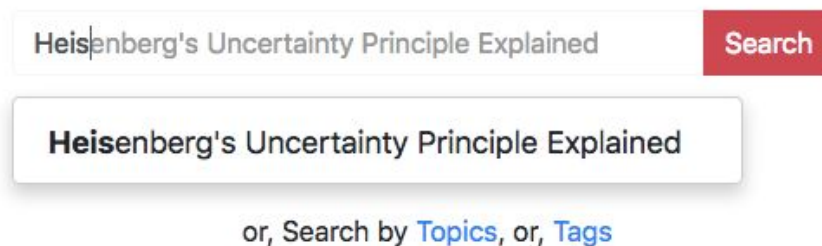


## Part V: Persona and Intent/Actions/Feedback Story:

As mentioned in Part II, the website is aimed at first year undergraduate students in Physics who are beginners to topics in modern physics like Quantum Mechanics, Relativity etc. These students can watch these videos to get a basic grasp of the topic and jot down an outline, which they can then download to their computers for later reference. Once they are done accomplishing this task, they are taken back to the home page where they can search for other topics.

The sequence of actions is highlighted below -

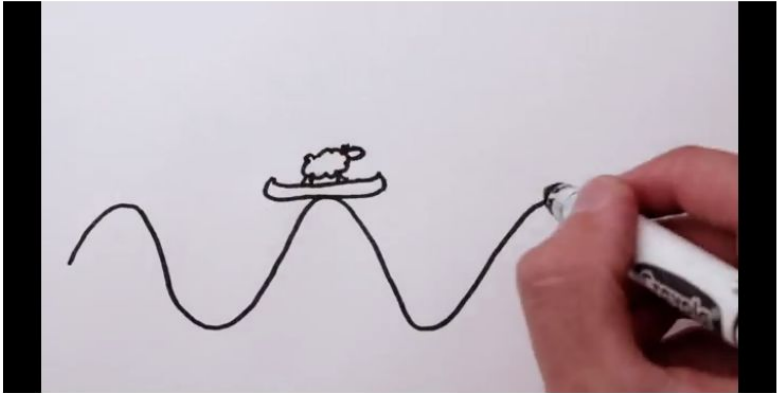
1. User starts typing his query in the home page:
  - a. Feedback: The autocomplete corresponding to the input bar suggests relevant search queries from which the user can select one.



2. User selects "Heisenberg's Uncertainty Principle Explained" and hits Search or presses Enter key:
  - a. Feedback: User is taken to a new page where the appropriate video begins auto-playing, in addition to giving options for the user to jot down an a bulleted list of quick notes or an outline on the right hand side of the page.
  - b. Below the video there are options to play a specific video segment again based on the start and end times provided.

- c. There also exists provision to mark specific times in the video which the highlight by clicking the “Mark Start Time” button. Doing so adds them to the “Choose Time” dropdown.

Heisenberg's Uncertainty Principle Explained



Play Segment:   Play

More options: Mark Start Time Choose Times ▾ Tag Video

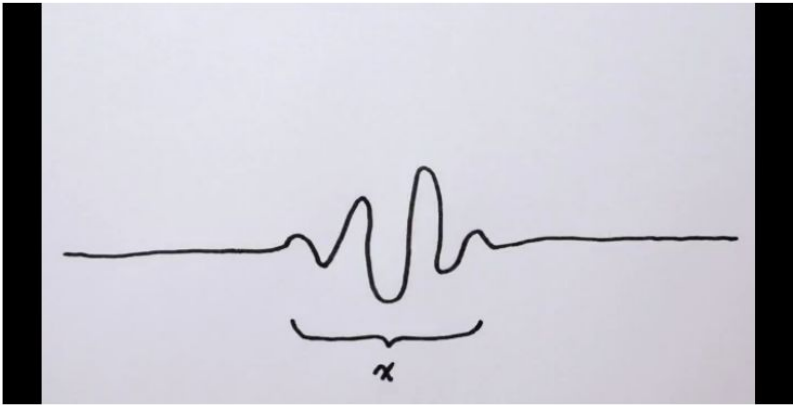
Bulleted List **Outline**

Start a bulleted list...

Save Note Done

3. User selects the Outline tab on the right to jot down notes:
- a. Feedback: The tab switches to Outline while the video continues to play

Heisenberg's Uncertainty Principle Explained



Play Segment:   Play

More options: Mark Start Time Choose Times ▾ Tag Video

**Bulleted List** Outline

Start an outline...

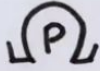
Save Note Done

4. User starts to type his outline in the text area:

- a. Feedback: The playing video automatically pauses to let the user finish taking his notes.

## Heisenberg's Uncertainty Principle Explained

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www.youtube.com/subscription\_center




Minute

More videos

Why can't you go faster than light?

Common misconceptions of Heisenberg's Uncertainty Principle

IS SPACE...  
FLAT? HYPERBOLIC? A POTATO?



0:02 / 1:03

CC

Settings

Play Segment: Start Time in MM:SS End Time in MM:SS Play

More options: Mark Start Time Choose Times ▾ Tag Video


Bulleted List Outline

The |

Save Note Done

5. User presses play in the YouTube player on the left in order to resume the video:
- a. Feedback: The video begins to play from where the user left off.

## Heisenberg's Uncertainty Principle Explained



Play Segment: Start Time in MM:SS End Time in MM:SS Play

More options: Mark Start Time Choose Times ▾ Tag Video

Bulleted List Outline

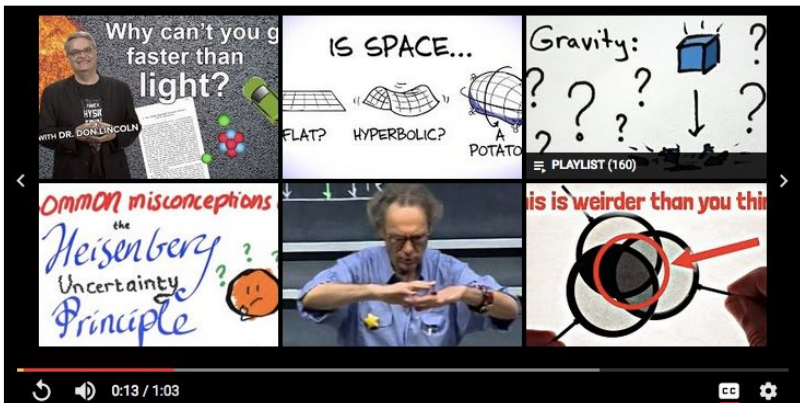
The uncertainty principle is any mathematical inequality that asserts a fundamental limit to the precision with which certain pairs of physical properties of a particle, known as complementary variables, such as position  $x$  and momentum  $p$ , can be known.

Save Note Done

6. User enters 00:10 in the start time field and 00:13 field in the end time field to loop the video segment where the principle is explained:
  - a. Feedback: The video begins playing at 00:10 seconds and stops automatically at 00:13 seconds.
  - b. User jots jots down the note “The better we know where a particle is, the less we know about how fast it’s going.”

### Heisenberg's Uncertainty Principle Explained

[Bulleted List](#) [Outline](#)



The uncertainty principle is any mathematical inequality that asserts a fundamental limit to the precision with which certain pairs of physical properties of a particle, known as complementary variables, such as position  $x$  and momentum  $p$ , can be known.

The better we know where a particle is, the less we know about how fast it's going.

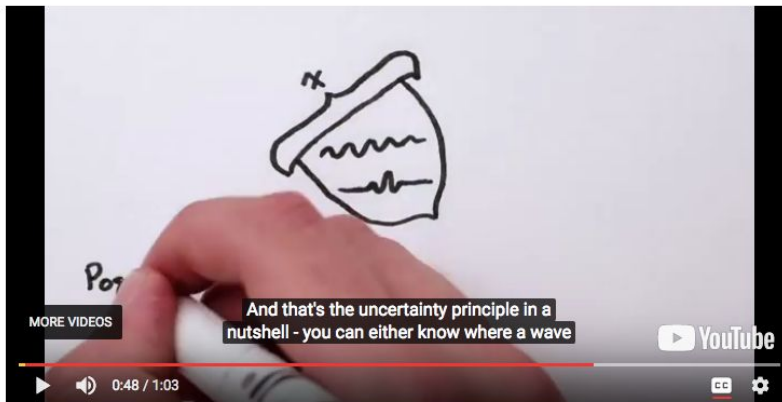
Play Segment: 00:10 00:13 [Play](#)

More options: [Mark Start Time](#) [Choose Times](#) [Tag Video](#)

[Save Note](#) [Done](#)

7. User marks 00:47 seconds to revisit the video again from that time by clicking the “Mark Start Time” button:
  - a. The time 00:47 seconds gets added to the “Choose Times” dropdown

## Heisenberg's Uncertainty Principle Explained



Bulleted List

Outline

The uncertainty principle is any mathematical inequality that asserts a fundamental limit to the precision with which certain pairs of physical properties of a particle, known as complementary variables, such as position  $x$  and momentum  $p$ , can be known.

The better we know where a particle is, the less we know about how fast it's going.

Play Segment: 00:10

00:13

Play

Save Note

Done

More options:

Mark Start Time

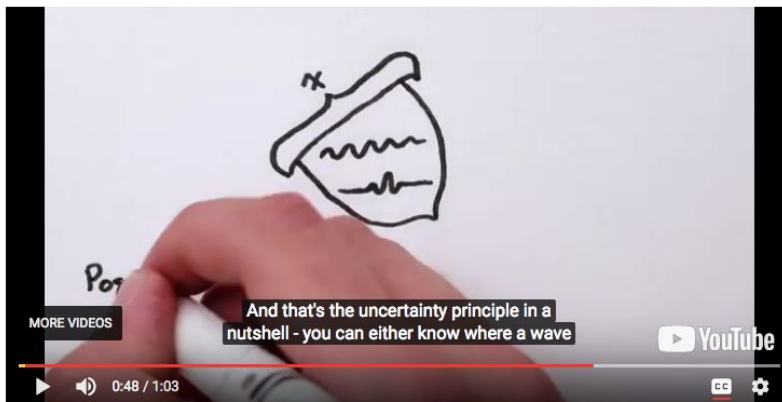
Choose Times ▾

Tag Video

00:47

8. While the video is playing, user now selects 00:47 from the “Choose Times” dropdown:
  - a. Feedback: The video begins playing from 00:47 seconds onwards.

## Heisenberg's Uncertainty Principle Explained



Bulleted List

Outline

The uncertainty principle is any mathematical inequality that asserts a fundamental limit to the precision with which certain pairs of physical properties of a particle, known as complementary variables, such as position  $x$  and momentum  $p$ , can be known.

The better we know where a particle is, the less we know about how fast it's going.

Play Segment: 00:10

00:13

Play

Save Note

Done

More options:

Mark Start Time

Choose Times ▾

Tag Video

00:47

9. User clicks “Save Note” button:
  - a. Feedback: User is prompted to save the file to his file system as a text file.



## Heisenberg's Uncertainty Principle Explained

Opening note.txt

You have chosen to open:

note.txt  
which is: Plain Text Document (338 bytes)  
from: blob:

What should Firefox do with this file?

☐ Open with TextEdit (default)

☒ Save File

☐ Do this automatically for files like this from now on.

Cancel OK

Play Segment: 00:10 00:13 Play Save Note Done

More options: Mark Start Time Choose Times Tag Video

10. User clicks “Done” button”:

- Feedback: User is displayed a success message popup and is presented with two options: Be directed to the home page by clicking OK, or clicking Cancel to stay in the same page.

Heisenberg's Uncertainty Principle Explained

Bulleted List Outline

The uncertainty principle is any mathematical inequality that asserts a fundamental limit to the precision with which certain pairs of physical properties of a particle, known as complementary variables, such as position  $x$  and momentum  $p$ , can be known.

The better we know where a particle is, the less we know about how fast it's going.

Success!

You have successfully finished your outline. Directing you back to the home page... Hit OK to proceed.

Cancel OK

Play Segment: 00:10 00:13 Play Save Note Done

More options: Mark Start Time Choose Times Tag Video

11. User clicks “OK” button”

- a. Feedback: User is successfully taken back to the home page, from where he can start a fresh search.



# SciTube!

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Designed and built with all the love in the world by [Ravie Lakshmanan](#).

Currently v3.0.0-alpha.0.