Basic Programming
Looping Exercise

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1i

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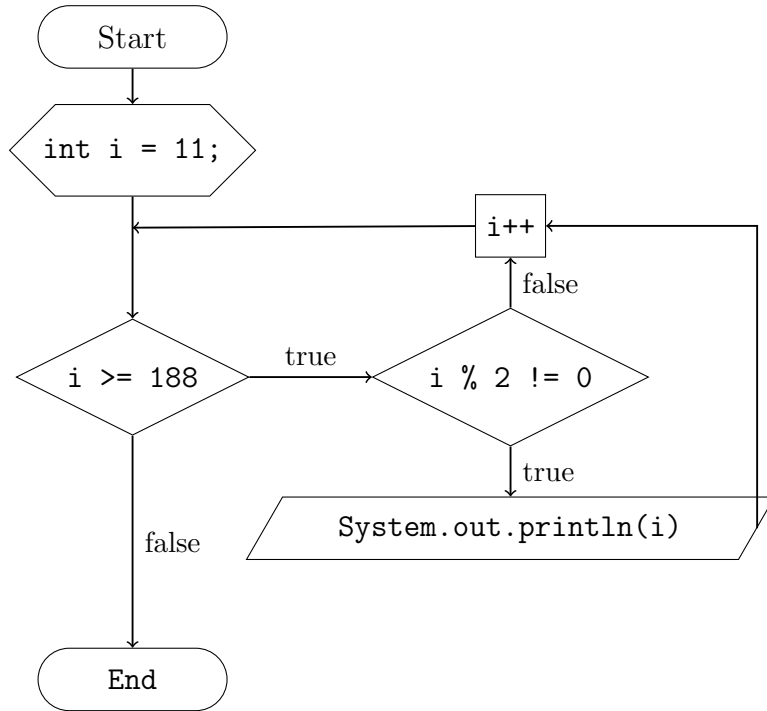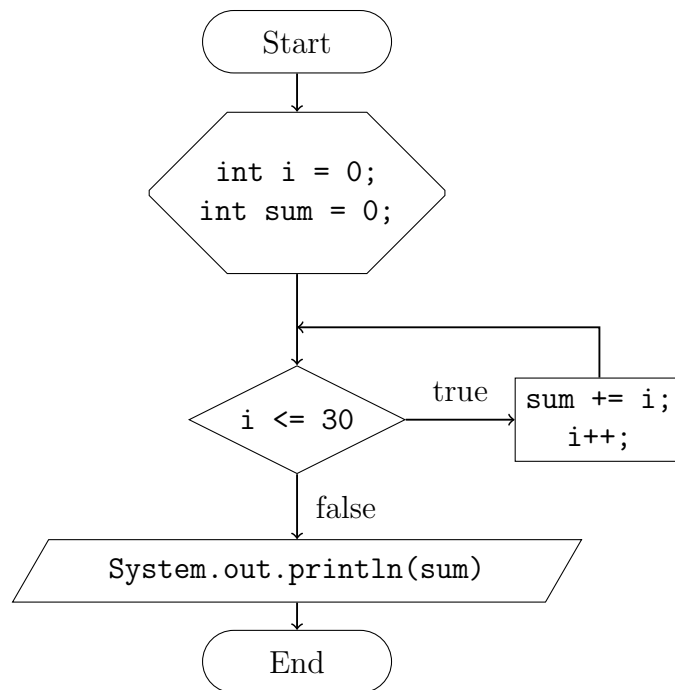Information Technology

Study Program
D4 Informatics Engineering

Exercise

Create a flowchart from the following problems using for, while, and do-while!

1. Displays the odd number from 11 to 188

```
Start
```

```
int i = 11;
```

```
i++
```

false

```
i >= 188
```
true →
```
i % 2 != 0
```

true

```
System.out.println(i)
```

false

```
End
```

2. Displays the sum of the series of numbers 1 to 30

```
                    ┌─────────────┐
                    (    Start    )
                    └─────────────┘
                           │
                           ▼
                     ╱───────────╲
                    ╱ int i = 0;  ╲
                    ╲ int sum = 0; ╱
                     ╲───────────╱
                           │
                           ▼
              ┌───────────────────────────┐
              │                           │
              ▼                           │
            ╱────╲      true      ┌──────────────┐
           ╱ i <= ╲──────────────▶│  sum += i;   │
           ╲  30  ╱               │    i++;      │
            ╲────╱                └──────────────┘
              │
          false│
              ▼
      ╱─────────────────────────────╱
     ╱ System.out.println(sum)     ╱
    ╱─────────────────────────────╱
              │
              ▼
        ┌─────────────┐
        (     End     )
        └─────────────┘
```

3. Calculates the power of X^Y with X and Y from the user input

```
             ┌───────────┐
             │   Start   │
             └───────────┘
                   │
   int i = 0, result, X, Y, isFinished = 0;
                   │
            Input X value
                   │
         Assign X to result
                   │
            Input Y value
                   │
               i <= Y ──true──→ result *= X;
                   │                 i++;
                 false
                   │
       System.out.println(X)
                   │
   Print "Try again? (1 = yes, 0 = no)"
                   │
       Input isFinished value
                   │
           isFinished == 1 ──false──
                   │
             ┌───────────┐
             │    End    │
             └───────────┘
```
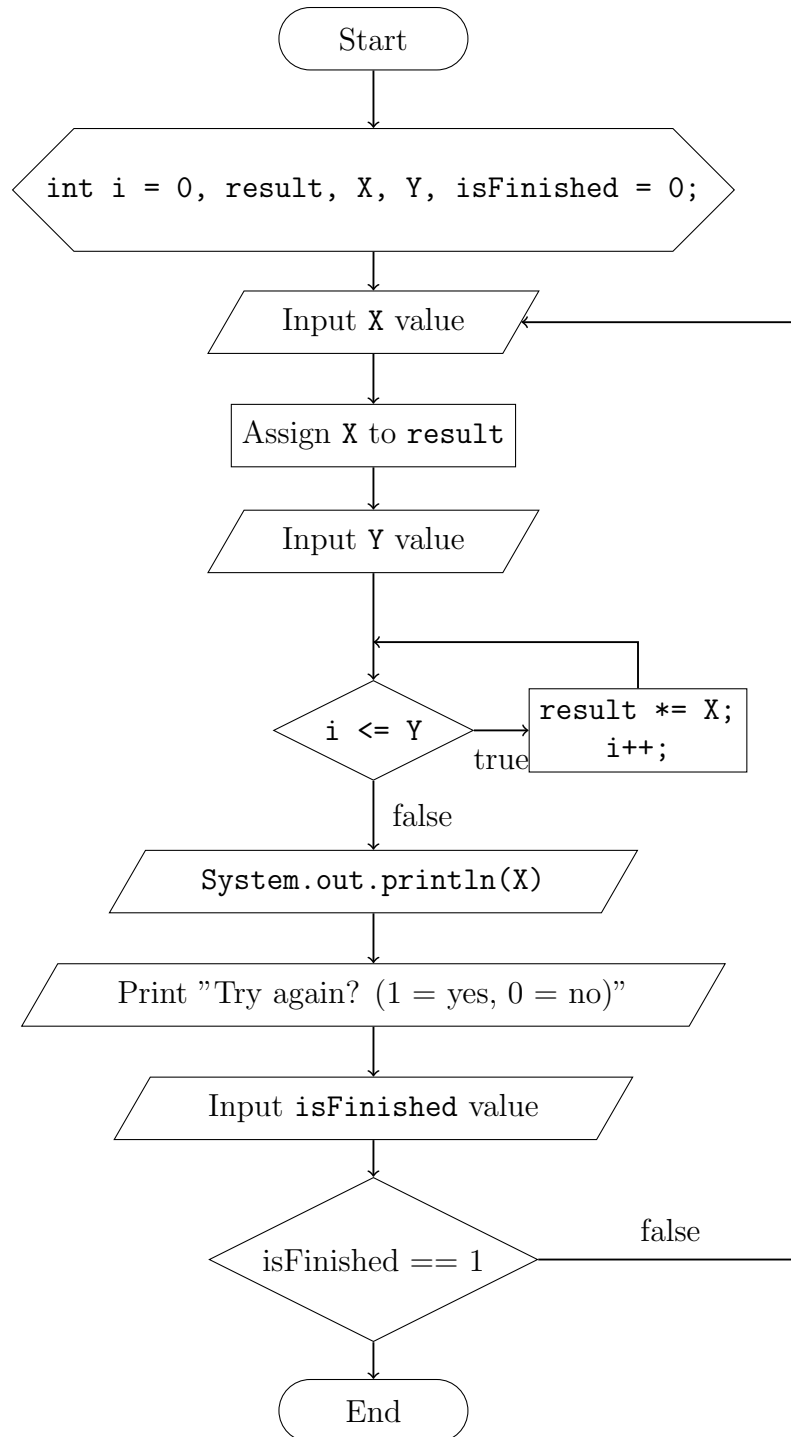
4. Displays a series of numbers 2 4 8 16 32... 256

```
          ┌──────────┐
          │  Start   │
          └──────────┘
               │
               ▼
        ╱─────────────╲
       ╱ int result = 2; ╲
        ╲─────────────╱
               │
               ▼
          ╱─────────╲                    ┌──────────┐
         ╱           ╲      false         │   End    │
        ⟨ result < 256 ⟩ ────────────────▶│          │
         ╲           ╱                    └──────────┘
          ╲─────────╱
               │ true
               ▼
     ╱──────────────────────────╲
    ╱ System.out.println(result)  ╱
    ╲──────────────────────────╱
               │
               ▼
        ┌──────────────┐
        │ result *= 2; │
        └──────────────┘
```