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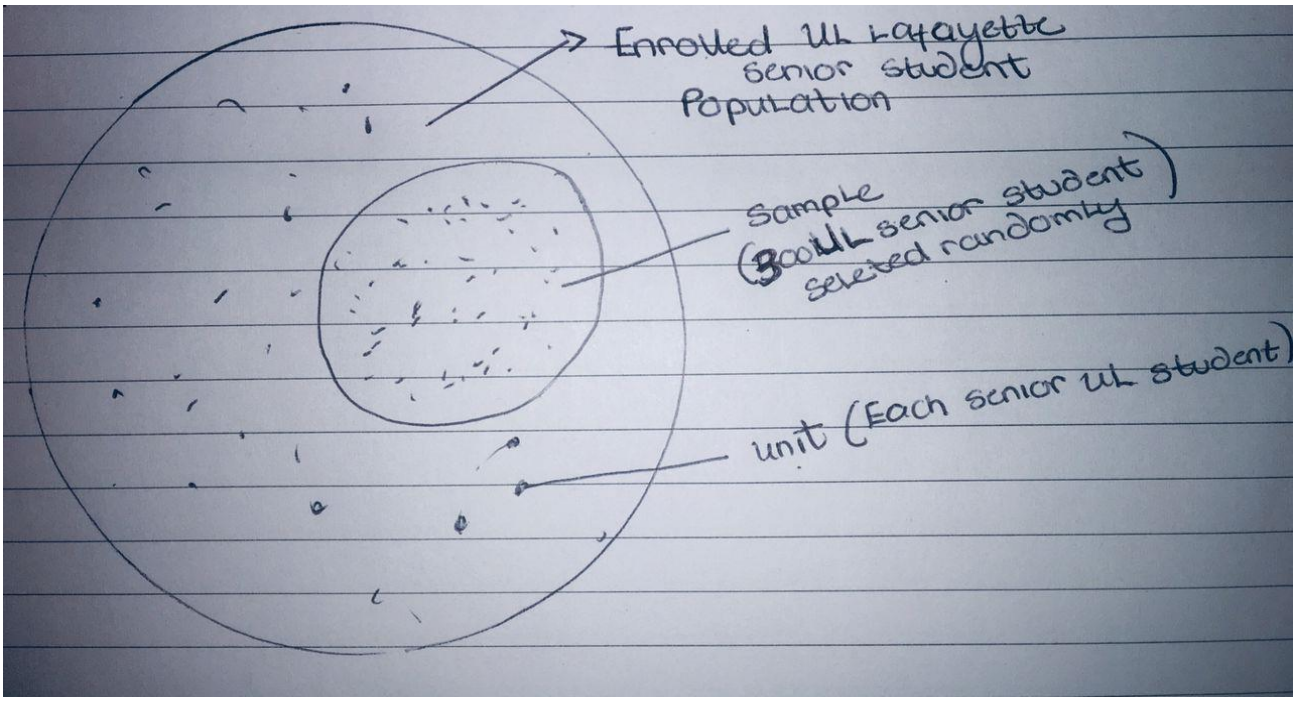

1a. Enrolled UL Lafayette students who are classified as Seniors (at the time of the survey) are the sampled population in this study. They are the collection of all the units that could be in the sample.

1b. Age of the students (300) selected randomly from Enrolled UL Lafayette Senior students.

We will be looking to compute the age of senior Ul Lafayette students. To do this, 300 students were selected from the Enrolled UL Lafayette senior student. The age (Variable) of each individual student from the Sampled Population (300 students) will be recorded (VALUE).

For Example

Age Range (Years)	Number of Students
15-20	60
20-25	160
25-30	80
Total	**300**

To compute the statistics for this sample we will be looking at computing figures from the values in the table above that we can use to make statements about the **randomly** selected samples (300 students). Values like the mean, mode, median, standard deviation of this distribution, etc.

For the Parameter, we will be looking at the numerical characteristics of the entire students Enrolled in UL Lafayette who are classified as senior students (Target Population). From our selected sample for example we observed that 160 students fell in between the age range of 20-25 years. We can make a statement that the probability of selecting a senior student that falls into the age range of 20-25 is around 50%.

N:B We are making this inference because the sampled population were selected at random.

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1c. Name of the US state or Country where each 300 students selected at random from the Enrolled UL Lafayette senior students was born.

We will be looking at the place of birth of the selected samples. Each individual Values for this categorical variable (State/County will be recorded).

For Example

Place of Birth	**Number of students**
United States	180
Nigeria	60
China	10
India	15
Japan	7
others	27
Total	**300**

To compute the statistics of the selected sample, we will be looking at computed figures from the values in the table above that we can use to make statements about the **randomly** selected samples (300 students). Statistics like the Mode.

For the Parameter, we will be looking at the numerical characteristics of the entire students Enrolled in UL Lafayette who are classified as senior students (Target Population). From our selected sample for example we observed that 180 students are from the United States. We can make a statement that the probability of selecting a senior student in UL Lafayette that was born in the United states is greater 50%.

N:B We are making this inference because the sampled population were selected at random.

1d. GPA of 300 students selected at random from the Enrolled UL Lafayette senior students was recorded.

We will create a range using the students GPA

For Example

GPA Range	**Number of students**
0 – 1	10
1.1 - 2.0	40
2.1 – 3.0	100
3.1 – 4.0	150

For this variable mean and mode are some of the statistics we can use to summarize the distribution of the values. The mean for example, will be a single value that will give us an overview of the GPA of all selected students.

For the Parameter, we will be looking at the numerical characteristics of the entire students Enrolled in UL Lafayette who are classified as senior students (Target Population). From our randomly selected sample, for example we observed that 150 student's GPA fall within 3.1 – 4.0. We can make a statement that higher percentage of senior students at UL Lafayette have either a second class upper or a First class.

N:B We are making this inference because the sampled population were selected at random.

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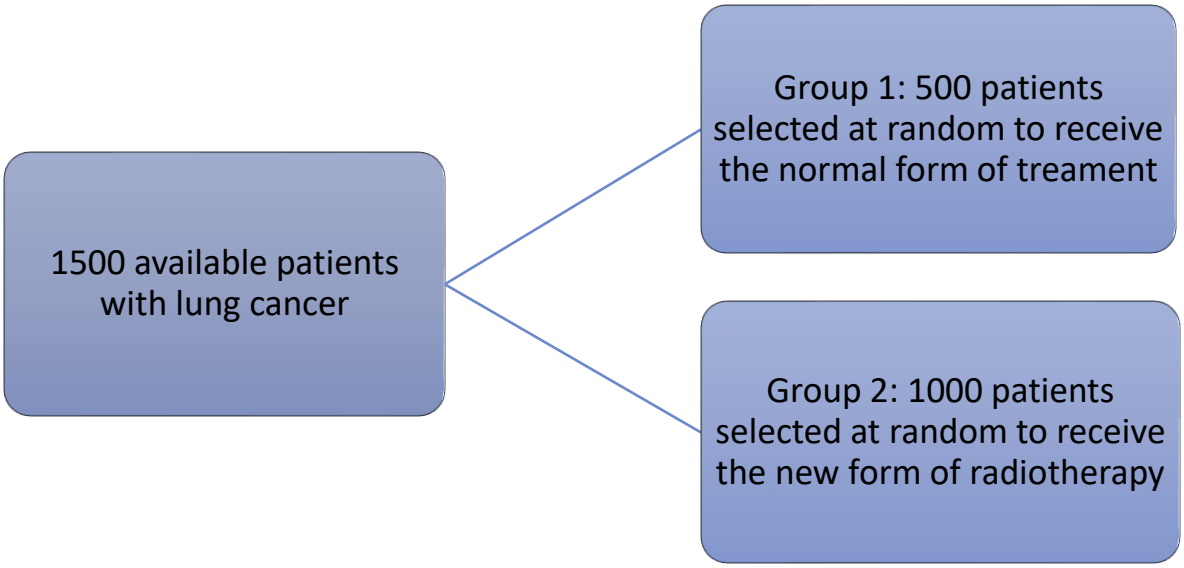
2a. The unit for this experiment is a Lung Cancer patient.

2b. The Response variable which is the expected result of the experiment is the **Survival time** (difference between the time(date) of the experiment and the time of death).

2c. The sampled population is the group of 1500 lung cancer patients that agreed to participate in the study. We must understand that we cannot categorically say that the patients in the sampled population also represents the Targeted population (Patients with lung cancer).

2d. To compute the efficacy of the radiotherapy treatment. We will determine the response variable of all units for each form of radiotherapy. 1500 Lung cancer patients agreed to participate in the study and was shared into 2 groups;



RANDOMLY GROUPED PATIENTS FOR THE COMPARATIVE EXPERIMENT.

Response variable (Survival time in days) **R** = $\mathbf{T_1}$ - $\mathbf{T_2}$. Where $\mathbf{T_1}$ is the date of treatment and $\mathbf{T_2}$ is the date of death

Let's call the response variable values for all 500 patients that agreed to participate in the normal form of radiotherapy $\mathbf{R_1}$ and the response variable values of the 1000 patients that agreed to participate in the new form of radiotherapy $\mathbf{R_2}$. We can now use the values of $\mathbf{R_1}$ and $\mathbf{R_2}$ to calculate the statistic that will summarize the efficacy of this radiotherapy treatment.

The mean $\bar{\mathbf{R}}_1$ and $\bar{\mathbf{R}}_2$ will give us a single value we can use to compare both method because it represents the Response variable for each form of radiotherapy treatment.

2e. To determine the parameter corresponding to our statistics, we will have to consider the enter population (1500 patients) for each form of radiotherapy. Population mean survival time $\bar{\mathbf{u}}_1$ and $\bar{\mathbf{u}}_2$ will be our corresponding parameter.

For the normal radiotherapy treatment, $\bar{\mathbf{u}}_1$ is the average survival time we would have observed if all 1500 lungs cancer patients had been treated with the normal radiotherapy treatment.

For the new radiotherapy treatment, $\bar{\mathbf{u}}_2$ is the average survival time we would have observed if all 1500 lungs cancer patients had been treated with the new radiotherapy treatment.