The steps of the method:

- Generate data (x) have student distribution.
- Arrange the data in ascending order.
- We calculate $s_j = j/n,\ j = \lceil na \rceil, \ldots, \lfloor nb \rfloor,\ a < b$ are fixed constants taken from the interval (0,1).
  In my program I take $a = 0.0001, b = 0.4$ where do we get the best results. Then number value of j it should be $nn = floor(n * b) - ceil(n * a) + 1$ and n sample size that you Generate it. In this case we used loop as follows:

  ```
  for jj=1:nn;
  s1(jj)=ceil(n*a)+(jj-1);
  end
  ```

  Finally we find s_j as $s = s1/n$
- Let Q_n be the empirical quantile function defined as

  $$Q_n(s) = X_{k,n} \qquad \text{if} \quad \frac{k-1}{n} < s \leq \frac{k}{n}, \quad k = 1, 2, \ldots, n.$$

  I find it as the following code:

  $for j = 1 : nn$
  $for ir = 1 : n$
  $if(s(j)) > ((n - ir)/n) and(s(j)) \leq ((n + 1 - ir)/n);$
  $Qt(j) = Qn(ir);$
  end
  end
  end

- Then $y = log(Qt)$
- Our estimater is $\hat{\kappa} = e_1'(X'WX)^{-1}X'Wy$, Where X is matrix as $[x_1\ \ x_0\ \ x_2\ \ x_3]$ where x_0 is vector all values are one, $x_1 = -(\log(s))$, $x_2 = (2 * \cos(2 * pi * s))$, $x_3 = (2 * cos(4 * pi * s))$, $W = s$ and $e = [1\ \ 0\ \ 0\ \ 0]$.