**Tugas Logika dan Algoritma**

**Trace Table**

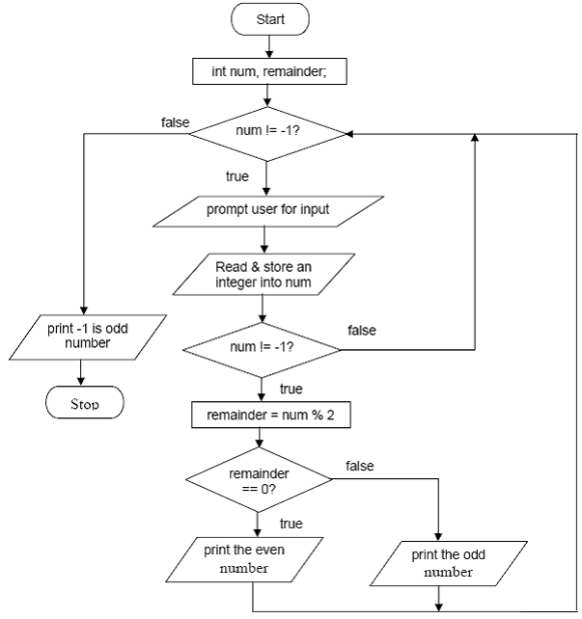
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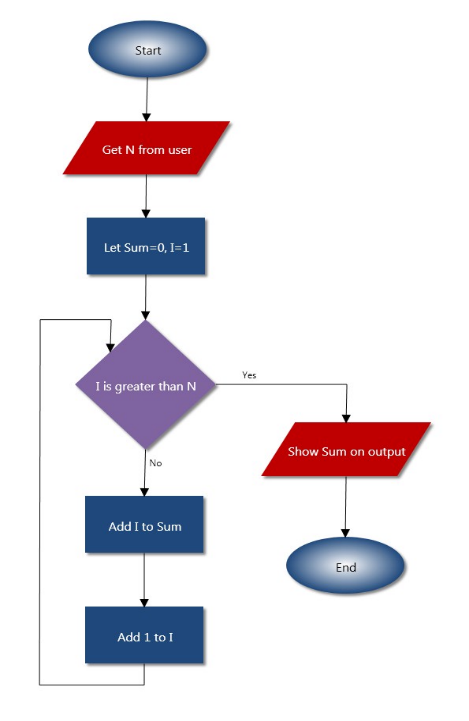
**Untuk Masing-masing Soal :**

1. **Sebutkan Tujuan Flowchart**
2. **Buatlah Trace Table**



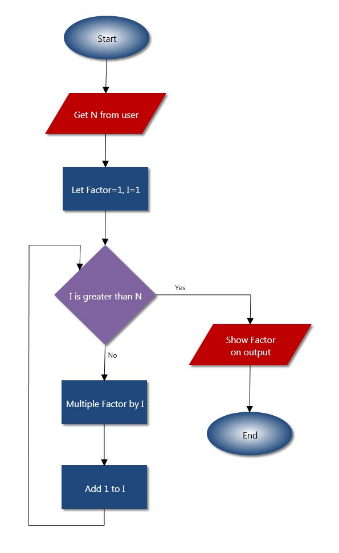
* **Tujuan :** Flowchart tersebut bertujuan untuk meminta input bilangan bulat kepada user kemudian melakukan pengecekan bilangan tersebut ganjil/genap dan menampilkan hasilnya. Hal ini terus berulang sampai user memberikan input -1 yang nantinya langsung mencetak -1 is odd number dan mengakhiri program.
* **Trace Table Soal 1 :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Langkah | num | reminder | Kondisi | Output |
| Start |  |  |  |  |
| Inisialisasi num, reminder |  |  |  |  |
| num != -1 ? |  |  | True |  |
| Prompt user input |  |  |  |  |
| Store input into num | 5 |  |  |  |
| num != -1 ? |  |  | True |  |
| Reminder = num % 2 |  | 1 |  |  |
| Reminder == 0 ? |  |  | False |  |
| Print the odd number |  |  |  | The odd number |
| Num != -1 ? |  |  | True |  |
| Prompt user input |  |  |  |  |
| Store input into num | -1 |  |  |  |
| Num != -1 ? |  |  | false |  |
| Num != -1 ? |  |  | false |  |
| Print -1 is odd number |  |  |  | -1 is odd number |
| Stop |  |  |  | Program Ended |

1. 

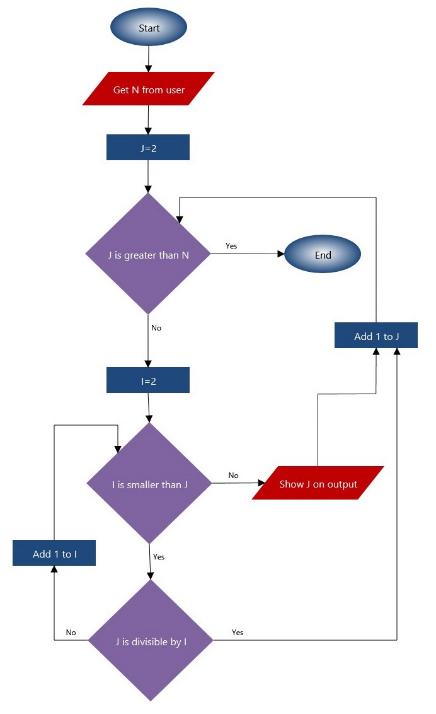
* **Tujuan :** Flowchart tersebut bertujuan untuk meminta input bilangan bulat kepada user kemudian melakukan perhitungan triangular dimana akan menjumlahkan mulai dari 1 sampai ke-N dan nantinya hasil penjumlahan tersebut dimasukkan kedalam variabel sum.
* **Trace Table Soal 2 :**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Langkah | N | Sum | I | Kondisi | Output |
| Start |  |  |  |  |  |
| Get N from user | 3 |  |  |  |  |
| Let Sum = 0; I = 1 |  | 0 | 1 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 1 |  |  |  |
| Add 1 to I |  |  | 2 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 3 |  |  |  |
| Add 1 to I |  |  | 3 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 6 |  |  |  |
| Add 1 to I |  |  | 4 |  |  |
| I > N ? |  |  |  | true |  |
| Show Sum on Output |  |  |  |  | Sum = 6 |
| End |  |  |  |  | Program Ended. |

1. 

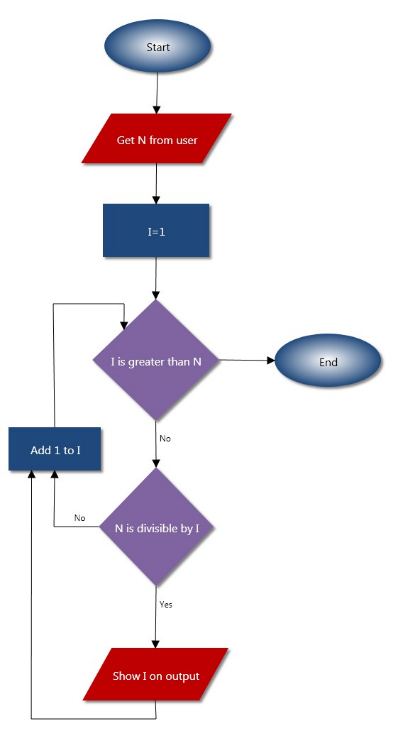
* **Tujuan :** Flowchart tersebut bertujuan untuk meminta input bilangan bulat kepada user kemudian melakukan perhitungan faktorial dimana akan mengalikan bilangan secara berurutan mulai dari 1 sampai ke-N dan hasilnya akan dimasukkan kedalam variabel factor
* **Trace Table Soal 3 :**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Langkah | N | Factor | I | Kondisi | Output |
| Start |  |  |  |  |  |
| Get N from user | 3 |  |  |  |  |
| Let Factor = 1; I = 1 |  | 1 | 1 |  |  |
| I > N ? |  |  |  | False |  |
| Multiply Factor by I |  | 1 |  |  |  |
| Add 1 to I |  |  | 2 |  |  |
| I > N ? |  |  |  | False |  |
| Multiply Factor by I |  | 2 |  |  |  |
| Add 1 to I |  |  | 3 |  |  |
| I > N ? |  |  |  | False |  |
| Multiply Factor by I |  | 6 |  |  |  |
| Add 1 to I |  |  | 4 |  |  |
| I > N ? |  |  |  | true |  |
| Show Factor on Output |  |  |  |  | Factor = 6 |
| End |  |  |  |  | Program Ended. |



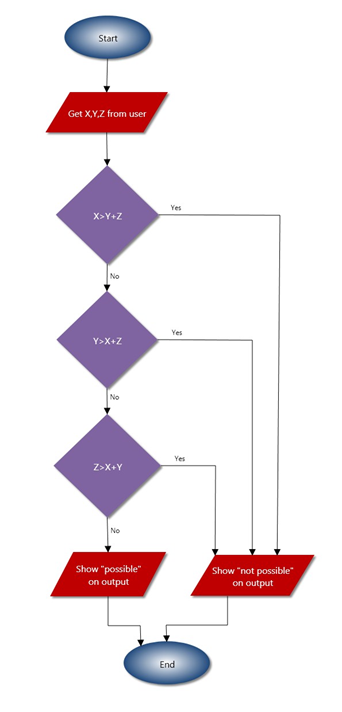
* **Tujuan :** Flowchart tersebut bertujuan untuk meminta input bilangan bulat kepada user kemudian mencari dan mencetak bilangan prima dari 2 hingga ke-N.
* **Trace Table Soal 4 :**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Langkah | N | J | I | Kondisi | Output |
| Start |  |  |  |  |  |
| Get N from User | 5 |  |  |  |  |
| J = 2 |  | 2 |  |  |  |
| J is greater than N ? |  |  |  | False |  |
| I = 2 |  |  | 2 |  |  |
| I is smaller than J ? |  |  |  | False |  |
| Show I on output |  |  |  |  | 2 |
| Add 1 to J |  | 3 |  |  |  |
| J is greater than N ? |  |  |  | False |  |
| I = 2 |  |  | 2 |  |  |
| I is smaller than J ? |  |  |  | True |  |
| J is divisible by I ? |  |  |  | False |  |
| Add 1 to I |  |  | 3 |  |  |
| I is smaller than J ? |  |  |  | false |  |
| How J on output |  |  |  |  | 2, 3 |
| Add 1 to J |  | 4 |  |  |  |
| J is greater than N |  |  |  | false |  |
| I = 2 |  |  | 2 |  |  |
| I is smaller than J ? |  |  |  | True |  |
| J is divisible by I ? |  |  |  | True |  |
| Add 1 to J |  | 5 |  |  |  |
| J is greater than N ? |  |  |  | False |  |
| I = 2 |  |  | 2 |  |  |
| I is smaller than J ? |  |  |  | True |  |
| J is divisible by I ? |  |  |  | False |  |
| Add 1 to I |  |  | 3 |  |  |
| I is smaller than J ? |  |  |  | True |  |
| J is divisible by I ? |  |  |  | False |  |
| Add 1 to I |  |  | 4 |  |  |
| I is smaller than J ? |  |  |  | True |  |
| J is divisible by I ? |  |  |  | False |  |
| Add 1 to I |  |  | 5 |  |  |
| I is smaller than J |  |  |  | False |  |
| Show J on output |  |  |  |  | 2, 3, 5 |
| Add 1 to J |  | 6 |  |  |  |
| J is greater than N |  |  |  | True |  |
| End |  |  |  |  | Program Ended. |



* **Tujuan :** Flowchart tersebut bertujuan untuk meminta input bilangan bulat kepada user kemudian mencari dan mencetak faktor dari bilangan tersebut.
* **Trace Table Soal 5 :**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Langkah | N | Sum | I | Kondisi | Output |
| Start |  |  |  |  |  |
| Get N from user | 3 |  |  |  |  |
| Let Sum = 0; I = 1 |  | 0 | 1 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 1 |  |  |  |
| Add 1 to I |  |  | 2 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 3 |  |  |  |
| Add 1 to I |  |  | 3 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 6 |  |  |  |
| Add 1 to I |  |  | 4 |  |  |
| I > N ? |  |  |  | true |  |
| Show Sum on Output |  |  |  |  | Sum = 6 |
| End |  |  |  |  | Program Ended. |



* **Tujuan :** Flowchart tersebut bertujuan untuk meminta input bilangan bulat kepada user kemudian melakukan perhitungan triangular dimana akan menjumlahkan mulai dari 1 sampai ke-N dan nantinya hasil penjumlahan tersebut dimasukkan kedalam variabel sum.
* **Trace Table Soal 5 :**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Langkah | N | Sum | I | Kondisi | Output |
| Start |  |  |  |  |  |
| Get N from user | 3 |  |  |  |  |
| Let Sum = 0; I = 1 |  | 0 | 1 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 1 |  |  |  |
| Add 1 to I |  |  | 2 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 3 |  |  |  |
| Add 1 to I |  |  | 3 |  |  |
| I > N ? |  |  |  | False |  |
| Add I to Sum |  | 6 |  |  |  |
| Add 1 to I |  |  | 4 |  |  |
| I > N ? |  |  |  | true |  |
| Show Sum on Output |  |  |  |  | Sum = 6 |
| End |  |  |  |  | Program Ended. |