Pseudocode for password generation

1. Initialise variables:
   1. Set CAPITALS list to [“A”, “B”, “C”, “D”, “E”]
   2. Set LOWERS list to [“a”, “b”, “c”, “d”, “e”]
   3. Set NUMBERS list to [“1”, “2”, “3”, “4”, “5”]
   4. Set SPECIALS list to [“$”, “&”, “%”]
   5. Set TYPES list to [capitals, lowers, numbers, specials]
   6. Take PASSWORD LENGTH.
   7. Take bool for verbose.
2. If the PASSWORD LENGTH is less than 4 GOTO 8
3. Define PASSWORD LIST to store passwords in list format.
4. Define PREFIX as empty, REMAINING LENGTH as PASSWORD LENGTH, and COUNTS as array of Four 0s
5. If remaining length not 0 GOTO step 6
   1. If first character in PREFIX is not from CAPITAL or SMALL set, GOTO 6.4.4.
   2. If any COUNTS is 0, GOTO 6.4.4.
   3. If there are more than two CAPITALS or SPECIALS, GOTO 6.4.4.
   4. Append PASSWORD LIST with PREFIX
   5. GOTO 6.4.4.
6. If index is greater than number of types, GOTO 7
   1. Create a copy of counts array.
   2. Increment the relevant count for the selected type.
   3. Set type to the offset of types by index.
   4. If index2 is greater than the number of characters in type, GOTO 6
      1. Append prefix with a character by offsetting the type by index2.
      2. Increment index2 by one.
      3. Negate one from remaining length.
      4. Goto 5
7. GOTO 9
8. Throw value error “Cannot satisfy requirements with less than 4 characters”.
9. Exit Program