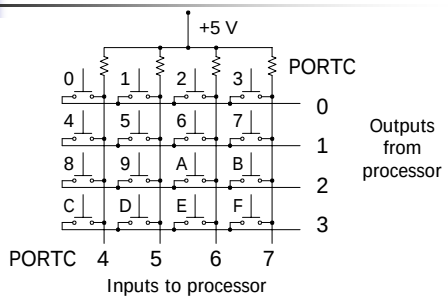
Connecting Switches – Briefcase

- Input ports available
  - PORTA – 5 bits
  - PORTC – 8 bits
  - PORTD – 5 bits
  - PORTE – 8 bits

Keypad Matrix – Briefcase

- Switches across the rows and columns
- Rows connected as outputs (from processor)
- Pull columns high, connect to input (to processor)
- "Scan" by pulling each row low sequentially – look for low in column

Matrix Keypad – Briefcase



Scanning Sequence – Briefcase

- Set up ddrc for bits [0:3] output, bits [4:7] input (store 0x0F to ddrc)
- Set portc[0] to zero
- Check portc[4:7], if any zeroes, found the row/column
- If no zeros, set portc[1] to zero and portc[0] back to one
- Check portc[4:7], if any zeroes, found row/column
- Repeat until checked all 4 rows

Output Ports – Briefcase

- Output ports available
  - PORTA – 5 bits
  - PORTB – 8 bits
  - PORTC – 8 bits
  - PORTD – 4 bits