Engin 103 Nov. 4, 2008 back to e-syllabus	Topics: Project 2 Progress Reports Project 2 and LabVIEW Survey Estimation Logbook questions

Project 2 Progress Report:

Project 2 leaders: please copy this document and fill in your team response below. Then save as a web page: name "p2pr.html" and upload to your *files* folder. This Progress Report **is required as** as part of Project 2 on LabVIEW Virtual Instruments.

Team #	Part I: VI#1 Due Oct. 28, 2008 1) Describe the problem you will solve in a few words 2) What equation(s) you will implement in this VI? 3) Describe the inputs and outputs, with corresponding units 4) List the LabVIEW elements and how many of each you will use	Part II: VI#2 Due Oct. 30, 2008 1) Describe the problem you will solve in a few words 2) What equation(s) you will implement in this VI? 3) Describe the inputs and outputs, with corresponding units 4) List the LabVIEW elements and how many of each you will use **5) Describe what operations will be grouped into a subVI and how many times the subVI will be called into the main Block Diagram**	Assign a grade on communication in your team in this project: 4 –members always communicate how they are doing on their part 3 – members sometimes communicate how they are doing on their part 2- some member does not reply emails or phone calls 1 – members show no interest in participating
1	1.If car A (of velocity Va and mass Ma) has a head on collision with car B (of velocity Vb and mass Mb) what will the resulting velocity of the two cars be when they are stuck together?	5. The Sub Vis that we would be using for this project would be mass times Velocity (M*V). This Sub VI will be used 2 times in our project.	4-Member are always communicating with each other, helping each other out whenever we need to. We always keep in contact and everyone does their part to the best of their abilities.

	2.Elastic collision(m1v1 + m2v2 = (m1 + m2)vf) 3.m=mass of the cars, v=velocity of the cars 4.addition and multiplication 2 additions and 4 multiplications			
2	1. when an airplane runs off the end of a runway the force needed to stop the plane safely. 2. $v^2=v_0^2+2a_x\Delta x$ is used to find the plane's average acceleration. 3. Inputs : final velocity- unit m/s, Initial velocity- unit m/s, distance (Δx) unit- m, Mass –unit kg. 4. Output Force unit- N			
3	1) Design a VI that computes both the sum and the difference of two numeric inputs labeled X & Y that should light one of three LEDs depending on whether or not the sum is greater than, equal to, or less than the difference the between two inputs. 2.) X + Y > X - Y? X + Y = X - Y? X + Y < X - Y? 3.) We will be using a Boolean indicator to yield a response to our LED light. 4.) X, Y, Comparison Nodes			
4	) We can use the Equations of Motion to calculate the speed of an object under different circumstances. These are quantities are involved in linear motion, movement in	5) Most likely, we can group division and addition into a subVI and we are guessing of using it about twice through the operation.	4 – Our team is perfectly communicating each other through an email and phone calls.	

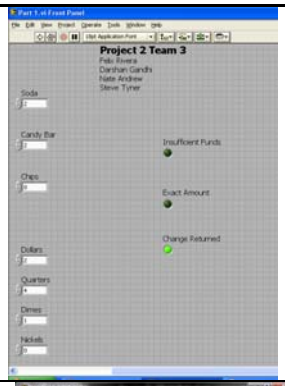
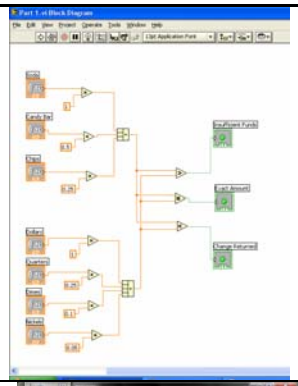
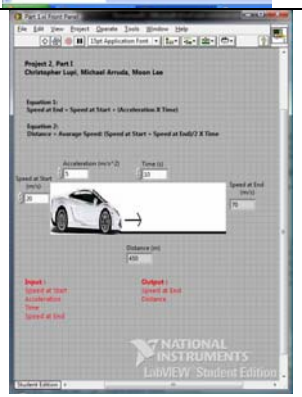
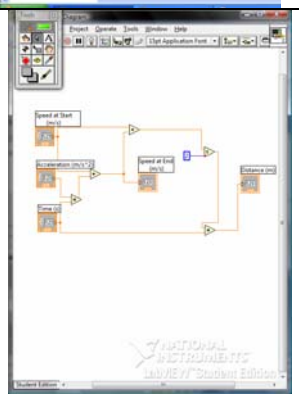
		a straight line. 2) Speed at end = speed at start + (acceleration × time) $v = u + at$ Distance = average speed × time $S = \frac{(u + v)\, t}{2}$ $S = ut + \frac{1}{2} at^2$ 3) Inputs: speed at start – u Acceleration – a Time – t Outputs: speed at the end – v Distance – s 4) Numeric controls for inputs and Numeric indicators for outputs. Also it will contain many of basic algebra symbols for the calculations.			
	5	1.) What is the percent accuracy of the weather reports the next day's temperature? 2.) This VI equation will be similar to: [$(pT_1-aT_1)+(pT_2-aT_2)$…/n=average accuracy] where pT=predicted temp, aT=actual temp, n=number of days 3.) Input and output will be in Degrees F 4.) We will be using add/sub, mult/div (number will depend on amount of days calculated) and maybe a thermometer	1.) What is the percent accuracy of the weather reports the next day's temperature? 2.)(aT-pT/aT)x100 will be our primary equation 3.) Inputs and outputs will be in degrees F 4.) 14 Numeric controls, 7 numeric indicators, 7 sub-VI's 5.) The sub-VI's will be the equation (aT-pT/aT)x100. It will be called in 7 times.		
	6				
	7				
	8	1) The problem that we will solve is the Body Mass Index (BMI). 2) BMI = $(703*W)/H^2$ 3) Inputs are Weight (pounds) Height (inches) Output is the BMI	1) The problem that we will solve is the Body Mass Index (BMI). 2) BMI = $(703*W)/H^2$ 3) Inputs are Weight (pounds) i. Height (inches) Output is the BMI	4 –members always communicate how they are doing on their part	

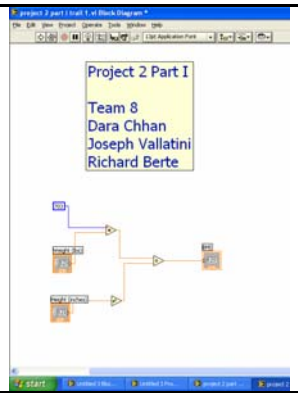
	We are going to do two trials. 4) Numeric Control Numeric Indicator X^2, multiplication, division.	We are going to do two trials. 4) 2 Numeric Control 1 Numeric Indicator 1 X^2, 1 multiplication, 1 division. 5) X^2, multiplication, division We are going to call two SubVi to the block diagram because we are doing two trails.	
9	See team 2 and team 4		
10	1) How high is the building if the book free falls from the top to the bottom? The time it took was 8.69 s to fall. 2) d=vi*t+0.5*a*t^2 3) The inputs would be vi and the time. And the outputs would be the distance in miles and km. 4) Numeric control and Numeric indicator	1) How high is the building if the book free falls from the top to the bottom? The time it took was 8.69 s to fall. 2) d=vi*t+0.5*a*t^2 3) The inputs would be vi and the time. And the outputs would be the distance in miles and km. 4) Numeric control and Numeric indicator 5) 2 trials	4

back

Project 2 Part I Presentations

Team #	Brief descriptions of your VI	Insert a snap shot of the Front Panel. Resize the figure to a height of 2in	Insert a snap shot of the Block Diagram. Resize the figure to a height of 2in	Grade your team readiness for Part II: (1- still figuring what to do; 2- have the equations but not the VI; 3- have the VI and sub-VI with some errors; 4- VI and sub VI tested, ready to go)* Note: Office hours are tomorrow 9-11am
1				
2				

	3	Vending Machine that sells Soda, Candy & Chips			3
	4	Our VI operates with inputs of speed at the start, acceleration, time to calculate the output of speed at the end and distance of object moving.			1 – we are not sure what equation we should use for part II yet.
	5				
	6				
	7				

8	Calculate the human Body Mass Index (BMI) based on the weight (in pounds) and the height (in inches) of human.			4- VI and sub VI tested, ready to go
10				

back

Project 2 and LabVIEW Survey

back

back

back

LOGBOOK: example of a logbook page

-Use a quadrille notebook; number all pages; date all entries
-Write your notes for all activities, thoughts, problems and solutions, and learning conclusions related to Engin 103. You should write

down progress, outcomes, and conclusions on projects and teamwork; conclusions from class work (including LabVIEW) and homework.
-In addition you should answer in the logbook all questions listed in these notes in blue, as shown below:
33) Specify the inputs and outputs, with clear details, for your team Virtual Instrument to be presented as Part I of Project 2. Write the equations that allow the calculation of the outputs from the inputs, explain each variable in your equations.
34) Insert a snapshot of the Front Panel and Block Diagram of your team VI for Part I of Project 2, explain did you need to use those specific elements.
35) Describe at least two LabVIEW elements not included in your team's VI but used in other teams' VI's.
36) Specify the inputs and outputs, with clear details including equations to obtain the outputs from the inputs, for your team Virtual Instrument to be presented as Part II of Project 2. List what LabVIEW elements will be used in the Block Diagram, how many times a subVI will be called in, and what elements will be included in the sub-VI, use LabVIEW terminology.

back