

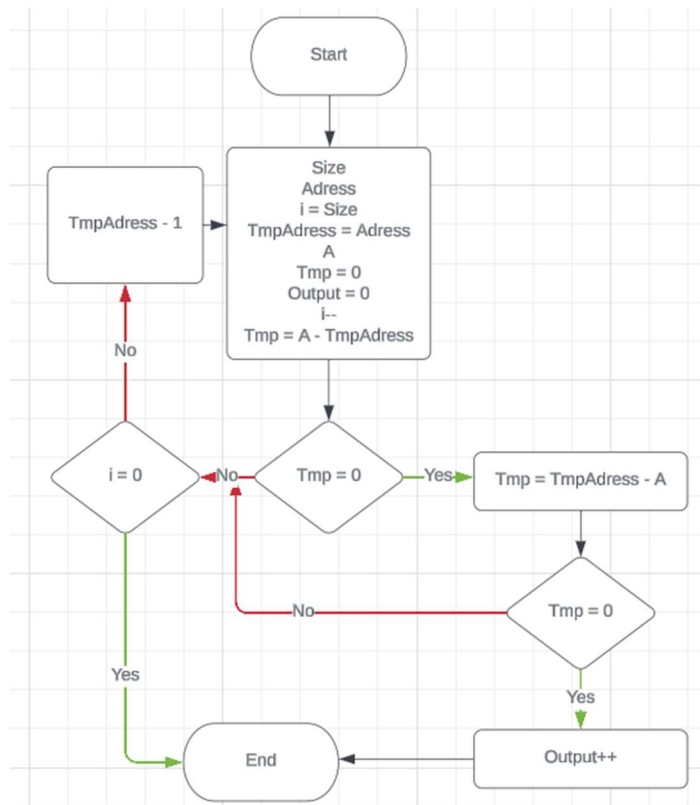
# Johnny – Vector Program

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## 1. Task:

Create a program in Johnny to handle vectors. It will be checking if a number occurs in the vector.

## 2. Flowchart:



## 3. Solution:

024				
Adr	Hi	Lo	Asm	Opnd
000:	09	024	NULL	024
001:	09	025	NULL	025
002:	01	027	TAKE	027
003:	04	026	SAVE	026
004:	08	026	DEC	026
005:	01	023	TAKE	023
006:	03	028	SUB	028
007:	04	024	SAVE	024
021:	07	010	INC	010
022:	05	004	JMP	004
023:	00	002		
024:	00	000		
025:	00	001		
00 000				

025					
Adr	Hi	Lo	Asm	Opnd	^
009:	05	017	JMP	017	
010:	01	029	TAKE	029	
011:	03	023	SUB	023	
012:	04	024	SAVE	024	
013:	06	024	TST	024	
014:	05	017	JMP	017	
015:	07	025	INC	025	
016:	10	000	HLT	000	
023:	00	002			
024:	00	000			
025:	00	001			
026:	00	002			
027:	00	004			
00 001					

016					
Adr	Hi	Lo	Asm	Opnd	^
017:	06	026	TST	026	
018:	05	020	JMP	020	
019:	10	000	HLT	000	
020:	07	006	INC	006	
021:	07	010	INC	010	
022:	05	004	JMP	004	
023:	00	002			
024:	00	000			
023:	00	002			
024:	00	000			
025:	00	001			
026:	00	002			
027:	00	004			
10 000					

The program mainly uses subtraction and result verification to compare numbers for similarity. In each iteration, it starts by decrementing the counter i. Then, it compares two numbers by performing subtraction operations. First, it subtracts A from the current value in the vector, and then it subtracts the current value in the vector from A. If both results are zero, it indicates that the value is present in the vector. If at least one of the subtraction results is not zero, the program moves on to check the next value in the vector.