











1. Start
2. Create a main menu showing any greeting message together with a main menu showing these four choices: Mechanics (203-NYA), Electricity & Magnetism (203-NYB), Waves & Modern Physics (203-NYC) and Exit and act for the corresponding choice.

3.If **Exit** is clicked

1. Display any adios message.
2. Terminate the execution of the computer application.

4. If **Mechanics** is clicked:

1. Create a sub menu showing three sub choices: Energy, Kinematics and In\_Construction. And a return button to return to main menu.
   1. If **Energy** is clicked:
      1. Display a user interface showing the standard buttons: Start, Done, Pause, Reset, additional buttons, labels and text fields to get appropriate values from the user for the variables of the formula used.
      2. Users will initialize (or re-initialize) the value of the property being animated and/or other variables of the formula involved before running the animation, or will terminate the execution(**Done)**, or will **pause** the animation to **reset** their values; and then, restart this animation again.
         1. If **Start** is clicked:
            1. Start the animation:

Start an animation which takes the given values for the variables and describes the formula for energy given.

Start a graph which describes this formula also.

* + - 1. If **Done** is clicked:
         1. Terminate the current animation; and then, display the sub menu again. (**return to step 4.1)** Users can thereafter run another animation or choose another subject.
      2. If **Pause** is clicked:
         1. Pause the execution of the application. Enable the user to look and change the property values.
      3. If **Reset** is clicked:
         1. Display the user interface with the initial (or default) setting values together with the buttons to start the current animation again. Users will get the opportunity to change the variables at this time by changing their current values.
  1. If **Kinematics** is clicked:
     1. Display a user interface showing the standard buttons: Start, Done, Pause, Reset, additional buttons, labels and text fields to get appropriate values from the user for the variables of the formula used.
     2. Users will initialize (or re-initialize) the value of the property being animated and/or other variables of the formula involved before running the animation, or will terminate the execution(**Done)**, or will **pause** the animation to **reset** their values; and then, restart this animation again.
        1. If **Start** is clicked:
           1. Start the animation:

Start an animation which takes the given values for the variables and describes the formula for Kinematics given.

Start a graph which describes this formula also.

* + - 1. If **Done** is clicked:
         1. Terminate the current animation; and then, display the sub menu again. (**return to step 4.1)** Users can thereafter run another animation or choose another subject.
      2. If **Pause** is clicked:
         1. Pause the execution of the application. Enable the user to look and change the property values.
      3. If **Reset** is clicked:
         1. Display the user interface with the initial (or default) setting values together with the buttons to start the current animation again. Users will get the opportunity to change the variables at this time by changing their current values.
  1. If **return** is clicked: The main menu will be displayed again.
     1. Return to step 2.

5. If **Electricity & Magnetism** is clicked:

1. Create a sub menu showing three sub choices: Energy, Kinematics and In\_Construction. And a return button to return to main menu.
   1. If **Parallel circuits** is clicked:
      1. Display a user interface showing the standard buttons: Start, Done, Pause, Reset, additional buttons, labels and text fields to get appropriate values from the user for the variables of the formula used.
      2. Users will initialize (or re-initialize) the value of the property being animated and/or other variables of the formula involved before running the animation, or will terminate the execution(**Done)**, or will **pause** the animation to **reset** their values; and then, restart this animation again.
         1. If **Start** is clicked:
            1. Start the animation:

Start an animation which takes the given values for the variables and describes the formula for Parallel circuits given.

Start a graph which describes this formula also.

* + - 1. If **Done** is clicked:
         1. Terminate the current animation; and then, display the sub menu again. (**return to step 4.1)** Users can thereafter run another animation or choose another subject.
      2. If **Pause** is clicked:
         1. Pause the execution of the application. Enable the user to look and change the property values.
      3. If **Reset** is clicked:
         1. Display the user interface with the initial (or default) setting values together with the buttons to start the current animation again. Users will get the opportunity to change the variables at this time by changing their current values.
  1. If **Dipole moment** is clicked:
     1. Display a user interface showing the standard buttons: Start, Done, Pause, Reset, additional buttons, labels and text fields to get appropriate values from the user for the variables of the formula used.
     2. Users will initialize (or re-initialize) the value of the property being animated and/or other variables of the formula involved before running the animation, or will terminate the execution(**Done)**, or will **pause** the animation to **reset** their values; and then, restart this animation again.
        1. If **Start** is clicked:
           1. Start the animation:

Start an animation which takes the given values for the variables and describes the formula for Dipole moment given.

Start a graph which describes this formula also.

* + - 1. If **Done** is clicked:
         1. Terminate the current animation; and then, display the sub menu again. (**return to step 4.1)** Users can thereafter run another animation or choose another subject.
      2. If **Pause** is clicked:
         1. Pause the execution of the application. Enable the user to look and change the property values.
      3. If **Reset** is clicked:
         1. Display the user interface with the initial (or default) setting values together with the buttons to start the current animation again. Users will get the opportunity to change the variables at this time by changing their current values.
  1. If **return** is clicked: The main menu will be displayed again.
     1. Return to step 2.

6. If **Waves & Modern Physics** is clicked:

1. Create a sub menu showing three sub choices: Energy, Kinematics and In\_Construction. And a return button to return to main menu.
   1. If **Doppler effect** is clicked:
      1. Display a user interface showing the standard buttons: Start, Done, Pause, Reset, additional buttons, labels and text fields to get appropriate values from the user for the variables of the formula used.
      2. Users will initialize (or re-initialize) the value of the property being animated and/or other variables of the formula involved before running the animation, or will terminate the execution(**Done)**, or will **pause** the animation to **reset** their values; and then, restart this animation again.+
         1. If **Start** is clicked:
            1. Start the animation:

Start an animation which takes the given values for the variables and describes the formula for Doppler effect given.

Start a graph which describes this formula also.

* + - 1. If **Done** is clicked:
         1. Terminate the current animation; and then, display the sub menu again. (**return to step 4.1)** Users can thereafter run another animation or choose another subject.
      2. If **Pause** is clicked:
         1. Pause the execution of the application. Enable the user to look and change the property values.
      3. If **Reset** is clicked:
         1. Display the user interface with the initial (or default) setting values together with the buttons to start the current animation again. Users will get the opportunity to change the variables at this time by changing their current values.
  1. If **Transverse wave** is clicked:
     1. Display a user interface showing the standard buttons: Start, Done, Pause, Reset, additional buttons, labels and text fields to get appropriate values from the user for the variables of the formula used.
     2. Users will initialize (or re-initialize) the value of the property being animated and/or other variables of the formula involved before running the animation, or will terminate the execution(**Done)**, or will **pause** the animation to **reset** their values; and then, restart this animation again.
        1. If **Start** is clicked:
           1. Start the animation:

Start an animation which takes the given values for the variables and describes the formula for Transverse wave given.

Start a graph which describes this formula also.

* + - 1. If **Done** is clicked:
         1. Terminate the current animation; and then, display the sub menu again. (**return to step 4.1)** Users can thereafter run another animation or choose another subject.
      2. If **Pause** is clicked:
         1. Pause the execution of the application. Enable the user to look and change the property values.
      3. If **Reset** is clicked:
         1. Display the user interface with the initial (or default) setting values together with the buttons to start the current animation again. Users will get the opportunity to change the variables at this time by changing their current values.
  1. If **return** is clicked: The main menu will be displayed again.
     1. Return to step 2.

7. End