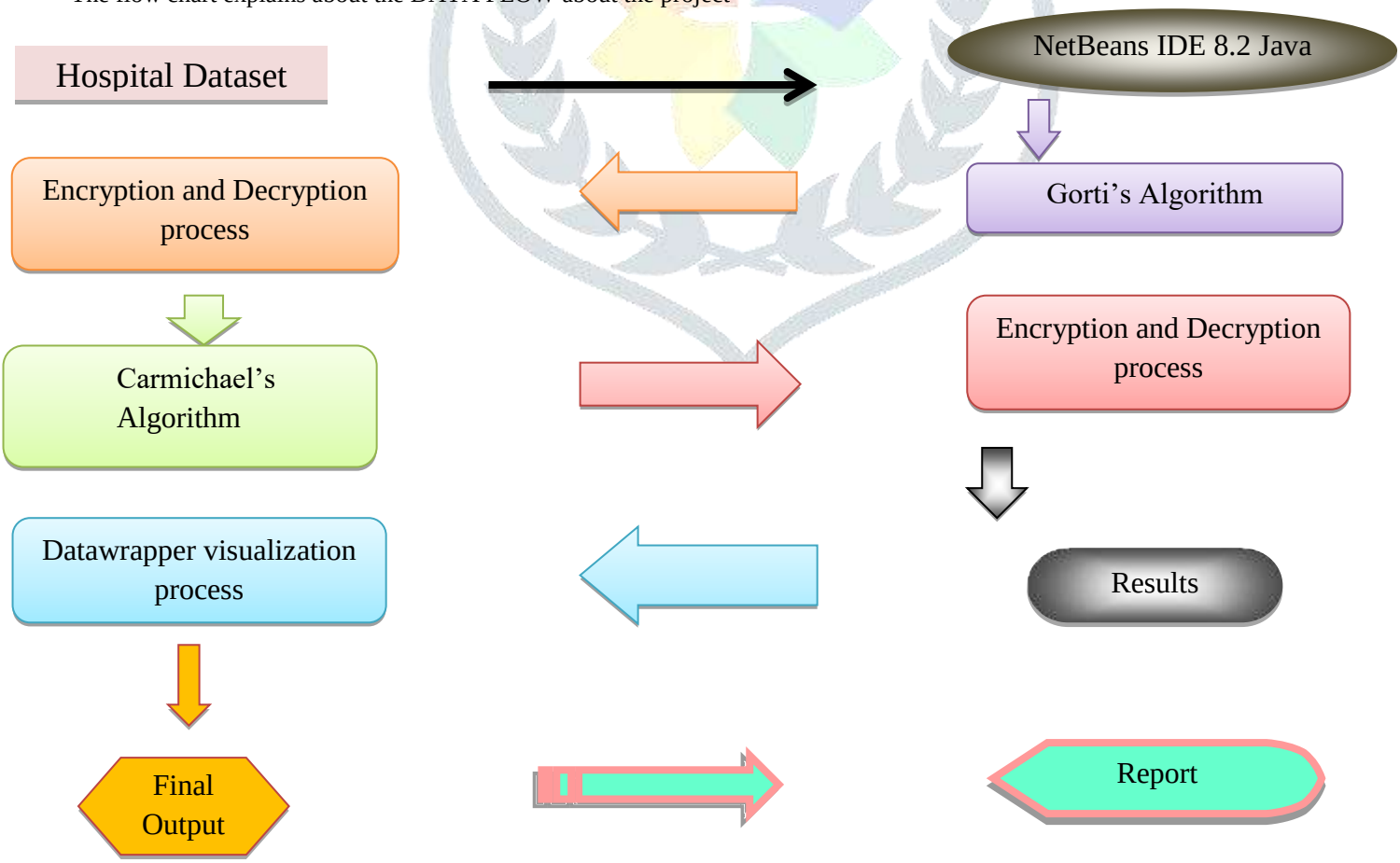
The main reason for using homomorphic encryption technique is to encrypt the data so is not easily stolen by others .Gortis algorithm is a security algorithm this encrypts the data and finds the result of the same ,the time taken for gorti algorithm to encrypt the data and find the result with that encrypted data is taken or noted down to find which among the following two is more effective and saves time and the same data is decrypted using the the same algorithm. The carmichal algorithm is also a security algorithm,. the data in order to be protected is encrypted using carmichal algorithm all the attributes are called and encrypted. It encrypts the data and works with it and gives the result. The time taken to encrypt the data and find the result is noted and the same data is decrypted and the result is saved.

It involves:

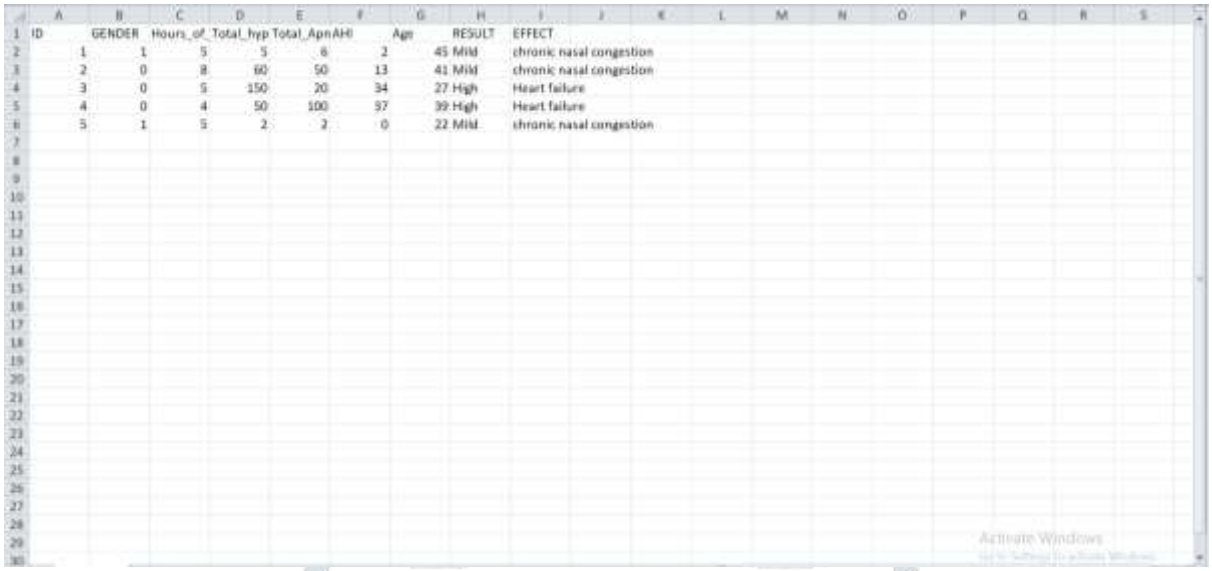
1. Connecting data base with java script
2. Using two algorihms
3. Calling the attributes using function encryption_process for both algorithms
4. The location to save the file result is given
5. The same data which was encrypted is decrypted using decryption_process

DATA FLOW DIAGRAM:

The flow chart explains about the DATA FLOW about the project



V. RESULT



ID	GENDER	Hours_of	Total_hyp	Total_Apn	AHI	Age	RESULT	EFFECT
1	1	5	5	6	2	45	Mild	chronic nasal congestion
2	0	8	60	50	13	41	Mild	chronic nasal congestion
3	0	5	150	20	34	27	High	Heart failure
4	0	4	50	100	37	39	High	Heart failure
5	1	5	2	2	0	22	Mild	chronic nasal congestion

Figure 1:-

From this above figure the gortis is used for encryption and the result is found . The 1 and 0 in Gender indicates men and women respectively. The Age limit is taken between 20-50. With the AHI level(counted by adding total hypopnea events plus total apnea events divided by hours of sleep multiplied by one.) the Result is found and their effects considerly. The AHI level below 15 is mild , below 30 is moderate and above 30 is high.

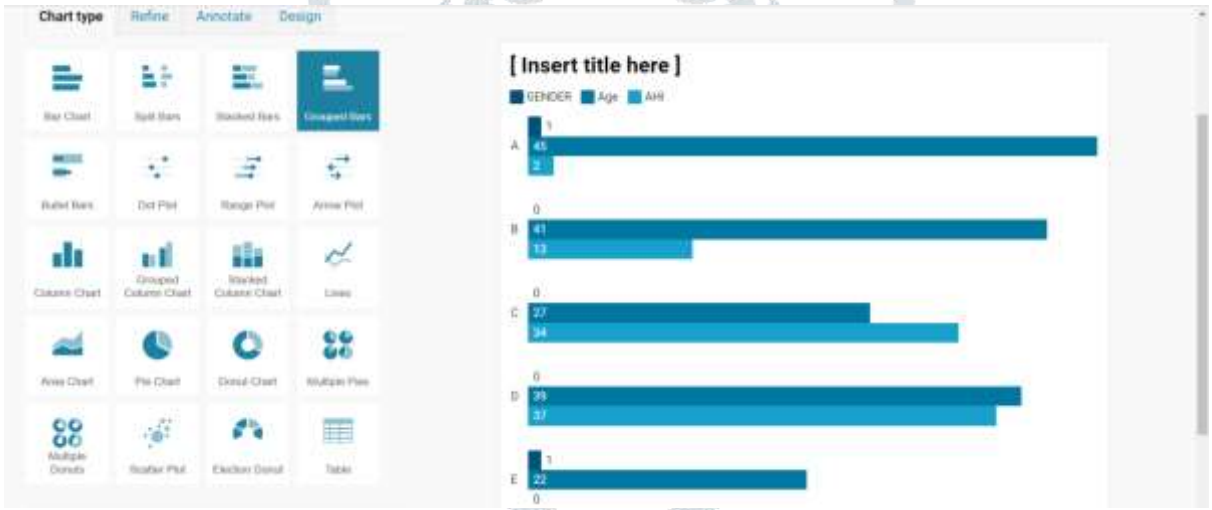


Figure 2:-

The result is plotted using data wrapper tool.The age , gender , AHI level is taken for plotted. The type of chart used here to represent this is grouped bars

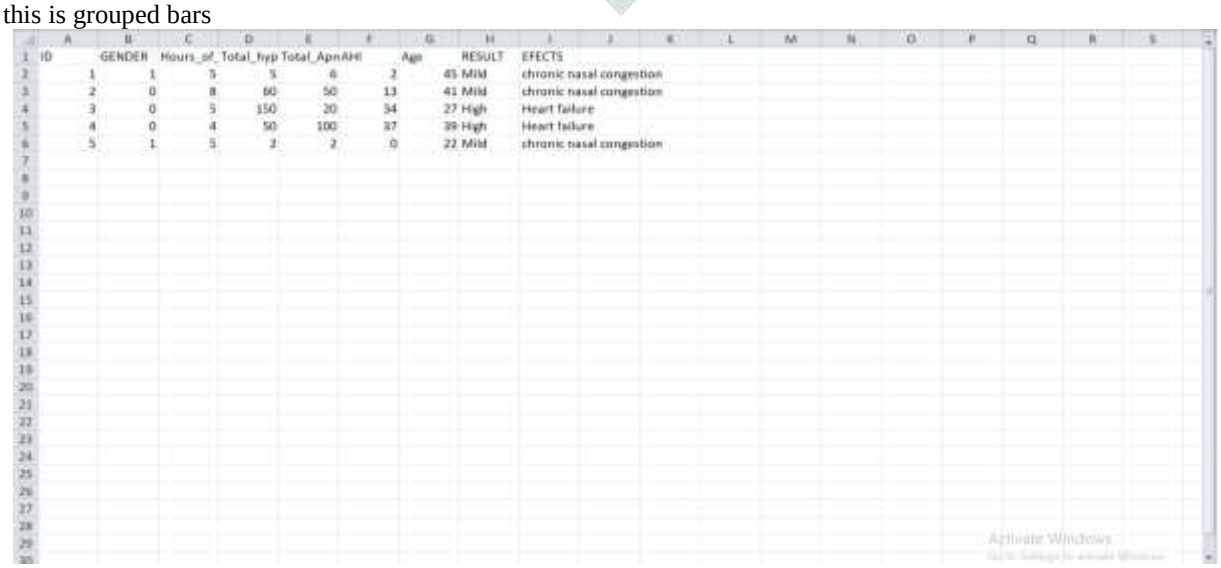


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Figure 3 :-

The carmi's encryption and decryption process is used here and the result in accordance to their their AHI level is found and their effects thereof

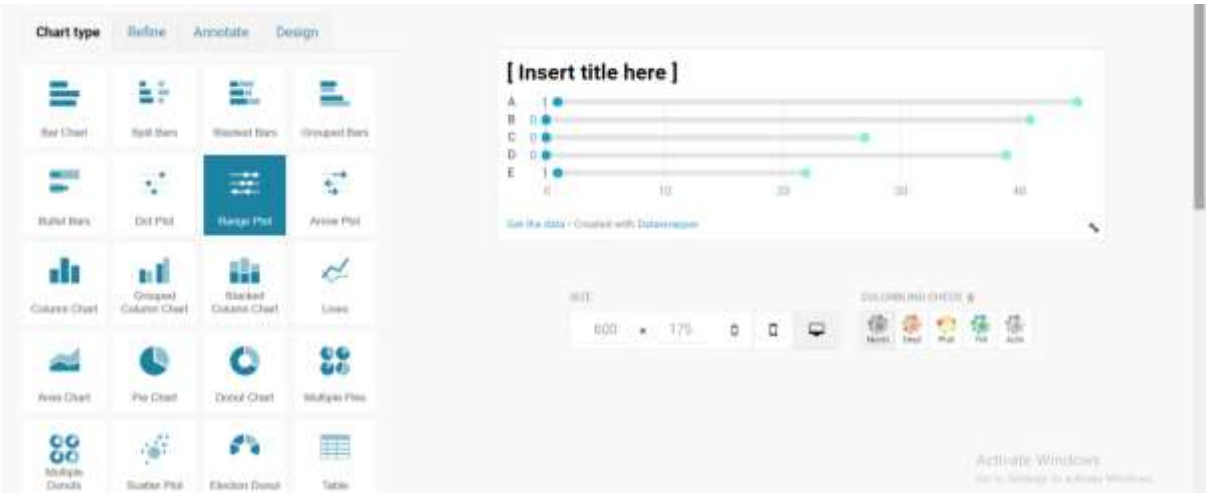

Figure 4:-

In this the obtained carmis result is taken to the data wrapper tool and attributes like age , AHI, and gender are used to plot using range plot chart.

VI. CONCLUSION AND FUTHER WORK

In this paper the data is encrypted and two different algorithms is used but the results of the algorithms is the same before and after encryption .Among the two gortis is found to be effective because the time taken for gortis is lesser than that of carmichal algorithm .For women under 20-50 the sleep apnea is found to be less in comparison to men and the symptoms to find is also difficult in women . Women are prone to depression , stroke , chronic nasal congestion and insomania .To find out sleep apnea in general among women is difficult so regular checking of their body helps them to find if there exsists sleep apnea and theie treatments thereof

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