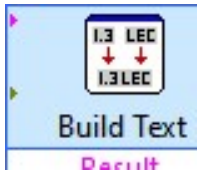
Project: Starlight Express USB Port Programming

In this project, you will need to use LabVIEW to control the tip-tilt lens from the Starlight Express. The tip-tilt has 4 motors to tilt the image in the East, West, North and South directions, and can be controlled via a serial USB port. The control is done through the USB port by sending a 7-digital string text. The following list the 4 commands to send 1-step tilt in each direction. Fox example, to send one step in the north:-, the text command is GN00001.

The maximum step is 45. To send 40 steps in south, the command is GS00045

You can use the LabVIEW function "Build Text" to build this a 7-digital string command.



The serial mode command list

Char 1	Char 2	Char 3	Char 4	Char 5	Char 6	Char 7	Result	Return
K							Find Centre	K
G	N	0	0	0	0	1	AO 1 step North	G or L (hit limit)
G	S	0	0	0	0	1	AO 1 step South	G or L (hit limit)
G	T	0	0	0	0	1	AO 1 step East	G or L (hit limit)
G	W	0	0	0	0	1	AO 1 step West	G or L (hit limit)

Write a code to control each direction. In this assignment, you need to use the random function to generate a random value to control the amplitude in each direction that can be chosen and changed from the front panel. A Led light will switch on to show the current direction being chosen. This can be done by using a while loop. See the following picture for the LabVIEW Front Panel.