

Alternative Selection Algorithm (Floyd)

```
/** Random sequence of K distinct integers
 * from 0..N-1, 0<=K<=N. */
IntList selectInts(int N, int K, Random R)
{
    IntList S = new IntList();

    for (int i = N-K; i < N; i += 1) {
        // All values in S are < i
        int s = R.randint(i+1); // 0 <= s <= i < N
        if (s == S.get(j) for some j)
            // Insert value i (which can't be there
            // yet) after the s (i.e., at a random
            // place other than the front)
            S.add (j+1, i);
        else
            // Insert random value s at front
            S.add (0, s);
    }
    return S;
}
```

Example

<i>i</i>	<i>s</i>	<i>S</i>
5	4	[4]
6	2	[2, 4]
7	5	[5, 2, 4]
8	5	[5, 8, 2, 4]
9	4	[5, 8, 2, 4, 9]

selectRandomIntegers (10, 5, R)