MSIS 638

Case 2.3c

Jia Liang Ma

1. Search for “algorithm” on the internet. Describe in your words what an algorithm is.

An algorithm is the list of instructions and rules that a computer needs to do to complete a task. In my point of view, algorithm is a solution for some scenarios, figuring the problem step by step. In computing, algorithm provides computer with a successive guide to completing actions. For different purposes, different instructions for that cases will be outline and make for exactly how to solve that case.

1. Watch the following video for simple examples of algorithm represented by flowcharts.
2. Following the examples in the video, **draw a flowchart** and **write the corresponding algorithm** for **each** of the following cases:
   1. Calculating the volume of a sphere
   2. Figuring out if a number is prime.
   3. Reversing a word (e.g., “water” 🡪 “retaw”)
3. Start 🡪 Input the radius🡪 Read the radius, r 🡪 Initialize the floating-point pi (π) for 3.14 🡪 Volume = 4/3\*π\*r ³ 🡪 Write the volume of sphere 🡪 Stop

Flowchart

Read the radius, r.

Start

Volume= 4/3\*pi\*r³.

Write the volume.

Stop

1. Start 🡪 Input the number n🡪 Read n 🡪 Is n prime number? 🡪 If n 1, return false.

🡪 If n %2 =0, return false.

🡪 Otherwise, return true. 🡪 Stop

Flowchart

If n %2 =0

Otherwise, return true.

False

If n 1

Read n

Start

Stop

False

1. Start 🡪 Input A 🡪 Read A 🡪 Split each letter of A 🡪 Reverse and array the letters of A 🡪 Output 🡪 Stop

Flowchart

Stop

Output

Reverse and array the letter of A

Split each letter of A

Read A

Start