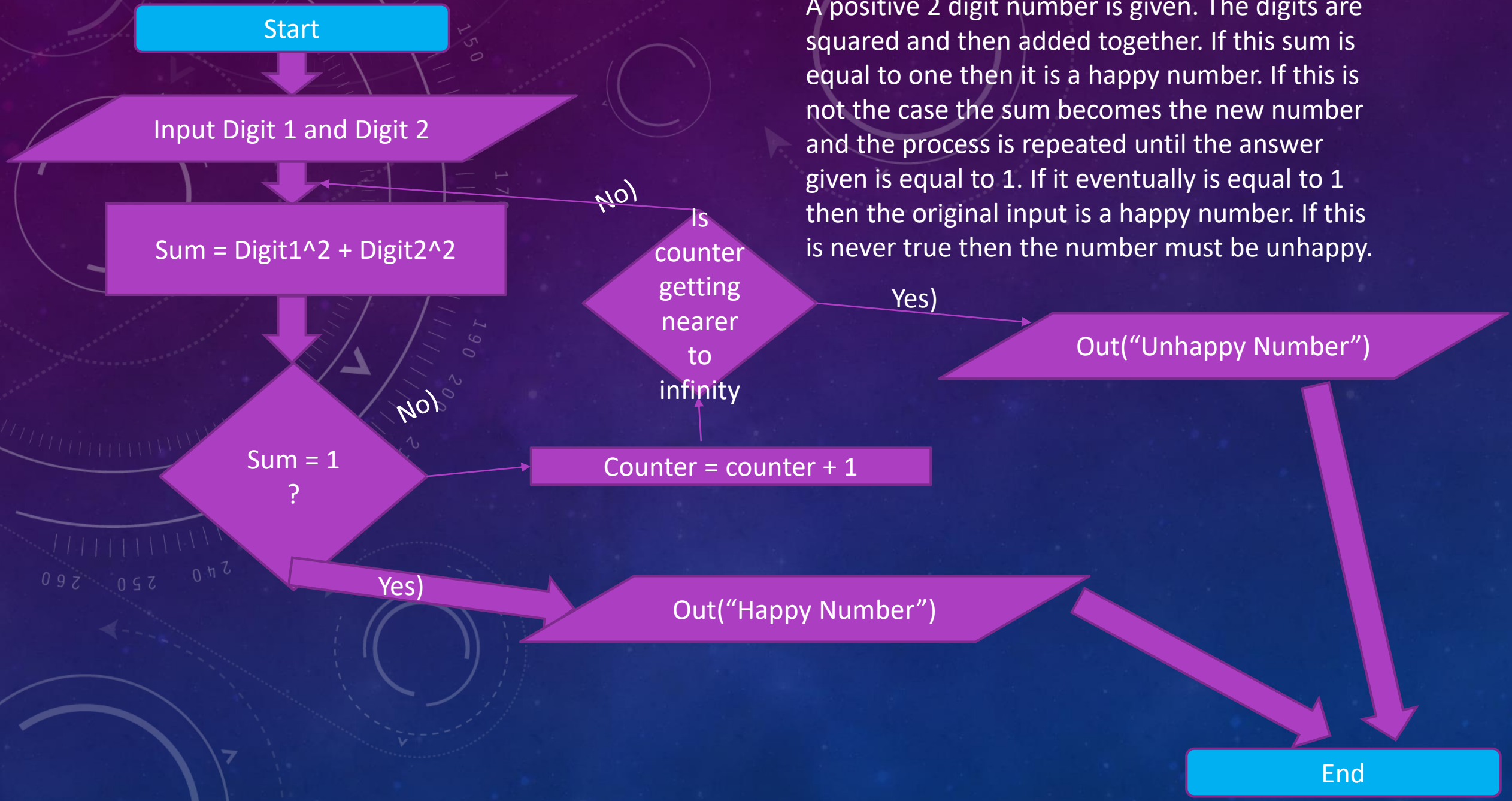
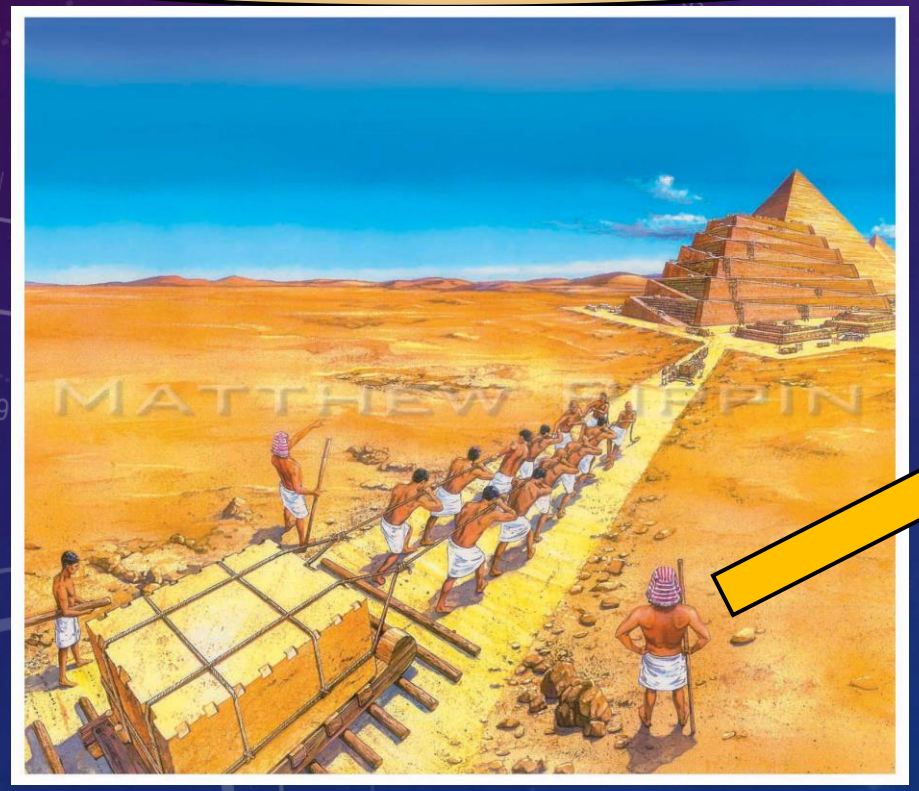
HAPPY AND SAD NUMBERS



A positive 2 digit number is given. The digits are squared and then added together. If this sum is equal to one then it is a happy number. If this is not the case the sum becomes the new number and the process is repeated until the answer given is equal to 1. If it eventually is equal to 1 then the original input is a happy number. If this is never true then the number must be unhappy.

THE CALCULATION OF HAPPY NUMBERS WITH A MULTICORE PROCESSOR?

A multicore processor can make use of multiple internal processors within an integrated chip (a CPU). Therefore multiple cores can carry out different instructions simultaneously and a task can be completed in less time than a single core processor.



"I can make use of multiple slaves to execute my instructions. I want a pyramid built now!"

THE CALCULATION OF HAPPY NUMBERS WITH A MULTICORE PROCESSOR?

I only have the one set of limbs. This pyramid will take years

A single core processor has to run each instruction consecutively and wait until it has been executed before it can begin on the next.

In context: Only certain parts of the calculation of a happy number can be separated and worked on by multiple cores. For instance, once the digits of the input are separated. Two cores can be assigned the task of squaring the digits, each core can be responsible for squaring a digit. This part of the task can be executed far quicker than a single core could. However… the results must be added together again and so only one core can be utilised for this. Throughout the program the multiple cores will not be used continuously as not all instructions can make use of sharing the CPUs ressources.