**A. Parking Space Problem**

**Problem:** An individual has 4 parking spaces outside of his/her apartment

complex. This individual wants to know when two adjacent spaces are open as

he/she does not want anyone to park next to their car. (Normally, this person parks

at the end of a large parking lot to avoid any scrapes or scratches). This individual

proceeds to set up pressure switches in the parking spaces and has a logic indicator

in their apartment building. They want one logic indicator to activate if two

adjacent spaces become open, another logic indicator to activate if three adjacent

spaces become open, a third if all spaces are open and a fourth if one space is open

(in case they choose to risk it).

**Truth Table:**

**input output**

P4 P3 P2 P1 A4 A3 A2 A1

0 0 0 0 0 0 0 0

0 0 0 1 0 0 0 1

0 0 1 0 0 0 0 1

0 0 1 1 0 0 1 1

0 1 0 0 0 0 0 1

0 1 0 1 0 0 0 1

0 1 1 0 0 0 1 1

0 1 1 1 0 1 1 1

1 0 0 0 0 0 0 1

1 0 0 1 0 0 0 1

1 0 1 0 0 0 0 1

1 0 1 1 0 0 1 1

1 1 0 0 0 0 1 1

1 1 0 1 0 0 1 1

1 1 1 0 0 1 1 1

1 1 1 1 1 1 1 1

Parking Space 1 – P1

Parking Space 2 – P2

Parking Space 3 – P3

Parking Space 4 – P4

Only One Space Open – A1

Two or More Adjacent Spaces Open – A2

Three or More Adjacent Spaces Open – A3

Four Adjacent Spaces Open – A4

**Inputs:**

PIN 2 = P1

PIN 3 = P2

PIN 4 = P3

PIN 5 = P4

**Outputs:**

PIN 19 = A1

PIN 18 = A2

PIN 17 = A3

PIN 16 = A4

***Inputs Outputs***

**PLD Pin Numbers:**

**Inputs:**

**Outputs:**

*Note: Outputs will display on the four*

*LEDs of the power supply kit*

2A – Parking Space Problem

*An example of how to enter this project into*

*WinCUPL is given on page*