

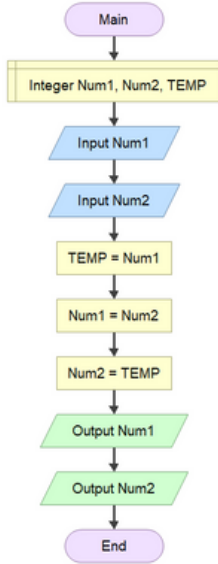
Exercise 1: Write an algorithm and a flowchart to find Simple Interest.

	Algorithm Flowchart
<p>P : Principle Amount N : Time in Years R : % Annual Rate of Interest SI : Simple Interest Step-1 Start Step-2 Input value of P , N, R Step-3 $SI = (P \times N \times R) / 100$ Step-4 Display SI Step-5 Stop</p>	<pre> graph TD Main([Main]) --> Decl[Integer P, N, R, SI] Decl --> InputP[/Input P/] InputP --> InputN[/Input N/] InputN --> InputR[/Input R/] InputR --> Process[SI = (P * N * R) / 100] Process --> OutputSI[/Output SI/] OutputSI --> End([End]) </pre>

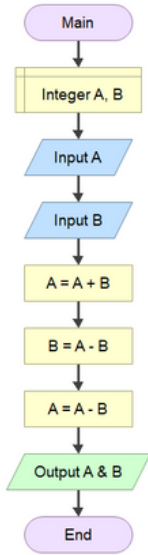
Exercise 2: Write an algorithm and a flowchart to find Compound Interest. Algorithm Flowchart

	Algorithm Flowchart
<p>P : Principle Amount N : Time in Years R : % Annual Rate of Interest CI : Compound Interest Step-1 Start Step-2 Input value of P,N,R Step-3 $CI = P(1+R/100)^N - P$ Step-4 Display CI Step-5 Stop</p>	<pre> graph TD Main([Main]) --> Decl[Real P, N, R, CI] Decl --> InputP[/Input P/] InputP --> InputN[/Input N/] InputN --> InputR[/Input R/] InputR --> Process[CI = P*(1+R/100)^N - P] Process --> OutputCI[/Output CI/] OutputCI --> End([End]) </pre>

Exercise 3: Write an algorithm and a flowchart to swap two numbers with temporary variable.

Algorithm Flowchart	
<p>Step-1 Start Step-2 Input Two Numbers Say NUM1, NUM2 Step-3 Display Before Swap Values NUM1, NUM2 Step-4 TEMP = NUM1 Step-5 NUM1 = NUM2 Step-6 NUM2 = TEMP Step-7 Display After Swap Values NUM1, NUM2 Step-8 Stop</p>	 <pre> graph TD Main([Main]) --> Decl[Integer Num1, Num2, TEMP] Decl --> In1[/Input Num1/] In1 --> In2[/Input Num2/] In2 --> Temp[TEMP = Num1] Temp --> Num1[Num1 = Num2] Num1 --> Num2[Num2 = TEMP] Num2 --> Out1[/Output Num1/] Out1 --> Out2[/Output Num2/] Out2 --> End([End]) </pre>

Exercise 4: Write an algorithm and a flowchart to swap two numbers without temporary variable.

Algorithm Flowchart	
<p>Step-1 Start Step-2 Input Two Numbers Say A,B Step-3 Display Before Swap Values A, B Step-4 A=A+B Step-5 B=A-B Step-6 A=A-B Step-7 Display After Swap Values A, B Step-8 Stop</p>	 <pre> graph TD Main([Main]) --> Decl[Integer A, B] Decl --> InA[/Input A/] InA --> InB[/Input B/] InB --> Aplus[A = A + B] Aplus --> Bminus[B = A - B] Bminus --> Aminus[A = A - B] Aminus --> Out[/Output A & B/] Out --> End([End]) </pre>

Exercise 5: Write an algorithm and a flowchart to find the largest of two numbers.

Step-1 Start

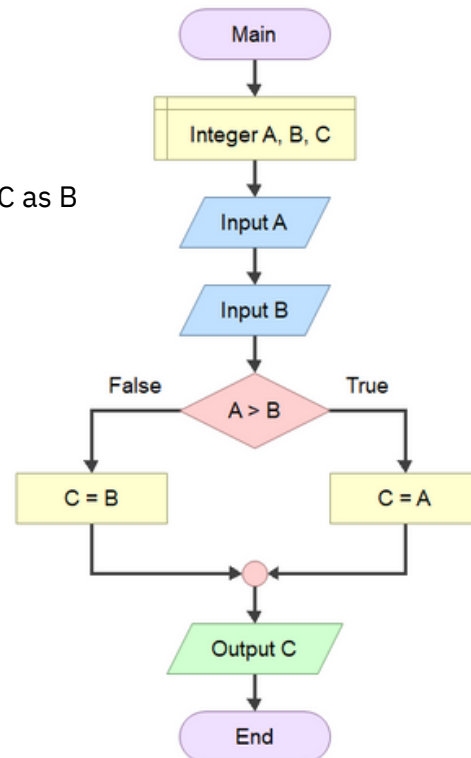
Step-2 Integer = A, B, C

Step-3 Input Numbers say A, B

Step-4 If $A > B$ is True, store C as A otherwise, return C as B

Step-5 Display C value

Step-6 Stop



Exercise 6: Write an algorithm and a flowchart to find the largest of three numbers.

Step-1 Start

Step-2 Integer = A, B, C

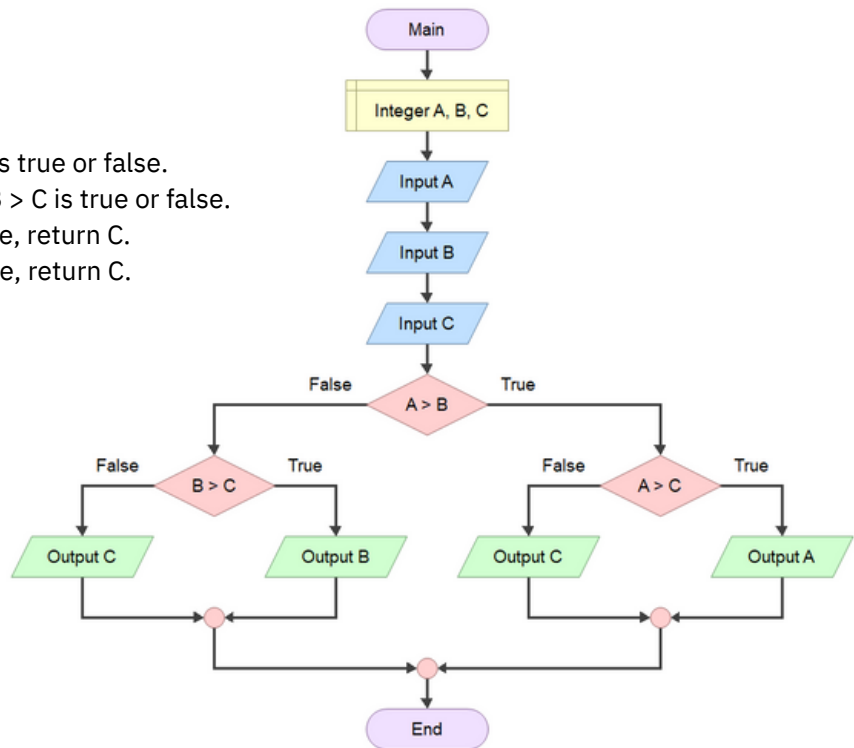
Step-3 Input Numbers say A, B, C

Step-4 If $A > B$ is true, check if $A > C$ is true or false.
If $A > B$ is false then check if $B > C$ is true or false.

Step-5 If $A > C$ is true, return A, if false, return C.

If $B > C$ is true, return B, if false, return C.

Step-6 Stop



Exercise 7: Write an algorithm and a flowchart to find even numbers between 1 to 50.

Step-1 Start

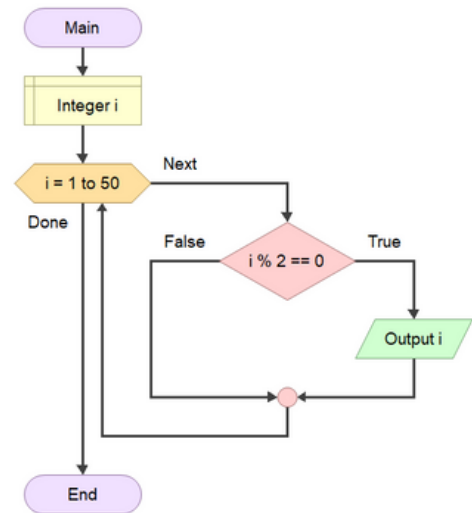
Step-2 Integer = I

Step-3 i equals 1. If i is between 1 and 50, $i \% 2 == 0$ is satisfied.

Step-4 If $i \% 2 == 0$ is true then return i and repeat step 3.

Step-5 If step 3 conditions are not met, proceed to the next step.

Step-6 Stop



Exercise 8: Write an algorithm and a flowchart to find sum of series $1 + 2 + 3 + \dots + N$.

Step-1 Start

Step-2 Integer = i, n, sum

Step-3 sum = 0

Step-4 Input Numbers say n

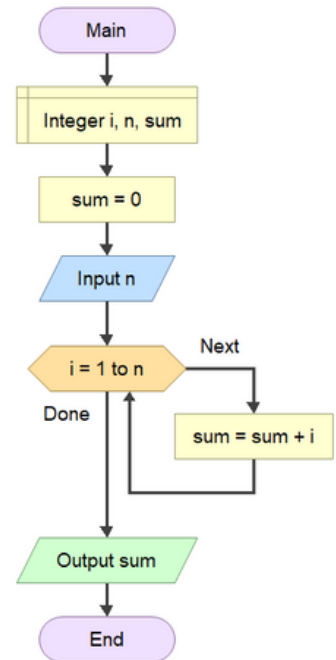
Step-5 i equals 1. If i is between 1 and n

Step-6 sum = sum + i

Step-7 Go back and do step 5 until the condition is not true.

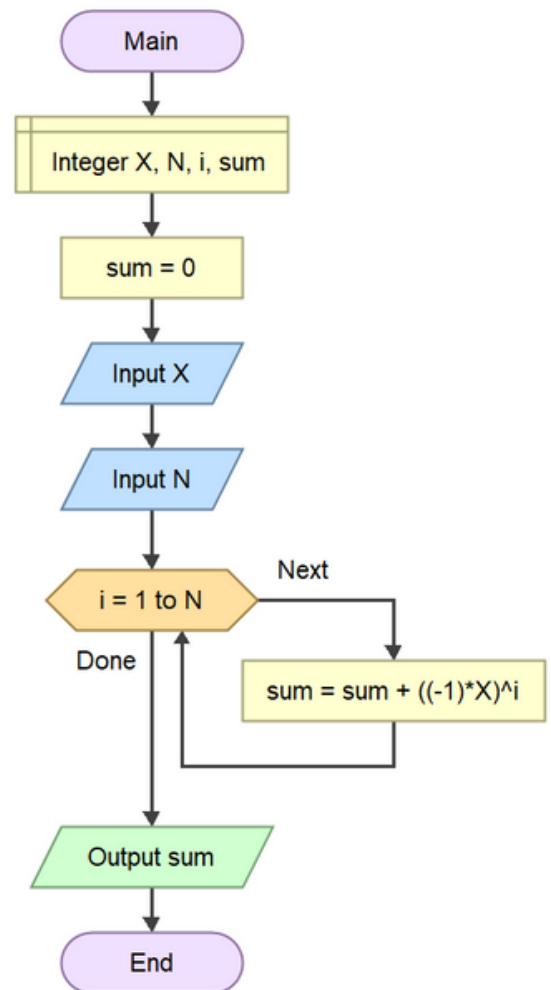
Step-8 Display sum value

Step-9 Stop



Exercise 9: Write an algorithm and a flowchart to find sum of series $1 - X + X^2 - X^3 + \dots + X^N$

Step-1 Start
Step-2 Integer = X, N, i, sum
Step-3 sum = 0
Step-4 Input Numbers say X , N
Step-5 i equals 1. If i is between 1 and N
Step-6 sum = sum + $((-1)^i * X^i)$
Step-7 Display sum value
Step-6 Stop



Exercise 10: Write an algorithm and a flowchart to print multiplication table of a number.

Step-1 Start

Step-2 Integer = A, B, C, D

Step-3 A = 1

Step-4 Input Numbers say C, D

C = number to multiply

D = number to multiply

Step-5 i equals 1. If i is $A \leq D$

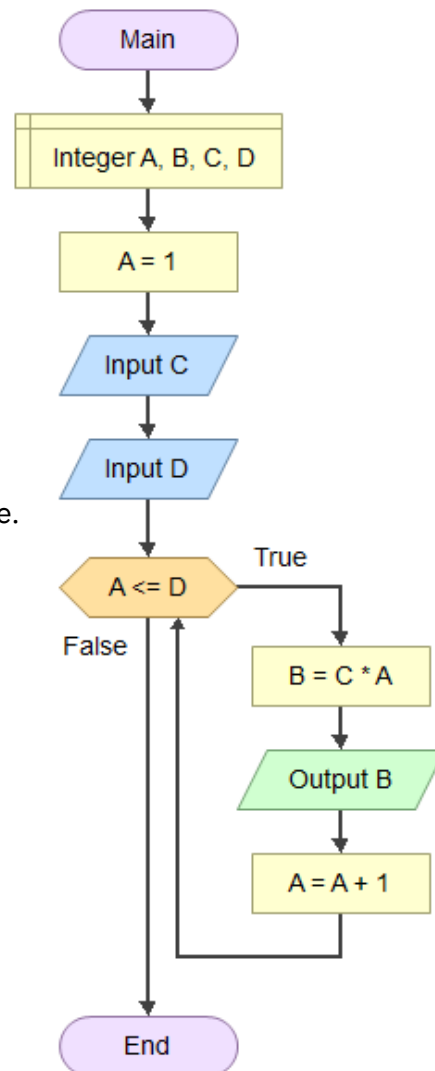
Step-6 $B = C \times A$

Step-7 Display B value

Step-8 $A = A + 1$

Step-7 Go back and do step 5 until the condition is not true.

Step-6 Stop



Exercise 11: Write an algorithm and a flowchart to find sum of series $1 - X + X^2 - X^3 + \dots + X^N$

Step-1 Start

Step-2 Integer = X, N, i, sum

Step-3 sum = 0

Step-4 Input Numbers say X , N

Step-5 i equals 1. If i is between 1 and N

Step-6 sum = sum + $((-1)^i X^i)$

Step-7 Go back and do step 5 until the condition is not true.

Step-8 Display sum value

Step-9 Stop

