

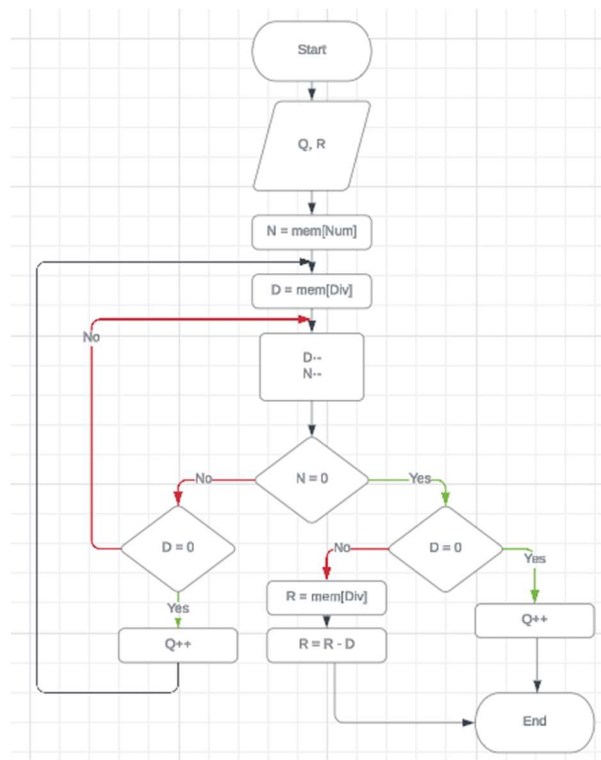
# Johnny – Division Program

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### 1. Task:

Create a program in Johnny to do division of two numbers.

### 2. Flowchart:



### 3. Solution:

- First set addresses 024 and 025 to 0

025				
Adr	Hi	Lo	Asm	Opnd
000:	09	024	NULL	024
001:	09	025	NULL	025
002:	01	022	TAKE	022
003:	04	026	SAVE	026
004:	01	023	TAKE	023
005:	04	027	SAVE	027
006:	08	027	DEC	027
007:	08	026	DEC	026
022: 00 000				
023: 00 000				
024: 00 000				
025: 00 000				
026: 00 000				
00 000				

- Then take 022 and save it into 026 and also take 023 and save it into 027

023				
Adr	Hi	Lo	Asm	Opnd
000:	09	024	NULL	024
001:	09	025	NULL	025
002:	01	022	TAKE	022
003:	04	026	SAVE	026
004:	01	023	TAKE	023
005:	04	027	SAVE	027
006:	08	027	DEC	027
007:	08	026	DEC	026
023:	00	000		
024:	00	000		
025:	00	000		
026:	00	000		
027:	00	000		
00 000				

- Decrement addresses 027 and 026

026				
Adr	Hi	Lo	Asm	Opnd
001:	09	025	NULL	025
002:	01	022	TAKE	022
003:	04	026	SAVE	026
004:	01	023	TAKE	023
005:	04	027	SAVE	027
006:	08	027	DEC	027
007:	08	026	DEC	026
008:	06	026	TST	026
024:	00	000		
025:	00	000		
026:	00	000		
027:	00	000		
028:	00	000		
00 000				

- Check if 026 is 0, if no then jump to the address 014, if yes check if 027 is 0 and if yes then program goes to the next instruction
- Increment 024 and ends the program but if no jump to the 018 and there take 023, subtract it with 027 and save it into 025 where is our remainder and then program ends
- Check if 027 is 0 if no jump to the address 006 and loop goes on and on but if yes increment address 024 and jump into 004

024				
Adr	Hi	Lo	Asm	Opnd
006:	08	027	DEC	027
007:	08	026	DEC	026
008:	06	026	TST	026
009:	05	014	JMP	014
010:	06	027	TST	027
011:	05	018	JMP	018
012:	07	024	INC	024
013:	10	000	HLT	000
024:	00	001		
025:	00	000		
026:	00	000		
027:	00	000		
028:	00	000		
00 001				