UNIT 10

Pre-task

P.1 Know about LED (Light Emitting Diode) lights.

- How are LED lights eco-friendly?


Isamu Akasaki


Hiroshi Amano


Shuji Nakamura

Isamu Akasaki, Japan; **Hiroshi Amano**, Japan and **Shuji Nakamura**, USA were awarded the Nobel prize for inventing a new energy-efficient and environment-friendly light source. White LED lamps produce bright white light. They are long-lasting and energy-efficient. The most recent record is just over 300 lumens / watt, which can be compared to 16 lumens / watt for regular light bulbs and close to 70 lumens / watt for fluorescent lamps. As about one fourth of world electricity consumption is used for lighting purposes, the LEDs contribute to saving the Earth's resources. Material consumption is also diminished as LEDs last up to 1,00,000 hours, compared to 1,000 for incandescent bulbs and 10,000 hours for fluorescent lights.

- How are LED lights eco-friendly?
- Why should we use LED light?

P.2 Read this poem and underline the most appealing phrases.

વડલો કહે મારી વનરાયું સળગી ને,
મેલી દીયો ને જૂનાં માળા,
ઊડી જાઓ પંખી પાખ્યુંવાળા હોજી..
આભે અડિયાં સેન અગન નાં, ધખિયાં આ દશ ઢાળાજી,
આ ઘડીયે ચડી ચોટ અમોને, ઝડપી લેશે જ્વાળા,
ઊડી જાઓ પંખી પાખ્યુંવાળા હોજી..
બોલ તમારાં હૈયે બેઠાં, રૂડાં ને રસવાળાજી,
કોક દિ આવીને ટહુકી જાજો, મારી રાખ ઉપર રૂપાળાં,
ઊડી જાઓ પંખી પાખ્યું વાળા હો જી..

પ્રેમી પંખીડા પાછાં નહીં મળીએ, આ વન મારે વિગતાળાજી,
પડદાં આડા મોતનાં પડિયા, તે પર જડિયાં તાળાં,
ઊડી જાઓ પંખી પાખ્યુંવાળા હો જી..
આશરે તમારે ઈંડાં ઉછેર્યાં, ફળ ખાધાં રસવાળાંજી,
મરવા વખતે સાથ છોડી દે એના મોઢાં મશવાળાં,
ઊડી જાઓ પંખી પાખ્યુંવાળા હો જી..
ભેળાં મરશું, ભેળાં જનમશું, માથે કરશું માળાજી,
કાગ કે' આપણે ભેળાં બળીશું, ભેળાં ભરીશું ઉચાળા,
ઊડી જાઓ પંખી પાખ્યુંવાળા હો જી..

For audio: http://tahuko.com/?p=3114

દુલા ભાયા 'કાગ'

This poem tells us about: (Tick mark if you agree.)

1. how trees are useful ☐
2. relationship of the tree and the bird ☐
3. problems faced by birds and trees ☐
4. gratitude ☐
5. co-existence in nature ☐

- **What is the central idea of the poem?**
- **Describe the relationship between the tree and the birds.**

Read 1

GREEN CHARTER

Climate change and Global Warming are dramatically urgent and serious problems that can lead to calamitous consequences. We do not need to wait for governments alone to find solutions to these terrible problems. Each individual can play an important part by simply adopting a more responsible lifestyle, beginning with some little, everyday Dos and Don'ts. It's the only reasonable way to save our planet, before it is too late.

It is important for all of us to think in terms of first reducing emissions of CO_2 or Carbon Footprints. The carbon footprint is a subset of the ecological footprint. A carbon footprint is the total set of greenhouse gas emissions caused by an organization, event, product or person. Greenhouse gases can be emitted through transport, land clearance, and the production and consumption of food, fuels, manufactured goods, materials, wood, roads, buildings, and services. For simplicity of reporting, it is often expressed in terms of the amount of carbon dioxide, or its equivalent of other GHGs, emitted.

As one begins this process, it soon becomes evident that there is no way we can currently reduce emissions of greenhouse gases to zero. Every single aspect of our economy from manufacturing to transportation, and agriculture to health care is dependent on fossil fuel derived energy and resources. As we seek and develop alternative sources of energy, and as we begin to think and live in more efficient ways, we are still left with the undeniable reality that considerable CO_2 emissions from economic activity in the globe will continue and perhaps escalate over the foreseeable future. The only cogent way to take this issue head on is to offset the emissions we cannot yet eliminate.

Here is a list of simple things that everyone can do in order to fight against the menace of global warming and at the same time reduce carbon footprints. Some of these ideas are at no cost; some others require a little effort or investment but can help save a lot of money in the medium to long term. Some of these hold out a strong appeal to reason and judgement and are worth adopting as a citizens' charter.

1. Solar heaters, solar roof tops and solar lanterns should be installed in every household, especially in remote areas.

2. Awareness campaign may be initiated for using solar lanterns. NGOs can play a vital role in this regard. Millions of households are still lacking basic facility of electricity. This will prove to be a boon for them.

3. Print-out should be taken from the printer only when it is absolutely inevitable. Complete editing should be done beforehand, and then only the print option should be exercised. Reading work could be performed on PC monitor/laptop. This would hugely cut down paper consumption and save numerous trees.

4. It is often seen that pamphlets are printed in large numbers and indiscriminately distributed to all and sundry without any regard to their relevance to the recipients. Later on these trash papers lie discarded on streets, leaving an enormous burden of carbon footprint. Printing of pamphlets should be regulated and disseminated to concerned individuals only.

5. Present air conditioners carry a lot of carbon footprint. Instead of conventional air conditioners, latest power saving air conditioners should be used. It would save electricity up to 50%.

6. Don't leave appliances on standby mode. Use the 'On/Off' function in the machine itself.

7. People should be encouraged to use battery driven scooters which involve zero-emission. Technological advancements are needed for sure to augment (enlarge by

adding to) their present single run which is around 70 km at present. Such vehicles should be given government subsidy also because the carbon foot-print is negligible (insignificant/small).

8. We should re-orient (change the focus of) our electricity consumption habits both at home and at the office. For instance, we should switch off fan, cooler, or AC whenever not required or not in use. Generally, people are careless at offices. Lights can be seen on even at unwarranted places or hours. Houses and offices should be constructed to receive natural sunlight, obviating (avoiding) use of lamps in the daytime.

9. Reduce number of kilometers by walking, cycling, carpooling and using public transport.

10. Use of bicycle should be made popular. We should observe 'cycle day' once in a month and, on that day cycle riding alone should be allowed barring emergencies. People used to go for their daily chores on cycle in old times. Why can't we do the same today? In recreational trips, we can opt for bicycle instead of car or motorbike.

11. Buy intelligently: One bottle of 1.5 litre requires less energy and produces less waste than three bottles of 0.5 litre each. Buy recycled paper products. It takes 70% to 90% less energy.

12. Forests should be protected and conserved by one and all. Forests store huge quantity of carbon, and so play a critical role in carbon control.

13. Barren stretches of land should be cultivated and cultivation of bio-fuel crops should be encouraged. Ethanol & Jatropha are promising bio-fuels.

14. Bio-degradable plastics certainly have a pronounced ecological edge over conventional plastics. Bio-plastics are derived from renewable bio-mass sources.

15. Household wet-waste should be composted separately. Pots made for receiving such waste could be purchased from the market and the other material required, viz. sawdust, dry leaves, shredded paper etc. are cheap and eco-friendly. Composting could be done both for individual houses and community dwellings. This way we can produce a lot useful manure besides achieving cleanliness.

16. Choose products with little packages. Buy refills when you can.

17. Start following the practice of roof top rain water harvesting.

18. Judicious and calibrated use of water is the need of the hour. Every action pertaining to water consumption should be well calibrated. As we know water is a scarce and precious commodity. Scarcity is going to be felt more pronouncedly in coming decades. Some of the simple ways could be imbibed and made part of a simple drill to regulate our life. Like, for example: use a mug while shaving instead of allowing the water tap to gush on; accumulate washable clothes over the week and deploy washing machine only once or twice a week; use wet cotton or sponge sweep instead of washing floors quite often; avoid excessive use of shampoos and soaps; reutilise water used for bathing, after adding a few drops of anti-septic, for washing clothes. In future there is going to be an acute shortage of the same. We should learn to use it judiciously right now so that we might adapt ourselves to even stiffer water scarcities when crunch time comes.

19. Imbibe three more Rs with respect to environment, viz. 'Repair' 'Reclaim' and 'Restore' in addition to the three conventional ones-Recycle, Reduce and Re-use. We easily throw away old electronic watches and toys etc. We should repair and use them. If an old bicycle lays unused, instead of buying new one, the old one should be cleaned, oiled, serviced and restored. These six Rs should be the buzzwords for the coming decades until we restore global environment back on its original track.

Glossary

green charter contract or agreement regarding environment **calamitous** tragic, dreadful, આપત્તિજનક **consequences** results **emission** release **consumption** use **fossil** remains **escalate over** rise **foreseeable** predictable **offset** counter balance **eliminate** remove **judicious** sensible, careful **calibrated** standardized **pertaining to** related to **scarce** limited, in short supply **commodity** thing **imbibed** learned **accumulate** collect **acute** severe, intense **adapt** adjust **indiscriminately** unthinkingly **disseminated** distributed **augment** increase **negligible** small **promising** capable, favouring **chores** routine task **recreational** done for pleasure or relaxation **shredded** torn into pieces **composting** nature's process of recycling decomposed organic materials into a rich soil **re-orient** adapt to new situation, change **unwarranted** unnecessary **buzzwords** catchwords, slogan **ensuing** following

Comprehension

C.1 Which are the three most important suggestions from the text according to you? Give reasons for each.

C.2 Make lists of words/phrases which are positive and negative for environment.

Positive for environment	Negative for environment

C.3 In suggestion no. 18, there is a discussion about the use of water. Can you find anybody in your surroundings who follows many or most of the suggestions? Tell your class about him/her.

C.4 Here are some suggestions. Consider whether they are easily applicable, tough to apply or mostly impossible. Write E (Easy)/T(Tough)/I(Impossible) for each.

1. Solar water heater ☐
2. Washing clothes 2/3 times a week ☐
3. Water harvesting ☐
4. Using battery driven vehicles ☐
5. Solar mobile phone charger ☐
6. Solar lights and fans ☐
7. Maximum use of bicycle ☐
8. Cleaning car with a wet cloth ☐

C.5 How would you apply these terms in your own life? Give one example of each.

Rs	Example	Practice/Idea
Recycle	Make cards from old papers / Remains of food should be composted to produce manure.	
Reduce	Use half sheet of paper instead of full to write a note.	

Rs	Example	Practice / Idea
Reuse	Use the blank side of printed papers and leaflets.	
Repair	Repair old watch and use it.	
Reclaim	Take out a toy from the scrape and use its motor for your project.	
Restore	Colour old tins, swings etc. to take them in use.	

C.6 Give your arguments for or against these statements. (Support your argument with 'how' and 'why'.)

1. We do not need to wait for governments alone to find solutions to these terrible problems.
2. '…considerable CO_2 emissions from economic activity in the globe will continue and perhaps escalate over the foreseeable future.
3. Pamphlets for advertisements should be controlled.
4. Use of plastic should be banned.

C.7 Answer these questions.

1. Do you use e-books? How does it affect environment?
2. How many trees have you planted so far?
3. What is carbon footprint?
4. Which are the causes of GHG?
5. List the ways how you and your family can reduce emissions of CO_2 or Carbon Footprints.
6. How can smart purchase reduce carbon footprint?
7. How is consumption of home made food better than packed food?

C.8 Prepare slogans/placards for suggestion no. 4, 10, 12, 19.

C.9 What are the Dos and Don'ts for better environment? Make a list of at least 10 in each box. You can add three suggestions in each box which are not given in this charter.

Dos	Don'ts

Vocabulary

V.1 Add one suitable word to each series of the words given in the brackets.

[Commodity, shredded, accumulate, emission, scarce, negligible, augment, disseminate, adapt]

1) exhalation, discharge, emanation, _____
2) assemble, compile, gather, _____
3) enhance, boost, add to, _____
4) spread, circulate, disperse, _____
5) deficient, sparse, in short supply, _____
6) torn, mutilated, broken, _____
7) get used to, accustom, fit, _____
8) trivial, minute, trifling, _____

V.2 Fill in the blanks using words from the brackets.

[aspect, cogent, emission, consumption, scarce, consequences, initiate, acute, negligible, obviates, judicious]

1) Excessive _____ of fat can lead to heart trouble.
2) He can _____ proposals for new laws.
3) A _____ amount of damage was done to the vehicle.
4) The politician's _____ argument against the war won him many votes in the election.
5) Since Bina has an _____ fear of drowning, she has never entered a swimming pool.
6) The flyover _____ the need to drive at a snail's pace.
7) He did realize the _____ of his actions.
8) In almost all _____ of life, the application of this process will bring improvements.

V. 3 Match the words in part A with those in part B appropriately and use them in sentences of your own.

Part A	Part B	Sentences
judicious	moment	**Ex**: It is necessary to make **judicious use** of water.
negligible	problem	
enormous	consumption	
excessive	areas	
acute	amount	
remote	argument	
precious	waste	
wet	burden	
water	**use**	
cogent	pressure	

V.4 Circle the letter of each correct answer to the questions. There can be more than one answer.

1) What can be emitted?	(a) radiation	(b) gas	(c) water	(d) smoke
2) What can be disseminated?	(a) information	(b) pamphlets	(c) knowledge	(d) chairs
3) What can be scarce?	(a) oil supply	(b) resources	(c) water supply	(d) reptiles
4) What can be imbibed?	(a) good habits	(b) virtues	(c) cereals	(d) integrity
5) What can be accumulated?	(a) magazines	(b) garments	(c) horror	(d) skill
6) What can be initiated?	(a) project	(b) research	(c) toxins	(d) furniture

V.5 Find out sentences containing the following words/phrases from the read and write them down. Also use them in the sentences of your own.

Ex. remote

Textual Sentence: Solar heater should be installed in every household, especially in remote areas.

Our sentence: The Smith family loves travelling to remote locations.

1) escalate over _____

Our sentence: _____

2) gush on _____

Our sentence: _____

3) adapt to _____

Our sentence: _____

4) throw away _____

Our sentence: _____

5) fight against: _____

Our sentence: _____

6) appeal to _____

Our sentence: _____

7) pertaining to _____

Our sentence: _____

8) opt for _____

Our sentence: _____

V. 6 Find suitable forms of these words from the text and complete the pair. Then use that pair in meaningful sentences.

Example: Foresee: Foreseeable future

These trends will continue into the foreseeable future.

1) Calamity: _____ results

_____

2) Wash: _____ clothes

_____

3) Promise: _____bio-fuels

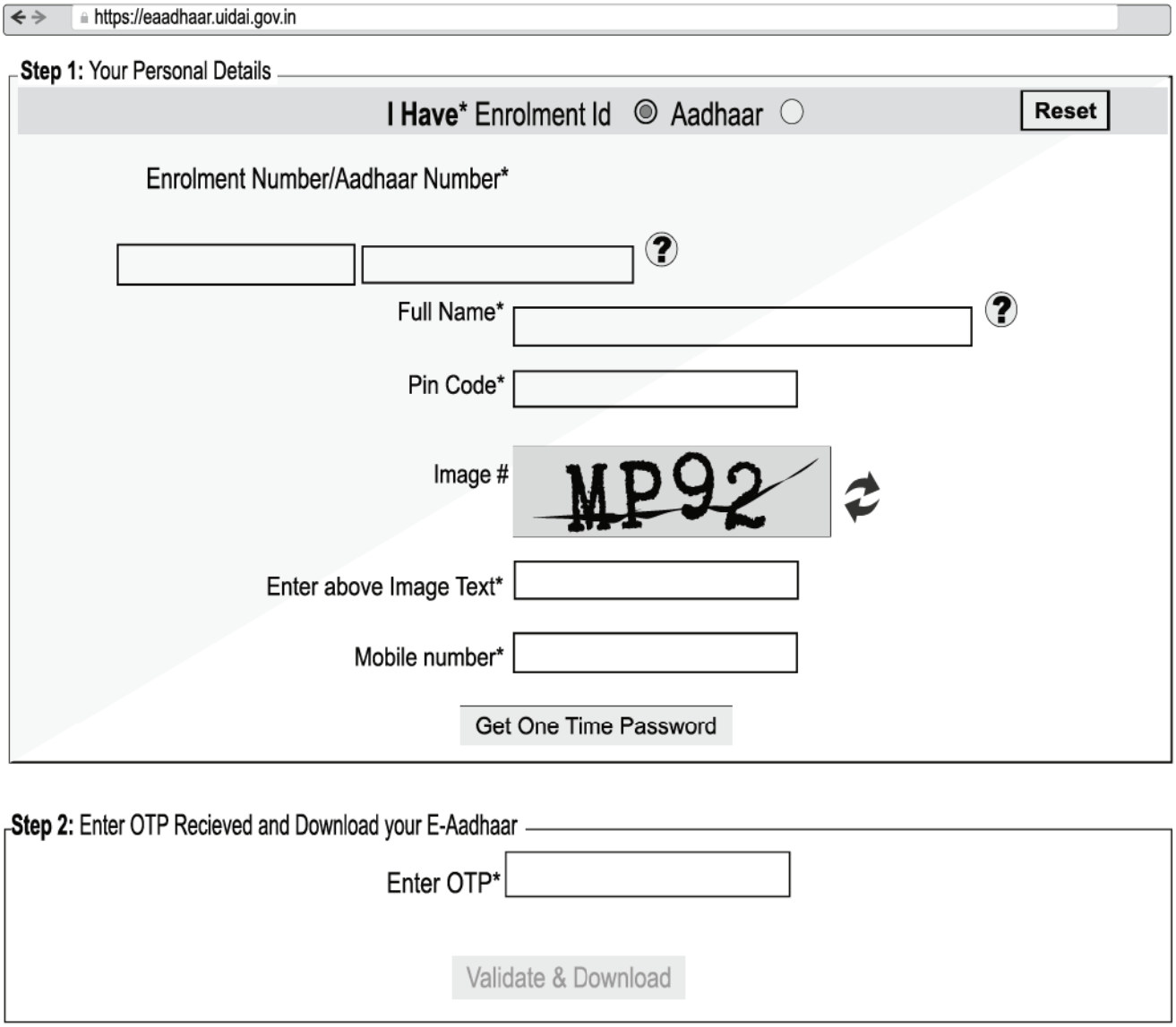
4) Shred: _____paper

5) Recreation _____trips

6) Reason _____ way

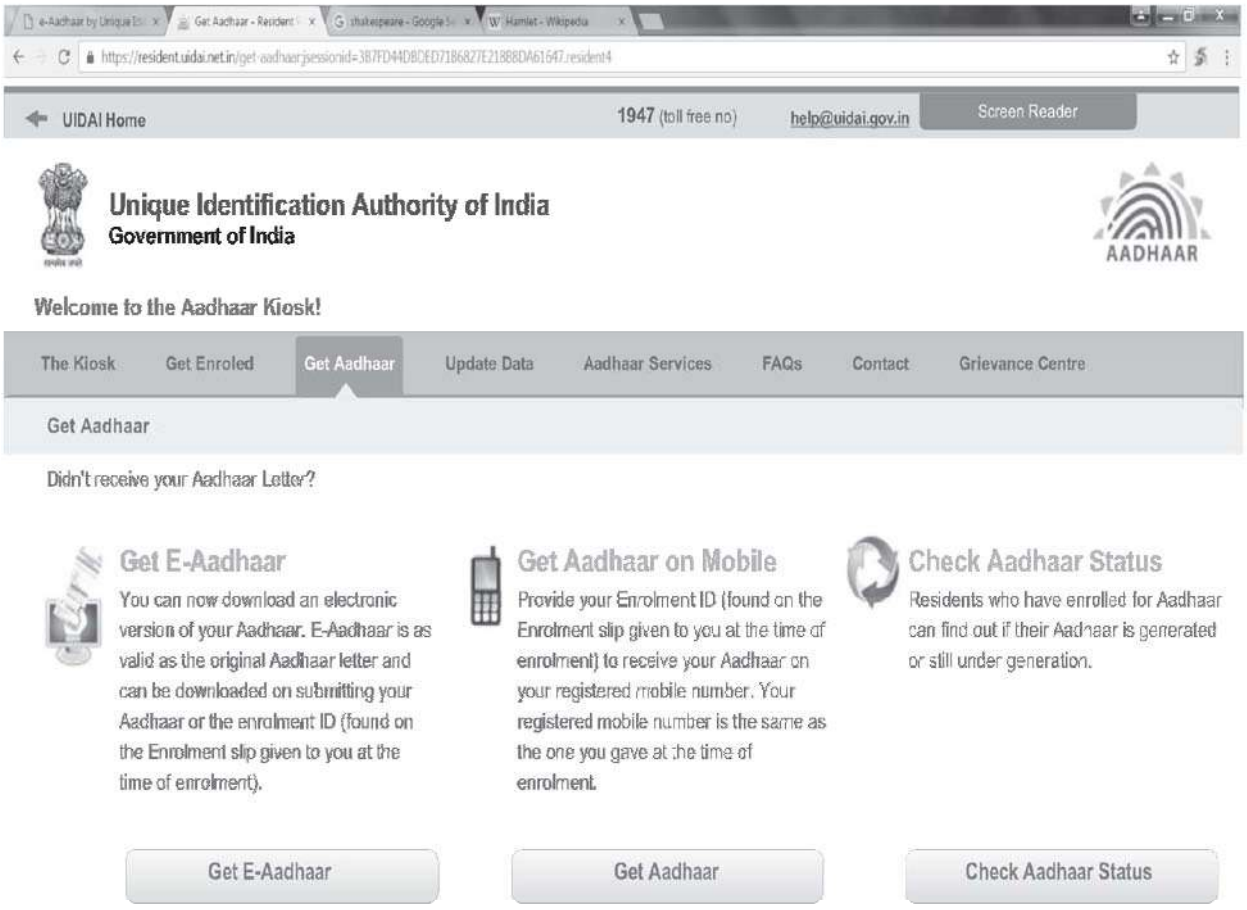
Function (Understanding and operating e-commands and instructions)

F.1 (A) Observe the screenshots and go through instructions sorted out below. Find out and add more instructions.



1. Click here to know status of your Aadhar.
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

(B) You will get this screen. Study it and do as suggested.



1. Get e-Aadhaar	2. Get Aadhaar on mobile	3. Check Aadhaar status
4. Get enrolled	5. Update Aadhaar-data	

F.2 Here are the steps to create an email account. Follow them and try to create your e-mail account. Did it work?
If not, find out the proper order of instructions and re-arrange them. (in lab or home)

1. Choose your user name- .....@gmail.com
2. First name
3. second name
4. Confirm your password
5. Create a password
6. Birth date
7. Gender
8. Mobile phone
9. Location
10. Answer
11. Security question
12. Recovery email
13. Word verification
14. Take me to my account
15. Congratulations!!! You have successfully
16. Created your Gmail account
17. Terms of services: Agree/Disagree

F.3 (A) Here are steps to read your email on your desktop computer. Read out carefully. Underline the e-words and get their meanings from your friends/ teacher/ internet.

1. Go to your desktop computer and turn on it.
2. Connect your computer to internet.
3. Find out the internet browser icon and click on it.
4. Go to the Gmail through Google.
5. Sign in Gmail and type your mail Id.
6. Type your Password.
7. Browse the inbox in your mail account.
8. Search out for the mail and read it.
9. Close the mail.
10. Sign out Gmail.
11. Close the Google Search.
12. Disconnect the internet.
13. Log off the desktop computer.

(B) Now follow this process at the computer lab at your school and read your mail.

(C) Nandan wants to read email so he starts like this.

- He turns on the desktop
- He browses Gmail through Google.
- He connects the desktop to internet.
- He searches out the internet browser.
- He clicks on the browser.
- He searches for the Gmail.

If Nandan followed these steps, would he be able to read his emails? Revise the process and correct it, if necessary :

- He signs in the Gmail.
- He enters the password.
- He types his mail Id.
- He then browses the inbox.

Will hc bc ablc to rcad mail? Ycs/No

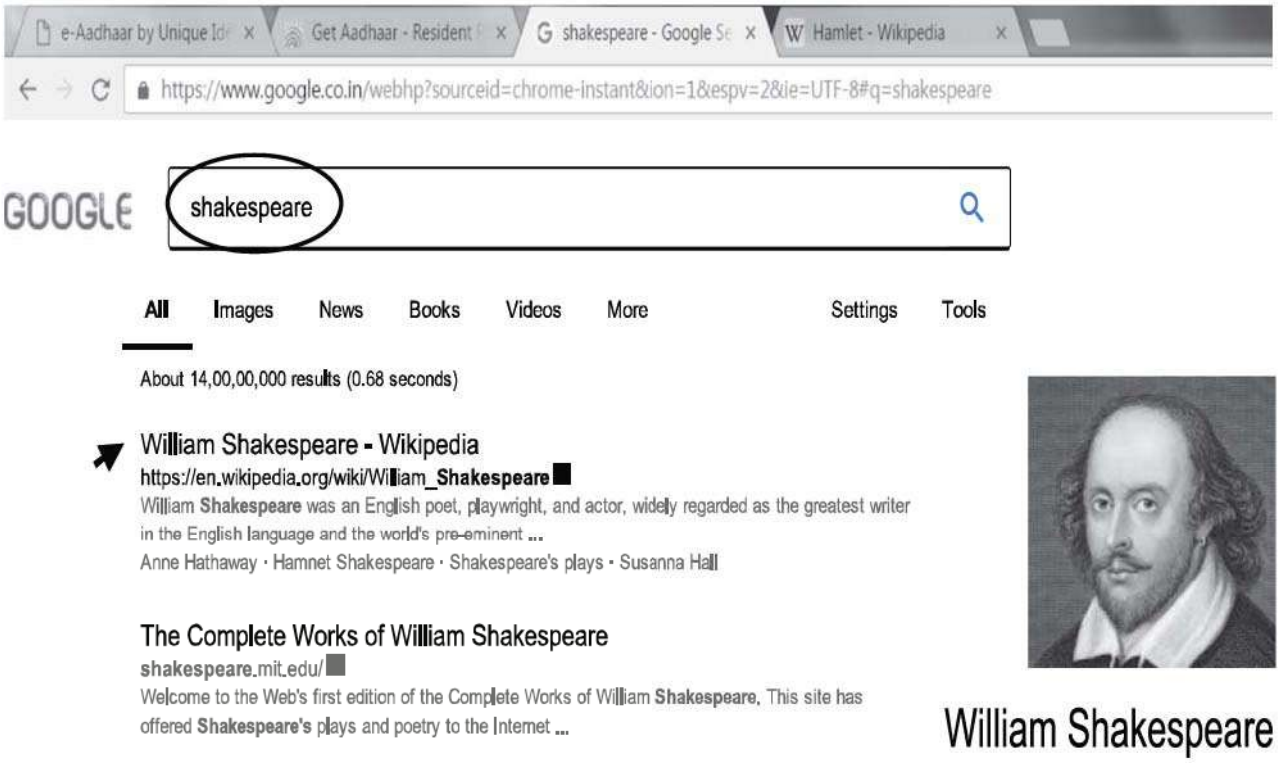
Now, tell Nandan what he should do to read mails and finish the process.

- _____
- _____
- _____
- _____
- _____
- _____

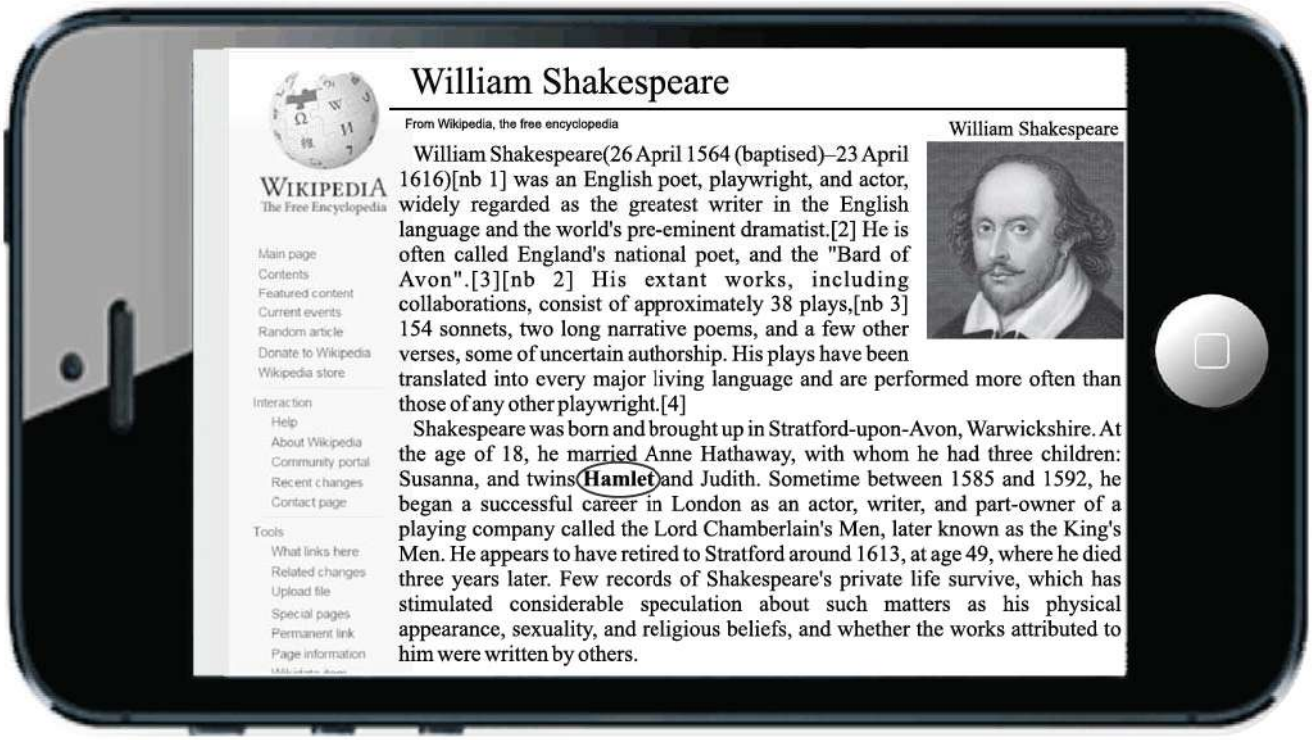
F.4 Rutva wants to have a print out of docs. file which she has received as an attachment in mail. Help her by arranging the steps in a proper order.

- ☐ Open the mail from Inbox
- ☐ Type your mail Id
- ☐ Type your Password
- ☐ Download the attachment
- ☐ Open the mail through Google
- ☐ Select the connected printer
- ☐ Now click on the Print button and have print
- ☐ Open the downloaded attachment
- ☐ Choose the colour/black, format and size of paper
- ☐ Select the required pages you want to have print out
- ☐ Give print command either Ctrl+p or Choose from short out command icon
- ☐ Select the nos.of pages: All, 1-4, current page, etc.

F.5 Let's learn how to seek information on websites by just using appropriate key-words. Here is an example. Suppose you want to collect information about Hamlet- a tragedy written by Shakespeare, go through these screenshots explaining the use of the key words...like Shakespeare. (in lab or home)



Then, search about William Shakespeare through Wikipedia.



William Shakespeare

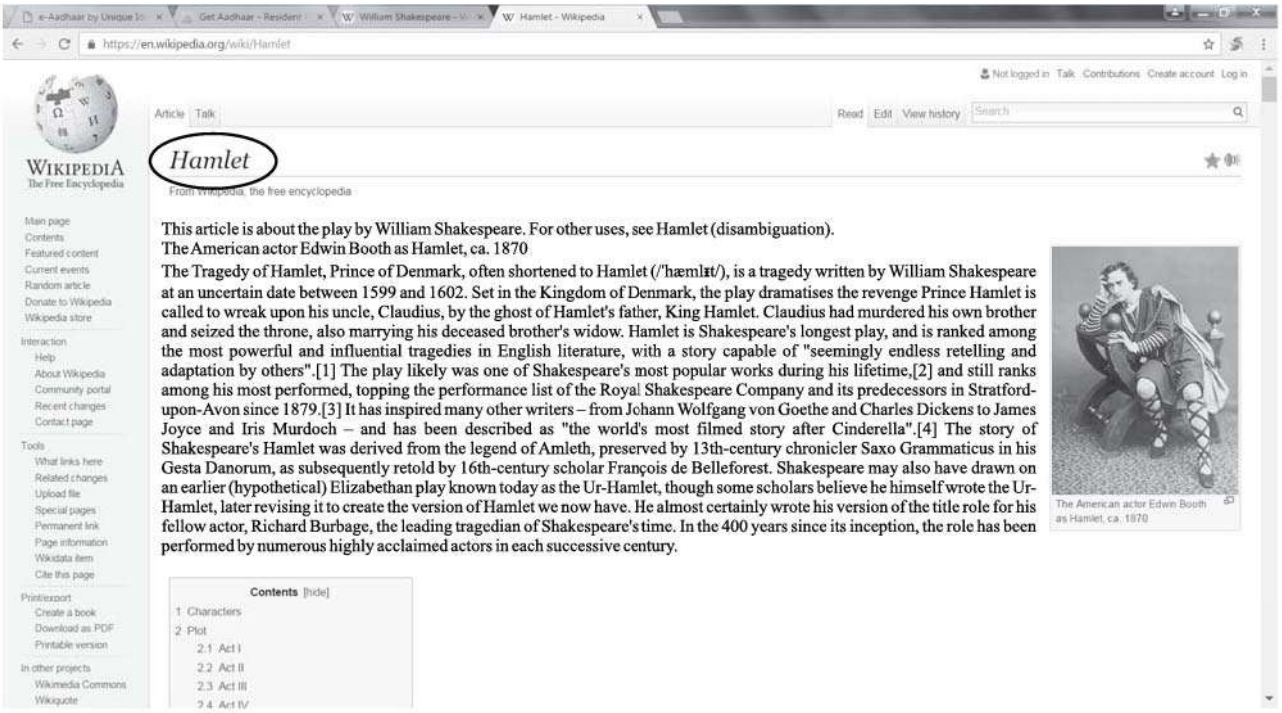
From Wikipedia, the free encyclopedia

William Shakespeare

William Shakespeare(26 April 1564 (baptised)–23 April 1616)[nb 1] was an English poet, playwright, and actor, widely regarded as the greatest writer in the English language and the world's pre-eminent dramatist.[2] He is often called England's national poet, and the "Bard of Avon".[3][nb 2] His extant works, including collaborations, consist of approximately 38 plays,[nb 3] 154 sonnets, two long narrative poems, and a few other verses, some of uncertain authorship. His plays have been translated into every major living language and are performed more often than those of any other playwright.[4]

Shakespeare was born and brought up in Stratford-upon-Avon, Warwickshire. At the age of 18, he married Anne Hathaway, with whom he had three children: Susanna, and twins Hamlet and Judith. Sometime between 1585 and 1592, he began a successful career in London as an actor, writer, and part-owner of a playing company called the Lord Chamberlain's Men, later known as the King's Men. He appears to have retired to Stratford around 1613, at age 49, where he died three years later. Few records of Shakespeare's private life survive, which has stimulated considerable speculation about such matters as his physical appearance, sexuality, and religious beliefs, and whether the works attributed to him were written by others.

Now open the link by clicking on the word Hamlet.



Hamlet

From Wikipedia, the free encyclopedia

This article is about the play by William Shakespeare. For other uses, see Hamlet (disambiguation).

The American actor Edwin Booth as Hamlet, ca. 1870

The Tragedy of Hamlet, Prince of Denmark, often shortened to Hamlet (/ˈhæmlɪt/), is a tragedy written by William Shakespeare at an uncertain date between 1599 and 1602. Set in the Kingdom of Denmark, the play dramatises the revenge Prince Hamlet is called to wreak upon his uncle, Claudius, by the ghost of Hamlet's father, King Hamlet. Claudius had murdered his own brother and seized the throne, also marrying his deceased brother's widow. Hamlet is Shakespeare's longest play, and is ranked among the most powerful and influential tragedies in English literature, with a story capable of "seemingly endless retelling and adaptation by others".[1] The play likely was one of Shakespeare's most popular works during his lifetime,[2] and still ranks among his most performed, topping the performance list of the Royal Shakespeare Company and its predecessors in Stratford-upon-Avon since 1879.[3] It has inspired many other writers – from Johann Wolfgang von Goethe and Charles Dickens to James Joyce and Iris Murdoch – and has been described as "the world's most filmed story after Cinderella".[4] The story of Shakespeare's Hamlet was derived from the legend of Amleth, preserved by 13th-century chronicler Saxo Grammaticus in his Gesta Danorum, as subsequently retold by 16th-century scholar François de Belleforest. Shakespeare may also have drawn on an earlier (hypothetical) Elizabethan play known today as the Ur-Hamlet, though some scholars believe he himself wrote the Ur-Hamlet, later revising it to create the version of Hamlet we now have. He almost certainly wrote his version of the title role for his fellow actor, Richard Burbage, the leading tragedian of Shakespeare's time. In the 400 years since its inception, the role has been performed by numerous highly acclaimed actors in each successive century.

The American actor Edwin Booth as Hamlet, ca. 1870

Contents [hide]

1 Characters
2 Plot
2.1 Act I
2.2 Act II
2.3 Act III
2.4 Act IV

Now follow this example. Make a list of similar key-words and search the information related to the topics given below.

- Speech of Gandhiji during 2nd Round-table Conference
- Theory of Relativity
- Fire ants
- Statue of Socrates and Plato
- Life on Antarctica
- Talks by J. Krishnamurthy
- Photos of the persons mentioned in this textbook

F.6 Complete the dialogue selecting the proper expressions from the brackets.

(click on the hyperlink, clicking a new tab, type www.youtube.com, paste/type the URL of video, type www.keepvid.com, click download, start a new tab, typing sholey-movie in search panel)

Rahil : Hey, kevin. I wanted 'Black' yesterday again. It is an adapting of Helen Keller's life story.

kevin : Great. I want to have it so that I can watch it whenever I wish.

Rahil : Oh. I watched it online. But you can download it from youtube.com.

kevin : Hmmm. But you know my limits. I am not used to serfing on internet and downloading.

Rahil : Dear, just start your internet browser. Then _____in address bar.

Kevin : OK. I can do that. I know this.

Rahil : Then search for the movie by _____.

Kevil : Hmm. Then?

Rahil : _____that shows the movie. The next step is to _____.

Kevin : A new tab?

Rahil : Yes, Parallely you can go to a new screen by _____ where you need to _____in its address bar.

Kevil : What is this website about?

Rahil : You can not download videos from youtube directly. Such websites help you downloaded these videos.

Kevin : Great.

Rahil : On the screen, _____taken/copied from the youtube.com.

Kevin : Then I have to _____.

Rahil : Yes, good going. The movie will be downloaded in your computer.

Kevin : A good learning for me, and I'm happy that the movie 'Black' is at my fingertip. Thanks a lot for all this.

F.7 Open a search engine type key-words like 'top 10 best job portals in India' or 'career websites'. Open a link and apply online for a suitable job.

F.8 Match the commands in A with their corresponding actions in B.

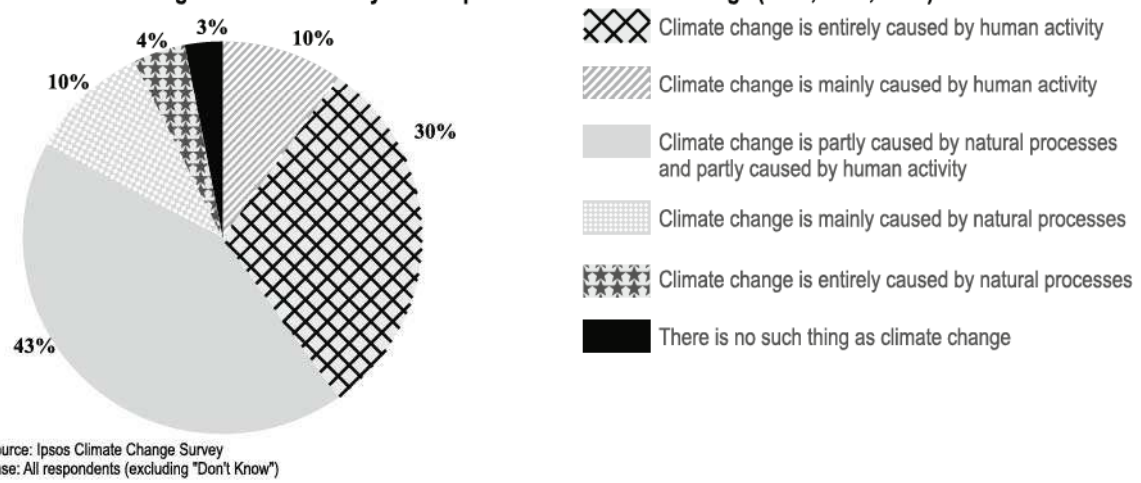
A	B	
1. Visit hyperlink	A. Browsing the file and selecting JPG	( )
2. Download	B. Clicking the selected docs., audio-video files, images using internet	( ) ( )
3. Create Password	C. Clicking the tab and receiving digits in SMS	( )
4. Upload photo	D. Typing the special characters and keys	( )
5. Get OTP	E. Following another text or sites by clicking or tapping	( )
6. Enter security Code	F. Select the file and press Ctrl+C	( )
7. Copy	G. Typing jumbled letters/numbers given as Captcha	( )
8. Search the specific into information in google	H. Typing the keywords in inverted commas	( )

Writing

W. 1 Write a report on how your school celebrated Environment Day. You may use these points:
[place – date – advance preparations – chief guest commencement - activities – speech – your resolution]

W. 2 Explain the pie-chart given below in 10 lines:

Figure: Human activity/natural processes as climate change (2010, 2012, 2014)



Source: Ipsos Climate Change Survey
Base: All respondents (excluding "Don't Know")

W.3 Which best describes your opinion about the causes of change?

W.4 Prepare a speech of 5 minutes to be delivered on 'The World Environment Day'.

Activity

A.1 Organize a 'Best out of Waste' competition in your class. Focus on plastic i.e. empty bottles, used tooth brush, empty food packets etc.

A.2 Put a collection box for used pen in your class. Prepare a showcase piece out of collected pens.

Project

Visit a nearby vegetable market. Study how thin (less than 40 micron) plastic is used. List disadvantages of such plastic. Find the ways out. Make a nice pamphlet and get a few copies. Collect some money and buy cloth bags. Go to the market. Talk to people. Gift them cloth bags. Convince them not to use plastic bags.

*****

NOTES