How to Hyperloop

This document contains an example of a program that our robot could use to determine which hyperloop number to assign to each person based on the number that person arrives with. In this example, we will be converting between base 3 and base 11, but when you write your code, you will need to convert between base 2 and base 16.

Our code starts off by declaring a new variable called hyperloop which will store the hyperloop number that we want to send the passenger to.

```
// Example: base 3 to base 11

let hyperloop = "0";

let personNumber = PersonNumber();
```

Our robot has a sensor that detects the number allocated to the next incoming passenger. We can retrieve the value of this sensor by calling the PersonNumber() function and assigning it to a variable. This function has already been defined for us.

We then perform a series of checks using IF and ELSE IF statements. For every possible person number that we expect to see, we check if the current value of the variable is equal to that expected value. If a particular statement is true, we can allocate the correct number to the hyperloop variable and skip the rest of the ELSE IF statements. If that particular statement isn't true, we then proceed to the next ELSE IF statement.

```
// A simple hard-coded mapping of trinary numbers to equivalent base
eleven numbers

if (personNumber == "0") { hyperloop = "0"; }

else if (personNumber == "1") { hyperloop = "1"; }

else if (personNumber == "2") { hyperloop = "2"; }

else if (personNumber == "10") { hyperloop = "3"; }

else if (personNumber == "11") { hyperloop = "4"; }

else if (personNumber == "12") { hyperloop = "5"; }

else if (personNumber == "20") { hyperloop = "6"; }

else if (personNumber == "21") { hyperloop = "7"; }

else if (personNumber == "22") { hyperloop = "8"; }

else if (personNumber == "100") { hyperloop = "9"; }
```

```
else if (personNumber == "101") { hyperloop = "A"; }
```

Once we have skipped or completed every ELSE IF statement, our final line of code calls the function MovePersonToHyperloop(), passing in the value of the hyperloop variable as an input. This function has already been declared and instructs the robot to tell the first passenger in line to move to the particular hyperloop capsule indicated by the hyperloop variable.

```
MovePersonToHyperloop(hyperloop);
```

The robot will automatically call the code that we write for each new person who arrives.

That's it! You can use this code as a base for your own answer; however, you will need to change the number systems used from base 3 and 11 to base 2 and 16.