

**ACORNSOFT EDUCATION**

# Tree of Knowledge

for the BBC Microcomputer Model B





# **ACORNSOFT**

## **Tree of Knowledge**

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## Loading the Main Program

To load and run the program place the cassette in the cassette recorder, type CHAIN "TREE"

and press RETURN; the "Searching" message should appear on the screen as you do this. Now press the PLAY button on the cassette recorder and wait for the program to load. The title page will load in less than one minute and the main program will take a further five minutes to load. When loading is complete the first ('start-up') menu of the program is displayed.

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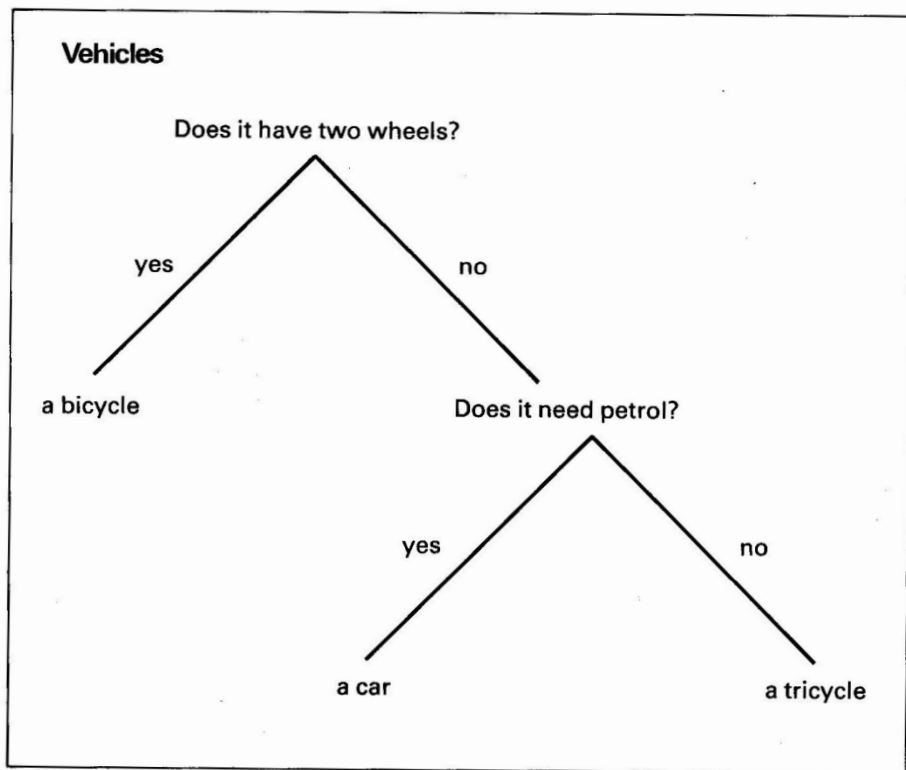
### Acknowledgement

This program was inspired by an idea from ESM, Educational Software for Microcomputers.

# Introduction

The Tree of Knowledge is designed to introduce children to using computers for the storage of information and its retrieval. For simplicity the program is restricted to simple objects within a specified subject. For example, if the subject were "plants" the objects could be 'a dandelion' and 'an apple tree'.

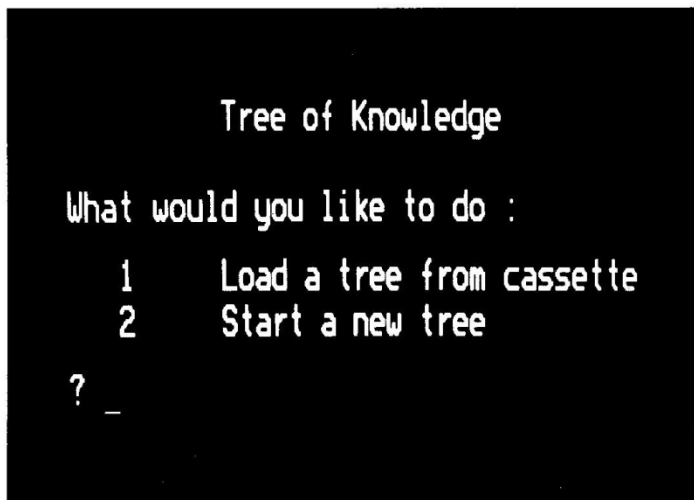
New objects are introduced to the program by means of a simple guessing game, using questions which can be answered with 'yes' or 'no'. With each new object the user supplies a question which will distinguish that object from those already known about. Because at every stage the answer to a question can be 'yes' or 'no' the database can be represented as a 'tree'. The question at every node has two branches, one for a 'yes' answer and one for a 'no' answer, and the objects are at the tips of the branches:



A feature of the program is that the tree can be printed out, or displayed on the screen so that the structure can be seen very simply.

There are two files provided on this cassette – with the help of a teacher, young children of primary school age can play guessing games with the computer using the tree called "FRUIT". The more serious application, "CLASS" is suitable for 'A' level biology students.

# The Start-Up Menu



The start-up menu gives these options:

## 1 Load a tree from cassette

This loads a tree already saved on cassette. It could be one of the two demonstration trees supplied after TREE on this cassette, or one saved from your own use.

## 2 Start a new tree

This option is chosen to create a tree on a new subject.

Type 1 or 2 to select the option, followed by RETURN.

## 1 Load a tree from cassette

You will be prompted with:

Which tree would you like loaded?  
(Please type in the filename)

Make sure the appropriate cassette is in the cassette recorder, and, if you know the whereabouts of the file in question, that it is wound on to the right place.

Type in the filename, for example

: FRUIT

and press RETURN. The usual 'Searching' message is displayed on the screen, and you should press PLAY on the recorder and then wait for the file to load.

Once the file has been loaded the main menu is displayed.

## **2 Starting a new tree**

If you select this option the program will prompt:

What do you wish to call this new tree?

The title you choose can be up to 20 letters long, and describes the subject that the computer is to learn about. For example,

plants  
rocks  
apes  
drinks  
furniture  
countries  
vehicles

Type in the title and press RETURN. As our example, we will choose 'Vehicles', so we type

: VEHICLES

The computer then checks:

VEHICLES

Are you happy with this title?

Reply with Y or Yes, N or No. It will then ask

VEHICLES

What is the singular of vehicles?

A

and we type

: A VEHICLE

The singular can be up to 20 letters long (counting spaces). This question overcomes the problem of irregular singulars; for example, if the subject is 'furniture' the singular could be given as 'A piece of furniture'

The computer now needs to know two objects to start the tree, so it will ask

Please enter a VEHICLE

and we could type:

: BICYCLE

and to:

Please enter another VEHICLE

we could type:

: CAR

Then the computer will print

Please give me a question to tell the difference between a BICYCLE and a CAR.

The question should be one that needs a yes/no answer. Suitable questions in this case could be:

: DOES IT HAVE TWO WHEELS?

: DOES IT NEED PETROL?

: CAN IT BE LIFTED BY A MAN?

Assuming we gave the first question, the computer asks:

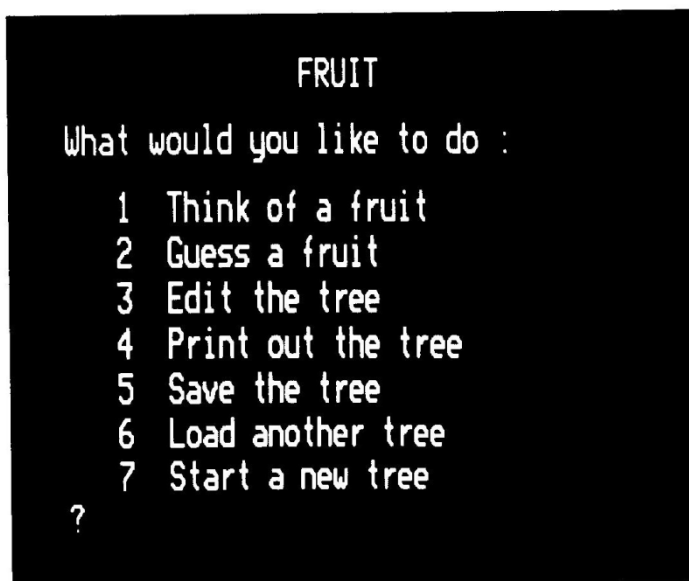
DOES A BICYCLE HAVE TWO WHEELS?

to which the answer is obviously Y (or Yes).

Now the computer is ready to try and guess objects that the user is thinking of.



# The Main Menu



Select the number corresponding to your choice and press RETURN.

For the examples that follow we have used the FRUIT tree supplied on this cassette.

## 1 Think of a fruit

In this game the computer first checks that you have thought of a fruit, saying  
Are you thinking of a fruit?

and then, (assuming your answer to be 'Yes') tries to guess which fruit you are thinking of. It does this by asking the questions it has in memory, in a logical order.

The first question might be:

Does it have a stone?

If you answer yes, the next question might be:

Does it have a smooth skin?

Eventually the computer will have a guess; if it guesses correctly, the game starts again, and the computer asks you to think of another fruit.

If it does not guess what you were thinking of, it says

What fruit were you thinking of?

Type in the name of the fruit you had in mind. If the fruit you were thinking of is already on the tree the computer may appear unwilling to accept defeat! It will probably say

That fruit is already on the tree

and ask you to try again. You can **ESCAPE** at this point if needed. The other possibility is that the fruit is not on the tree; suppose, for example, the computer didn't know about greengages, and its last guess was

Is it a gooseberry?

to which you replied, 'No' (because you were thinking about a greengage). The computer says

What fruit were you thinking of?

To which you reply 'greengage'. The computer then asks;

Please give me a question to tell the difference between a greengage and a gooseberry.

Once you have provided a question, the game can then proceed with the computer again guessing the fruit.

## **2 Guess a fruit**

In this game it is you who has to do the guessing! The computer randomly chooses one of the objects in the tree and then finds all questions leading up to it. This takes a few seconds. Then it chooses the questions at random (without repetition) displaying a question and telling you the answer as it should be for the fruit it is 'thinking of'; for example,

The answer to the question

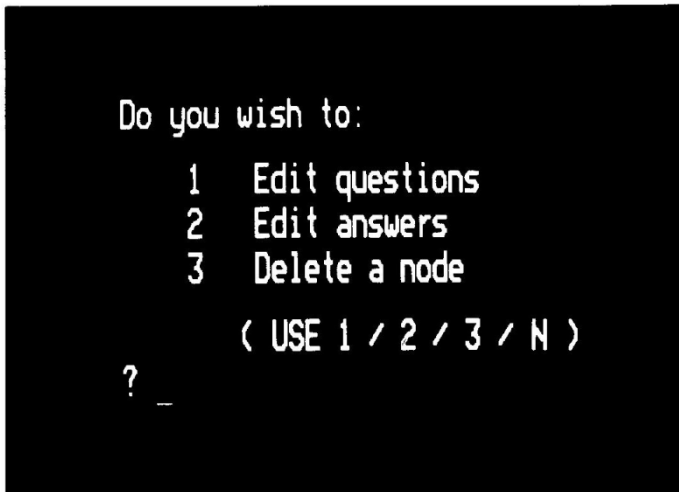
Is it furry?

is Yes

Your guess is?

If you guess correctly, it says 'correct' before returning to the main menu. If you guess wrongly it displays the next question and answer, and this continues until it runs out of questions. Finally it tells you what it was thinking of.

### 3 Edit the tree



#### *Editing questions and answers*

Editing questions and answers is very simple. If you select 1 or 2 from the menu shown above, the computer displays all the questions and answers in batches of four at a time, and gives you the option of changing the question or answer that is wrong.

After each correction, press RETURN and the program will take you back to the editing menu.

#### *Deleting a node*

If you select option 3 the computer displays 3 'nodes' of the tree at a time. A node in this case is a question, and is so-called because it is a point from which two branches stem. When you delete a node, one of its branches must go, and so when you have chosen a node to delete, the computer shows you the branches stemming from it, and says

Do you want to delete the Y or the N branch (use Y or N)?

NOTE: It is not possible to delete the first question in the tree (called the Root) and so you are not given the option.

Selecting N takes you back to the main menu.

## **4 Print out/display the tree**

If you choose this option you are first asked;

Do you wish to list the whole tree?

If you answer Yes, the computer then asks

Shall I print to printer?

'Yes' will output the tree to the printer, and 'No' will simply list the tree on the screen using different colours to distinguish between questions and objects. If you choose to display or print out only part of the tree, the questions are shown on the screen and you select the question from which you wish to start printing.

Press the SHIFT key to move on to the next page.

If output is to the screen only, you have to press ESCAPE to return to the main menu.

## **5 Save the tree**

If you ask to save the tree, the computer will ask you;

What name shall I give to the file?

Type in the filename and press RETURN. The usual

RECORD then RETURN

cassette operating message is displayed.

When the file has been saved, you are returned to the main menu.

## **6 Load another tree**

If you choose this option you will be returned safely to the operations of the start-up menu.

## **7 Start a new tree**

See the section under 'Start-up menu'.







