First Attempt

Search a number a given List

Is a1 equal to Key?

Is a2 equal to Key?

.

.

Is an equal to Key?

Problem with this attempt?

Specific –

What do we do if a1 or a2 or any such is equal to Key or not equal to Key?

Means we require a Primitive to express a condition.

If condition Then operation

Else operation

And one primitive for Looping say Repeat

or

while something

do something

Second Attempt

START

If ai equals the key

Then write Key ,”found at location”,i

Stop

Else Increment i

Repeat

END OF ALGORITHM

Problem …? << initialization>>

Third Attempt

START

Read size of List , n

Read the List a1,a2,….,an and the Key

Set i to 1

Set found to false

While (the Key has not been found and i<=n)

If ai equals Key

Then set found to True

Else increment i

End of While Loop

If key was found

Then write “ Value was found at location”, i

Else write “ Value was not found ”

Stop

END OF ALGORITHM

<< some more addition to be done for >>

1. What if a particular value is duplicated in the list? Are we going to search all or just the first one
2. What if a certain data is invalid
3. Off by 1 error?? I<=n

Structured English Algorithm primitives