The SMU student directory contains 94 pages of student listings. Each page has 115 lines of text and 4 columns of names. The number of students listed on each page can vary, since different students have a different number of lines.

**Examples of sample listings in SMU directory**

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| **ABABTAIN** Eman Abdulrahman A |
| Masters……………………xxx/xxx-xxxx |
| Lyle SOFT-MS |
| 9030 Southwestern Blvd Apt 3231 |
| Dallas TX 75214-1542 |
| **ABALOS LIRA** Jose Pedro |
| Masters……………………xxx/xxx-xxxx |
| Guildhall DGLVLD-MIT |
| 6400 Ohio Dr Apt 321 Plano TX 75024-2659 |
| Los Ginkos 13425 Santiago, RM 7591532 |
| CHILE |
| **ABBAH** Ucha Chinyere |
| First Year…………………..xxx/xxx-xxxx |
| Dedman ENGUN-PMJ |
| PO Box 751347 Dallas TX 75275-1347 |
| 5632 Arlington Park Dr |
| Dallas TX 75235-6202 |
| **ABBAS** Sabrina First Year xxx/xxx-xxxx |
| Dedman CRCOMP-PMJ |
| PO Box 751378 Dallas TX75275-1347 |
| 1700 Windemere Dr Plano TX 75093-2844 |

1 page, 4 columns and 115 lines

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115 lines

Consider the following sampling plans for selecting a sample of SMU students listed in the directory. ***For each, note whether it is a probability design or not, and explain why***.

1. You use a random number table to select a simple random sample (SRS) of 10 of the 94 pages. Then you select all the students on the selected pages into your sample. Is this a probability sample? Why?

Yes, we can calculate the probability of selection for the chosen or not chosen students from our sampling frame. 10/94. Cluster design is probability technique. Cluster because we are selecting our units from groups (pages)

Weight 1/(10/94) or 94/10

Do we need to add cluster? Yes. This data is not aggregated.

1. For every one of the 94 pages in the directory, you select a SRS of 2 of the 4 columns. Then you select at random 1 of the 115 lines from each of those 2 columns. Then you select the student to whom that line pertains. Is this a probability sample? Why?

Yes, we can calculate the probabilities. This is a complex design, involving stratification plus two stage. Stratification is done on the page basis, then there is a two stage design.

Stratification because we’re selecting from each page

2/4\*ni/115

Stratification + two stages of sampling = complex design

Stratification + clustering = complex design

1. You select a SRS of 40 of the 94 pages. Then you select the first and last students listed on each selected page. Is this a probability sample? Why?

No, there is no randomization choosing first and last from the selected page. The first part is probability, second is not, so not a probability sample.