The control bit string has 12 bits
The first 4 are for the wheels (Bit mask: 0b111100000000)
The second 4 are for the arms   (Bit mask: 0b000011110000)
The last 4 are for the drums   (Bit mask: 0b000000001111)

```
[ Wheels     Arms      Drums ]
[ 0 0 0 0    0 0 0 0    0 0 0 0 ]
[ A B C D    E F G H    I J K L ]
```

A) Drive forward bit. All wheel motors forward.
B) Drive reverse bit. All wheel motors backwards.
C) Turn left bit. Left motors back, Right motors forward.
D) Turn right bit. Right motors back. Left motors forward.

E) Front arm up bit. Raise the front arm.
F) Front arm down bit. Lower the front arm.
G) Back arm up bit. Raise the back arm.
H) Back arm down bit. Lower the back arm.

I) Front drum dig bit. Rotate front drums in the digging direction
J) Front drum dump bit. Rotate front drums in the dumping direction
K) Back drum dig bit. Rotate back drums in the digging direction
L) Back drum dump bit. Rotate back drums in the dumping direction

If a bit is set to 1, the action is to be taken.
The entire bit string is published as a single integer.

If a contradictory combination of bits is sent, then no action is taken for that node.
For example, if the wheel node receives 1100, it will take no action. If the other two nodes
received valid data, they will behave as intended.

Examples:
Wheel bits: (Forward) (Back) (Left) (Right)
    Ex1: Move Forward - 1000
    Ex2: Move Left   - 0010

Arms bits: (Front Arm Up) (Front Arm Down) (Back Arm Up) (Back Arm Down)
    Ex1: Front arm up - 1000
    Ex2: Both arms up - 1010

Drum bits: (Front Dig) (Front Dump) (Back Dig) (Back Dump)
    Ex1: Both Dig - 1010
    Ex2: Both Dump - 0101

Creation of the string

Begin by looking for directional inputs and or-ing in the necessary wheel bits.
Ex: If forward is being pressed, or in 0b1000.

Once done looking for directional input, shift 4 bits to the left and begin looking for arm commands and or in the necessary bits. Ex: If right trigger is being pressed, or in 0b0100.

After looking for arm input, shift 4 bits to the left again and begin looking for drum commands. Ex: If the dump back drum button is being pressed, or in 0b0001.

Upon completion of the above steps, the bit string is ready to be published and parsed by the motor nodes.

Optional practice

What will occur with the following commands?

1) 0100 0101 1010
2) 1111 1111 0101
3) 0010 0010 0000

Answers

1) **Wheels**: Reverse. **Arms**: Both arms down. **Drums**: Both drums dig.
2) **Wheels**: No action. **Arms**: No action. **Drums**: Both drums dump.
3) **Wheels**: Turn left. **Arms**: Back arm up. **Drums**: No action.