YP Circular 1.0

A circular motion and simple harmonic motion simulator.

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Price (Shareware): $15 US

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Program description:
YP Circular simulates an object in uniform circular motion and/or an object in simple harmonic motion.   Both motions (circular and harmonic) may be animated simultaneously to show that the uniform circular motion is a combination of two simple harmonic motions.   Physics teachers use YP Circular to show that the velocity is tangent to the circle and that the centripetal acceleration is directed toward the center of the circle, in a uniform circular motion.   Finally, physics students using YP Circular should get a better understanding of the meaning of the following concepts: "vector", "component of a vector", "position", "velocity", "acceleration".

During the simulation, it is possible to display the following vectors: acceleration, velocity and position, and the following graphs: acceleration, velocity and position versus time.

Required Hardware and Software: YP Circular runs on any Macintosh
computer with MAC OS 7.0 or later.   It needs about 250 Kb on your hard disk and 700 Kb of RAM.   The software runs on older models with 68000 processors (Mac Plus, Mac Classic), but simulations are slower.

Program operation:
When you launch YP Circular, the animation window is displayed on the screen: the three animated simulations will appear in this window (uniform circular motion, horizontal harmonic motion, vertical harmonic motion). Select item "Start Animation" in the "Animation" menu to start the animation.   Choose an item from the "Vectors" menu to display the corresponding vector during the animation.   Choose an item from the "Graphs" menu to display the corresponding graph during the animation.

Using YP Circular:

Note: To help you explore all menus of the program, you may use balloon help (with the "?" menu, in the top right corner of the screen).

Menus:

"Apple" Menu:

Use this menu to
- open an item from the Apple Menu Folder,
- read information about YP Circular,
- consult online help, or
- unlock your copy of the program.

• "About YP Circular..." item: When you select this item from the Apple menu, a dialog box showing information about the version number and copyright is displayed, as well as whether your copy of the software has been registered or not.

"Unlock" button: This button is visible only if your copy of the software has not yet been personalized. After receiving your personal unlocking code, click on this button to open another dialog box so that you may enter (or paste) your name and your unlocking code in the appropriate zones.

"Help & Info" Button: This button gives you access to online help.

"File" Menu:

Use the "File Menu" to
- save content of the active window as a PICT file,
- close the active window,
- print the active window,
- quit the application YP Circular.

"Save as PICT..." item:

When you select this item from the "File" menu, content of the active window (trajectory or graph) are saved as a PICT file, which can be open by any draw of paint program.

"Close Window" item:

When you select this item from the "File" menu, the program closes the

active window.

Use this item when you want to use a different paper size, or orientation.

"Print" item:

Use this item to print the content of the active window.

"Quit" item:

Use this item from the file menu to quit the program "YP Slider Crank".

"Edit" Menu:

The "Cut", "Paste" and Delete" items are available only when a dialog box in which you may enter text is active.

The "Copy" item is also available when the animation window (or a graph window) is active, so you can easily copy a frame (picture) in the clipboard.

"Animation" Menu:

Use this menu
- to start or stop the animation of the mechanism,
- to play the animation frame by frame,
- to control the speed of the animation,
- to reverse the direction of motion,
- to show or hide one of the three motions: circular motion, horizontal harmonic motion or vertical harmonic motion.

"Vectors" Menu:

Use this menu to display a graphical representation of the following vectors:

- position
- velocity
- horizontal component of velocity
- vertical component of velocity
- acceleration
- horizontal component of acceleration
- vertical component of acceleration

"Graphs" Menu:

Use this menu to display one or several of the following graphs during animation:
- horizontal component of position versus time
- vertical component of position versus time
- horizontal component of velocity versus time
- vertical component of velocity versus time
- horizontal component of acceleration versus time
- vertical component of acceleration versus time

You must then use the "Start Animation" item from the "Animation" menu to see the progression of the graphs during the animation.   By using the appropriate items of the "File" and "Edit" menus, it is possible to print, copy or save these graphs (as PICT files).

"Help" Menu:

YP Circular supports Balloon Help.   Use this menu to show or hide help balloons, and to display online help.

Ordering information:
YP Circular is shareware.   The unregistered version of YP Circular may be freely distributed to allow anybody to try it before registering.   You are permitted to upload it to a BBS, distribute it on a CD-ROM, or give a copy to a friend.

If you want to use YP Circular on a regular basis, you must pay for a user license.   You will then receive an unlocking code that will permit you to personalize your copy of the program.

The unregistered version have the following limitations:
- the mention "This copy is for evaluation only." is permanently displayed in the main window.
- one item from the "Vectors" menu and one item from the "Graphs" menu are not available (the unavailable animation is chosen randomly at startup).

Your unlocked version will have the following advantages:
- the mention "This copy is for evaluation only." will never be displayed again in the main window.
- all items of the "Vectors" and "Graphs" menus will be available.
- in addition, you will be able to unlock all future updates of YP Circular with the same unlocking code.

Methods of Payment:

Kagi, an american company, handles my payment processing.   It is possible to pay by credit card (Visa, Master Card, American Express), by check or postal money order (in american dollars), with cash, or by "First Virtual".

When you are ready to pay, open the Register program that accompanies YP Circular. Enter your name, your email address, and the number of single user licenses you desire for each program you wish to purchase (or Site licenses). Save or Copy or Print the data from the Register program and send the data and payment to Kagi.

Payments with Credit Card or First Virtual: you can email or fax the data generated by Register to Kagi. Their email address is sales@kagi.com and their fax number is +1 510 652-6589.

Payments with Cash or US Dollars Check: You should print the data using the Register application and send it to the address shown on the form, which is:

> Kagi
> 1442-A Walnut Street #392-7A
> Berkeley, California 94709-1405
> USA

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Since we must send you the unlocking code that will permit you to unlock your copy of YP Circular, it is important that you enter your email address or your postal address (and please, do not forget to specify which country you live in).   Your postal address will be used only if you do not give your email address.   If you want your unlocking code sent to you by postal mail, do not enter your email address.

Detailed Prices:

Single User License: A $15.00 US registration fee will license one copy of YP

Circular for use on any one computer at any one time. For example, one copy may be used by any number of people and may be freely moved from one computer to another as long as there is no possibility of it being used simultaneously on more than one machine.

Lab Packs:
2 to 4 single user licenses: $12.00 US per user.
5 to 14 single user licenses: $10.00 US per user.
15 single user licenses or more: $ 9.00 US per user.

Site License: A license covering all locations for your organization within a 160 kilometer radius of your site (100 miles), is available at the price of $200.00 US.

Technical Support:
If you have any comments or suggestions, please feel free to e-mail me at pelletier@kagi.com (or ch865@freenet.carleton.ca).