

CS 305
Design and Analysis of Algorithms

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Today's Topics

- Questions/Comments?
- Reminder of:
 - Random Variables
 - Examples of R.V.s
- Examples of Expected Value of a R.V.
- Definition of Expected Value (aka Expectation or mean)
- Linearity of Expectation
- Hiring Problem
- Indicator Random Variables

PARTITION (LIST, START, END)

1a. RANDIDX \leftarrow RAND(START, END)

1b. SWAP(LIST, END, RANDIDX)

1c. PIVOT \leftarrow END

2. LASTLHS \leftarrow START - 1

3. FIRSTUNK \leftarrow START

4. WHILE FIRSTUNK < END

5. IF LIST[FIRSTUNK] < LIST[PIVOT]

6. LASTLHS++

7. SWAP(LIST, LASTLHS, FIRSTUNK)

8. FIRSTUNK++

9. SWAP(LIST, PIVOT, LASTLHS + 1)

10. RETURN LASTLHS + 1

// PUT PIVOT ELEMENT
// IN CORRECT PLACE

QUICKSORT (LIST, START, END)

1. IF START < END

2. PIVOT \leftarrow PARTITION (LIST, START, END)

3. QUICKSORT (LIST, START, PIVOT - 1)

4. QUICKSORT (LIST, PIVOT + 1, END)