FLOW CHART
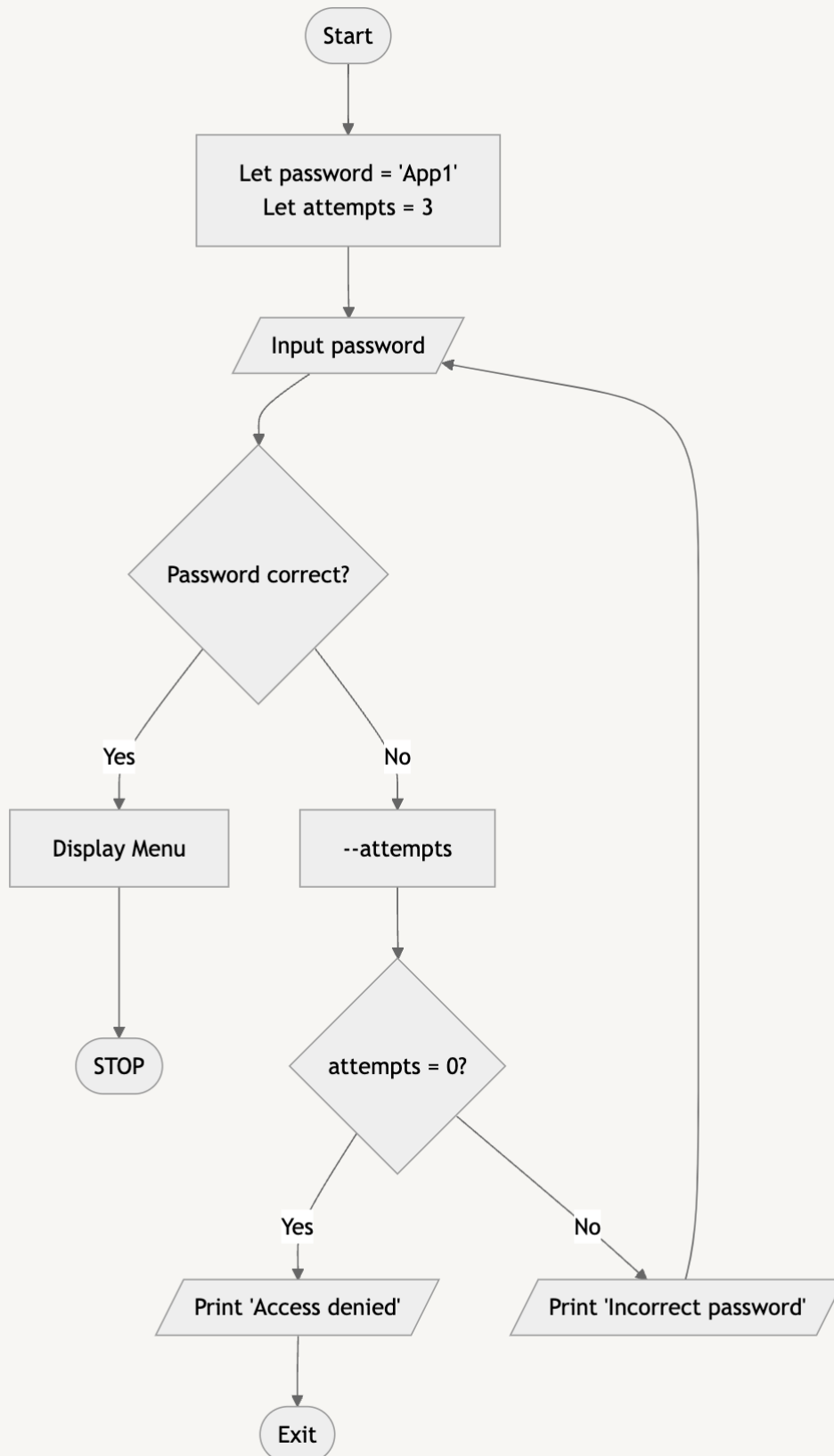
Group 27

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Password Entry

Start

Let password = 'App1'
Let attempts = 3

Input password

Password correct?

Yes → Display Menu → STOP

No → --attempts

attempts = 0?

Yes → Print 'Access denied' → Exit

No → Print 'Incorrect password' → Input password

Menu Selection

Start

Display Menu

Input choice

Choice = A?

No

Choice = B?

No

Choice = C?

Yes

Yes

Yes

No

Execute Task1

Execute Task2

Execute Task3

Print 'Invalid choice'

Stop
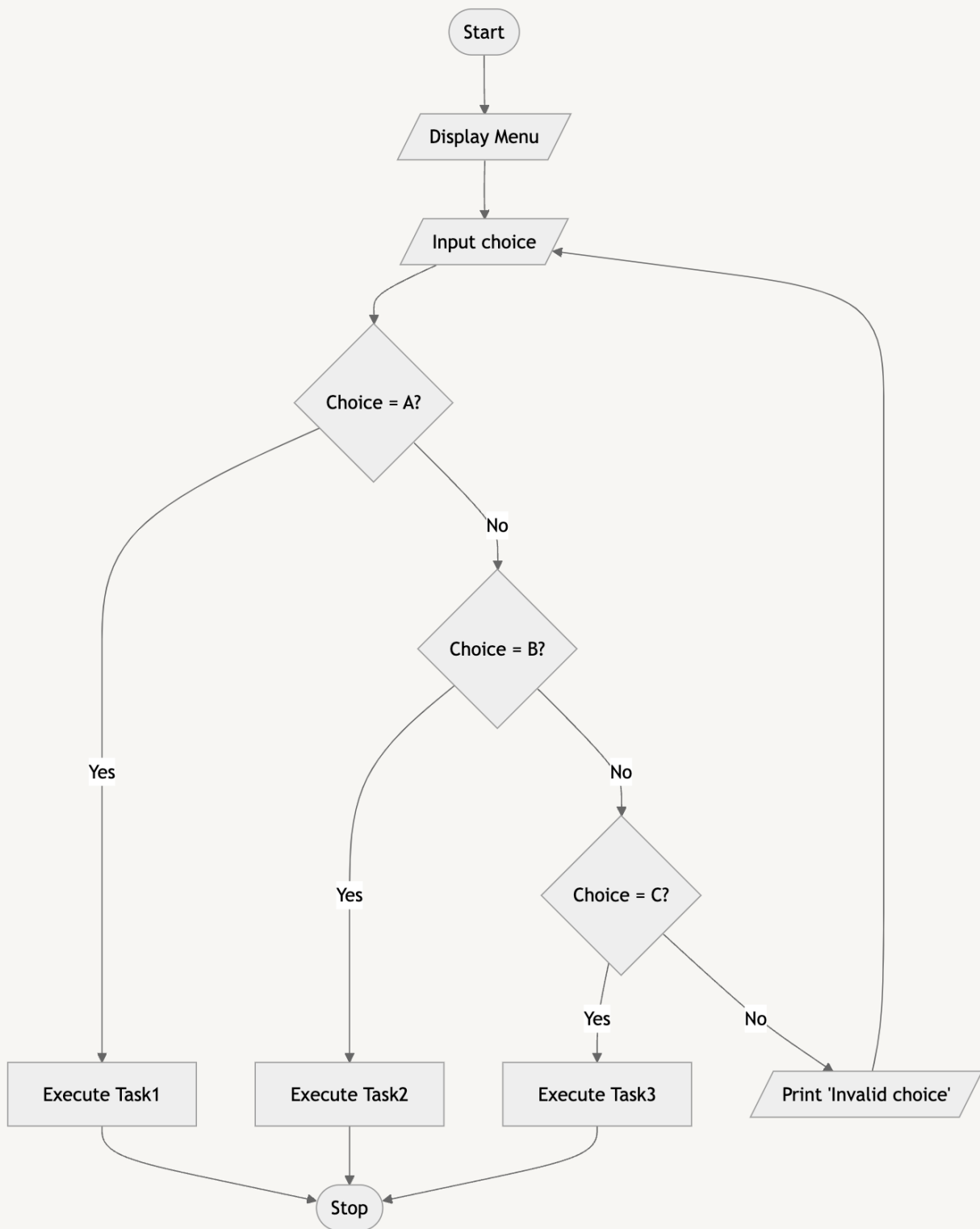
Task 1: Triangular Numbers

```
                          ┌─────────┐
                          │  Start  │
                          └─────────┘
                               │
                               ▼
                  ┌───────────────────────────┐
                  │    Let even_count = 1      │
                  │    Let odd_count = 1       │
                  │       Let n = 1           │
                  └───────────────────────────┘
                               │
                               ▼
                  ┌───────────────────────────┐
                  │   Input range start, end  │
                  └───────────────────────────┘
                               │
                               ▼
                  ┌───────────────────────────┐
                  │   tri_num = n * (n + 1) / 2│◄──────────┐
                  └───────────────────────────┘           │
                               │                          │
                               ▼                          │
                         ╱ Is tri_num ╲                   │
                        ╱   > end?     ╲                  │
                        ╲              ╱                  │
                         ╲            ╱                   │
                    Yes  ╱            ╲  No               │
           ┌────────────┘              └──────────┐       │
           ▼                                      ▼       │
  ┌──────────────────┐                    ╱ Is tri_num ╲  │
  │ Display results  │                   ╱   >= start?  ╲ │
  └──────────────────┘                   ╲              ╱ │
           │                              ╲            ╱  │
           ▼                               Yes ╲      ╱   │
  ┌──────────────────┐                         ▼        │
  │ Prompt to        │                   ╱ Is tri_num ╲ │
  │ continue         │                  ╱   even?      ╲│
  └──────────────────┘                  ╲              ╱
           │                       Yes ╱ ╲   No
           ▼                   ┌───────┘   └────────┐
     ╱ Continue? ╲            ▼                     ▼
     ╲          ╱    ┌─────────────────┐  ┌──────────────────┐
  Yes ╲        ╱ No  │ even_product =  │  │ odd_product =    │
      ▼        ▼     │ even_product *  │  │ odd_product *    │
┌──────────┐ ┌──────┐│ tri_num         │  │ tri_num          │
│ Return to│ │Display│└─────────────────┘  └──────────────────┘
│main menu │ │'Bye!' │         │                   │
└──────────┘ │& exit │         └────────┬──────────┘
      │      └──────┘                   ▼
      │         │              ┌──────────────────┐
      └────┐ ┌──┘              │ Display tri_num  │
           ▼ ▼                 └──────────────────┘
        ┌──────┐                       │
        │ Stop │                       ▼
        └──────┘                   ┌───────┐
                                   │  ++n  │
                                   └───────┘
```
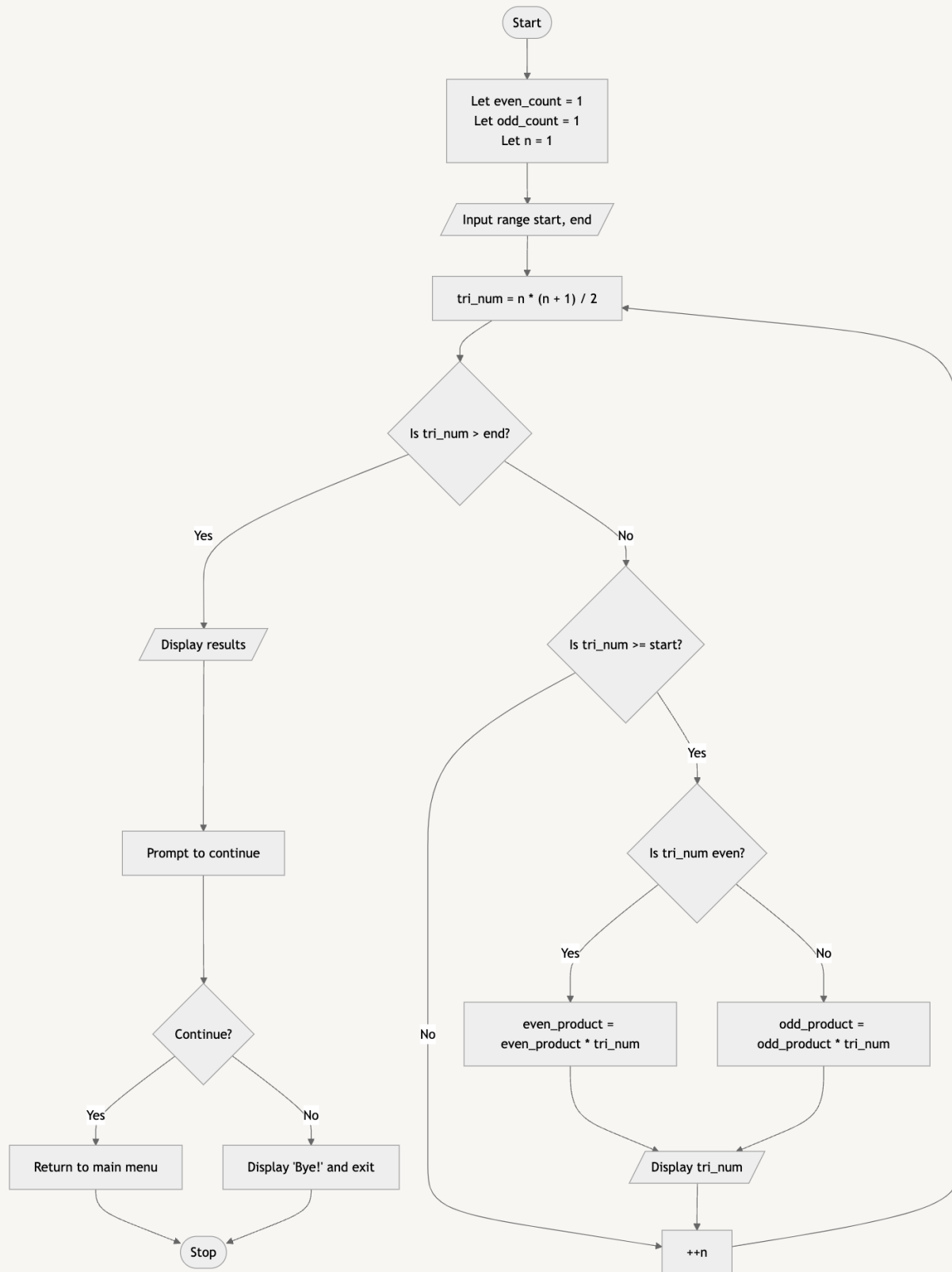
Task 2: Successive Products

Start

Input
start number, count, x

Let i = 0

i < count?

Yes

product = start * (start + 1)

Is x divisible by product?

Yes

Display product (True)

No

Display product (False)

++start

No

Prompt to continue

Continue?

Yes

Return to main menu

No

Display 'Bye!' and exit

Stop

++i
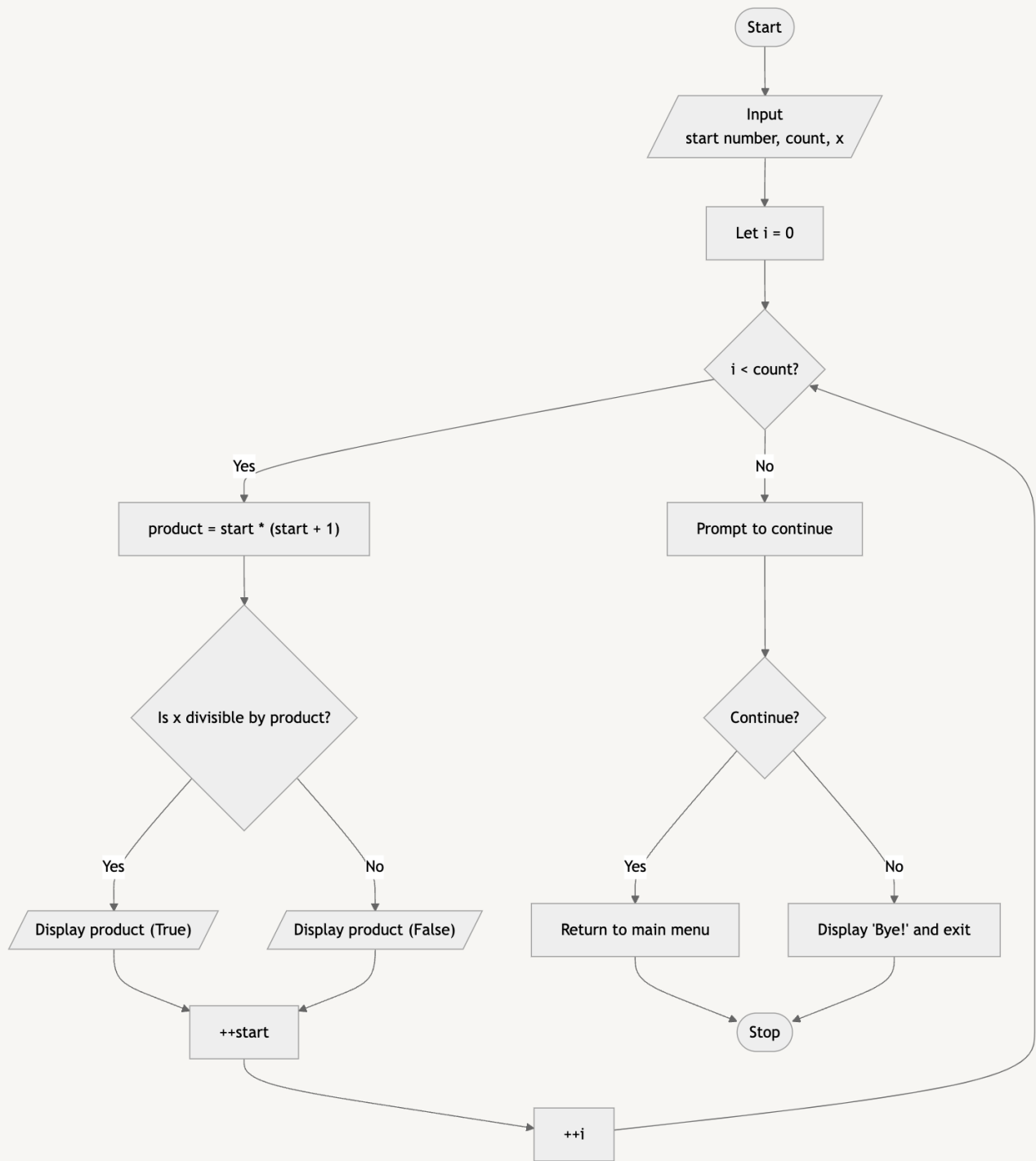
Task 3: Sequence Calculation

Start

Input a, b, c,
and range n1, n2

Let first_term = 0
Let last_term = 0
Let n = n1

Is n <= n2?

Yes

term = an^3 + bn + c

Display term

Is n == n1?

Yes → first_term = term

No → last_term = term

++n

No

product = first_term *
last_term

Display product

Is product divisible by 4?

Yes → 'Product is a multiple of 4'

No → 'Product is not a multiple of 4'

Prompt to continue

Continue?

Yes → Return to main menu

No → Display 'Bye!' and exit

Stop