

# Gateways

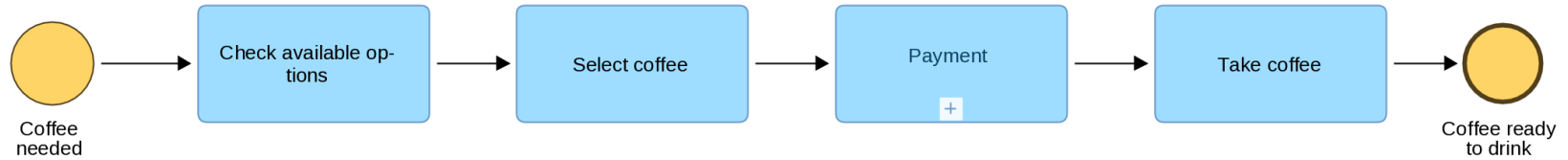




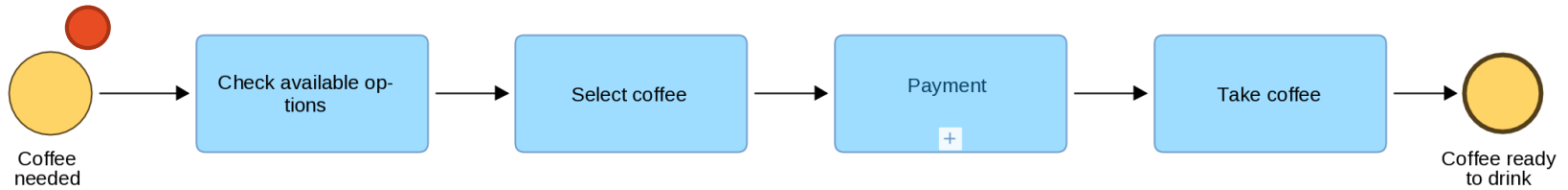
# Token



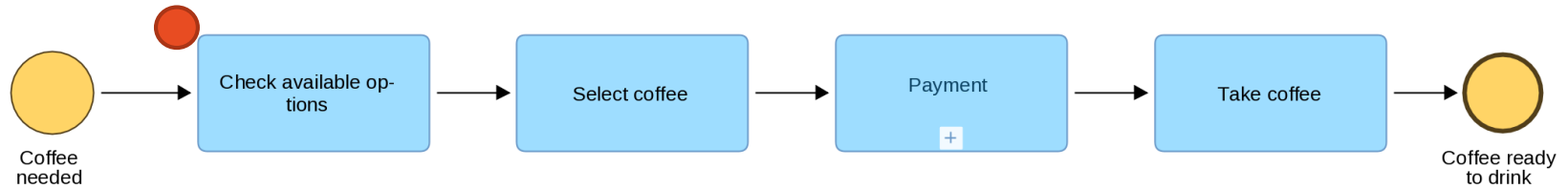
# Token in practice



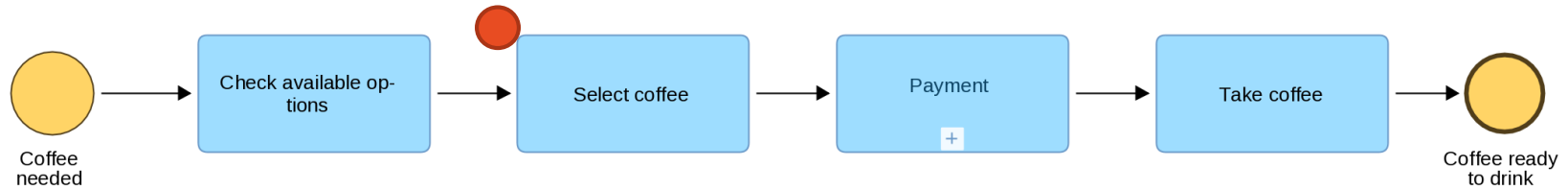
# Token in practice



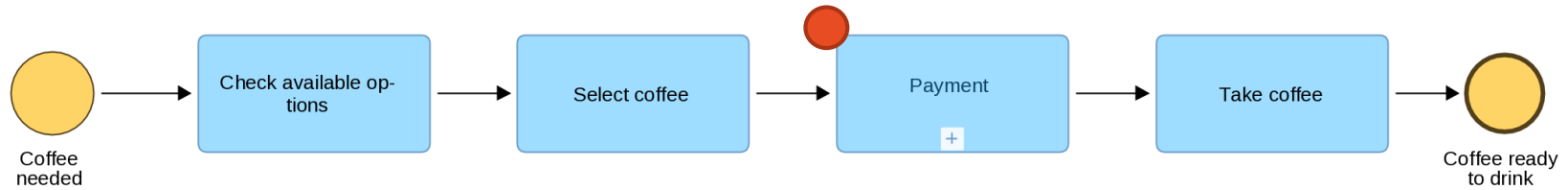
# Token in practice



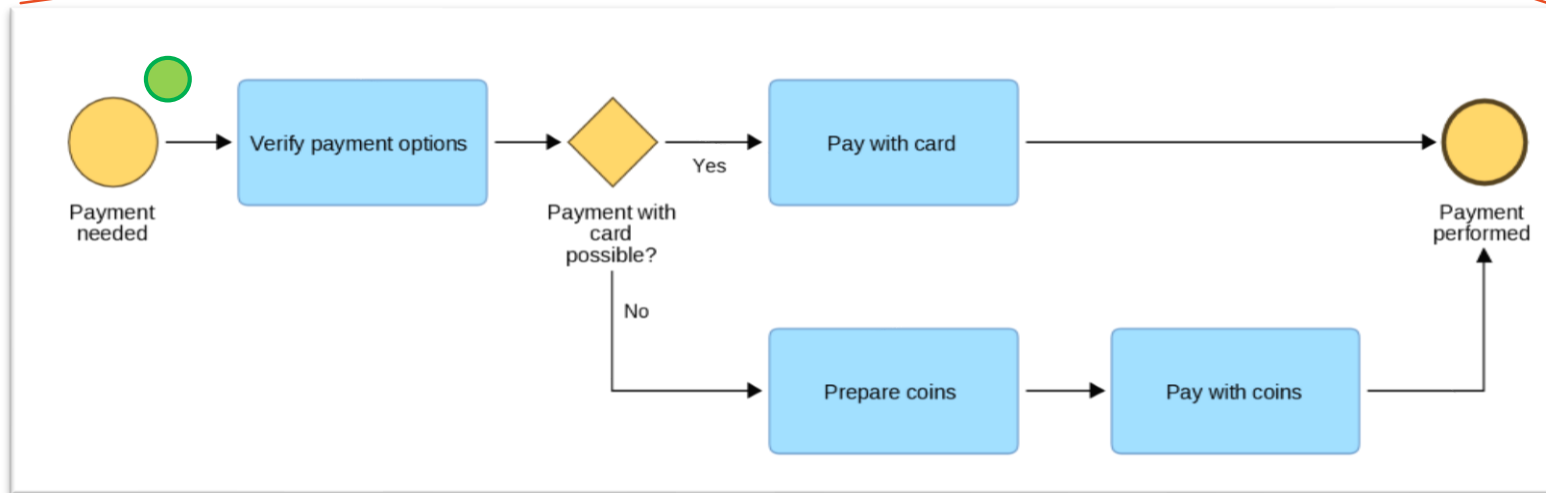
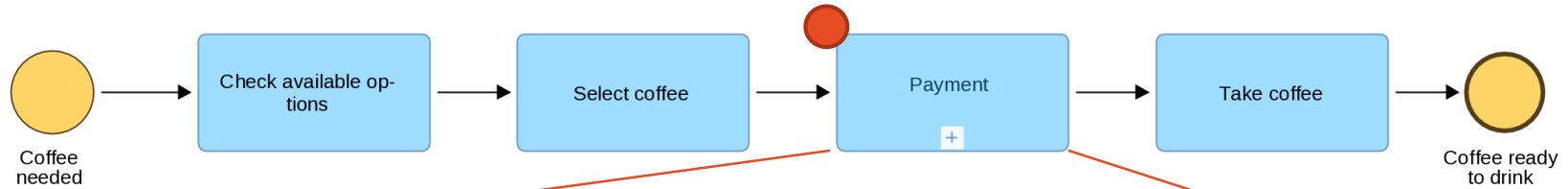
# Token in practice



# Token in practice

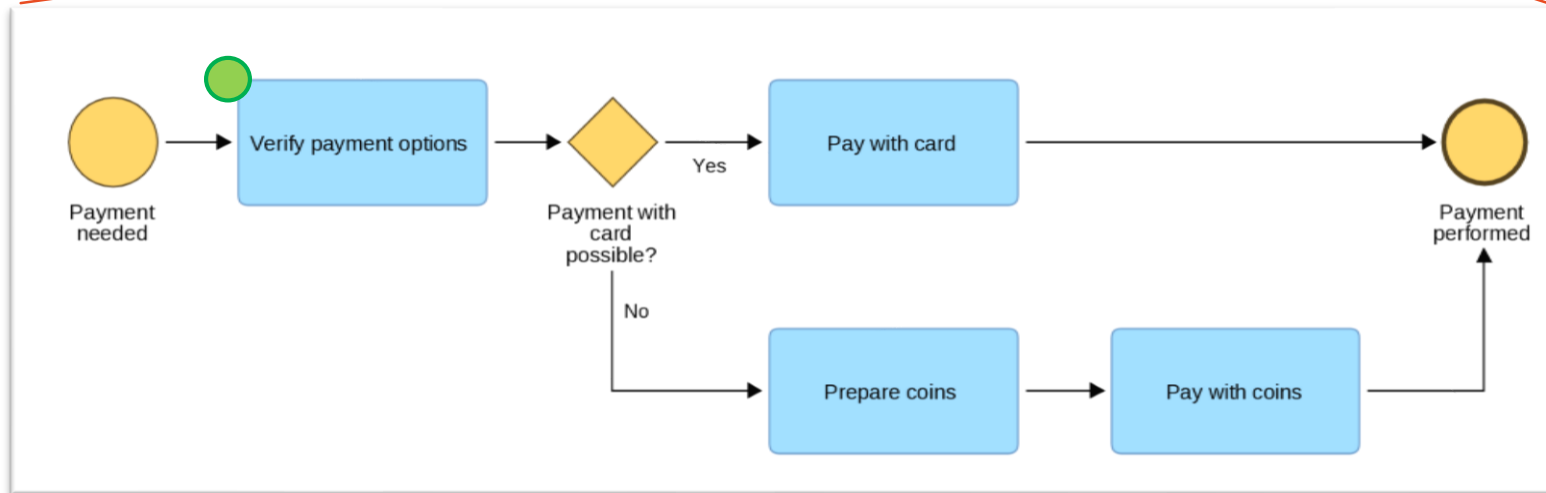
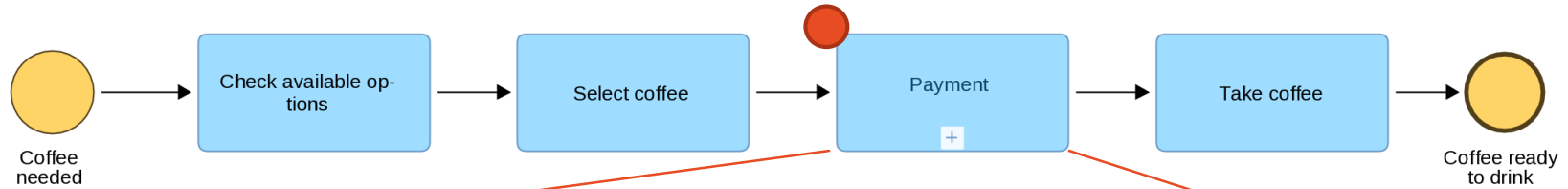


# Token in practice

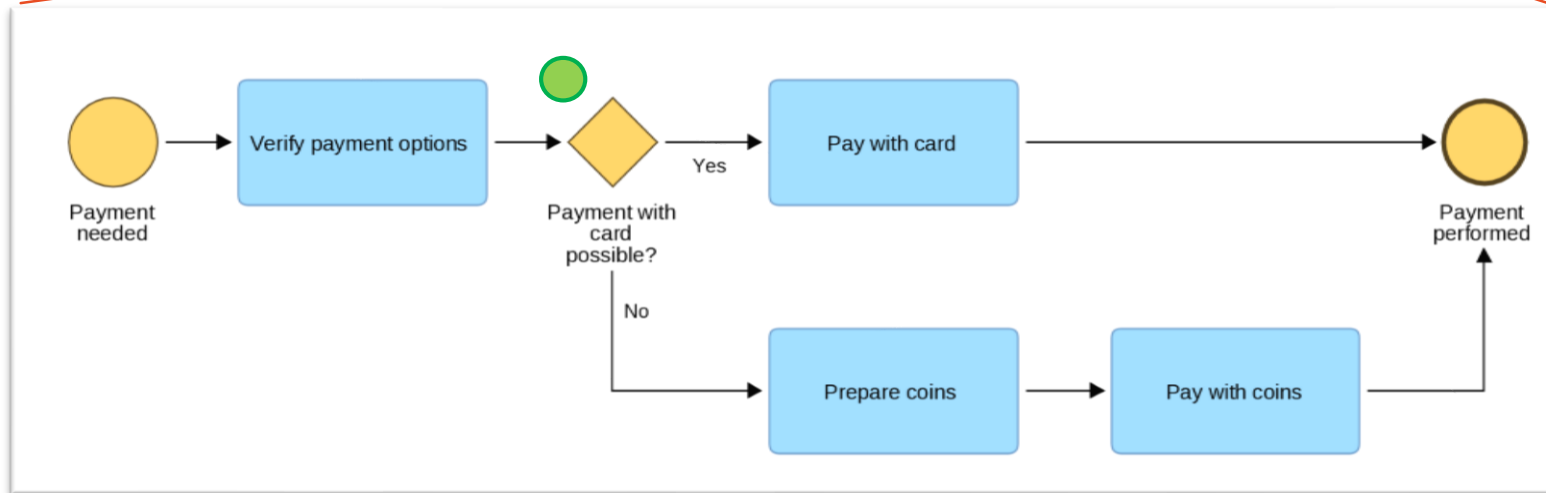
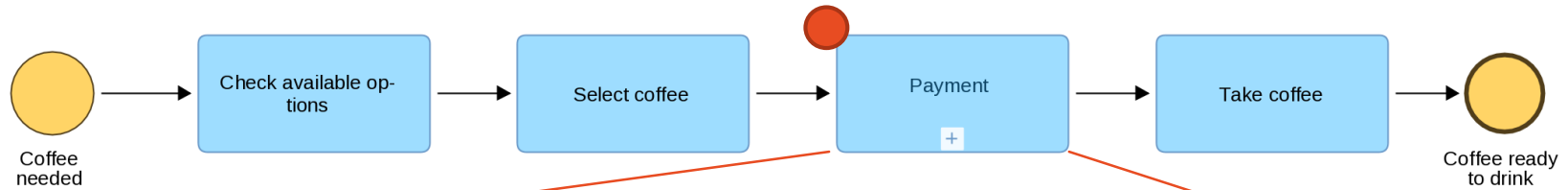




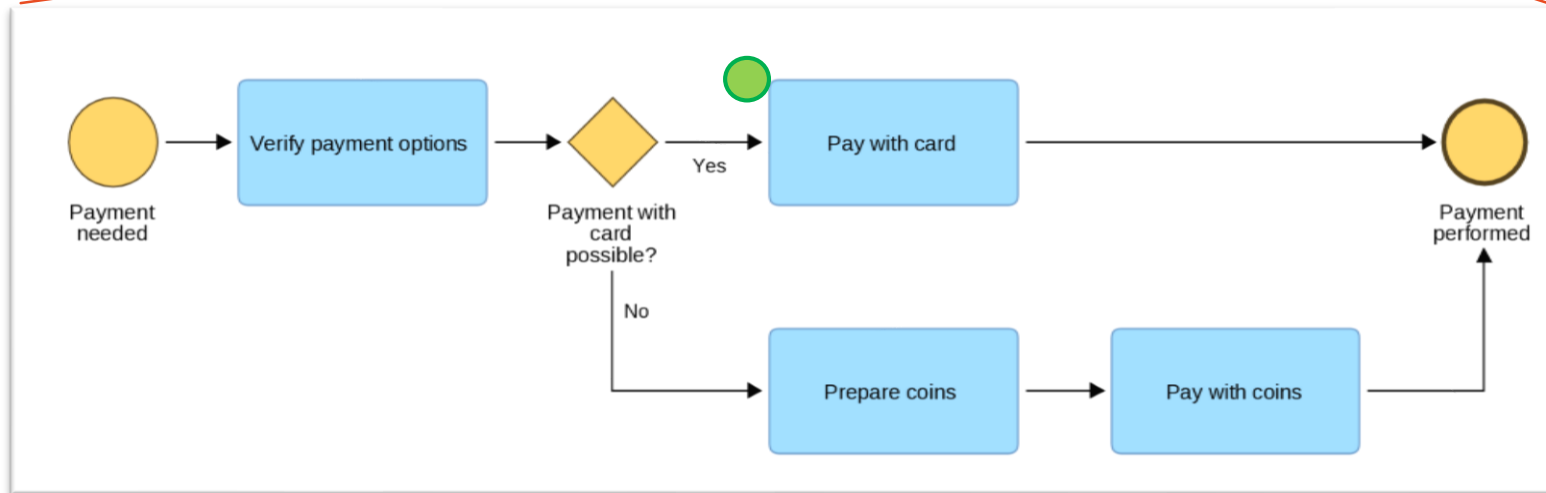
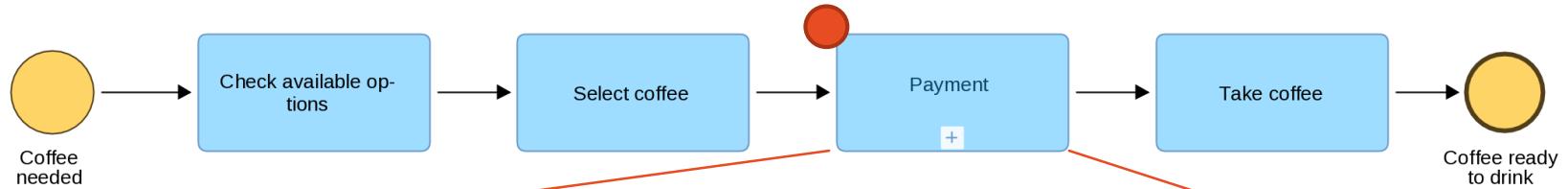
# Token in practice



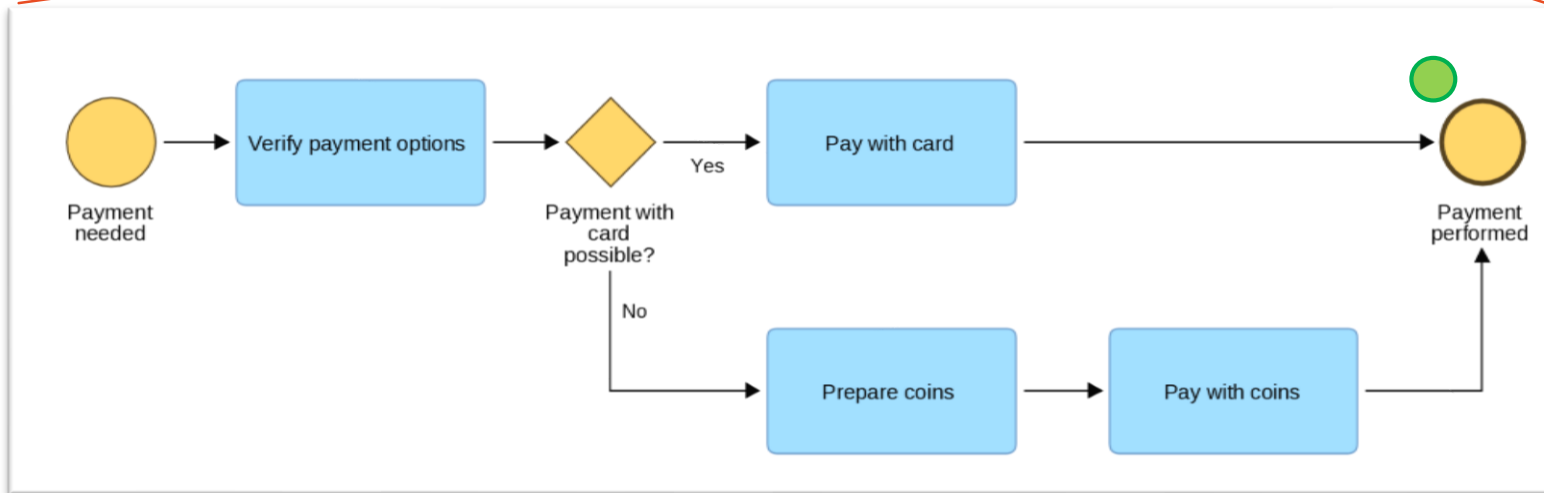
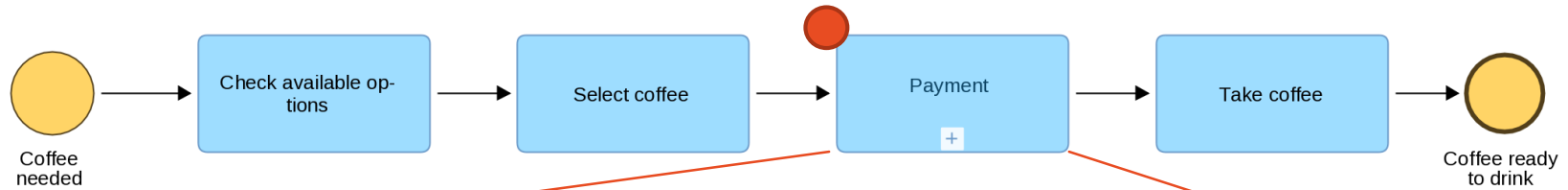
# Token in practice



# Token in practice

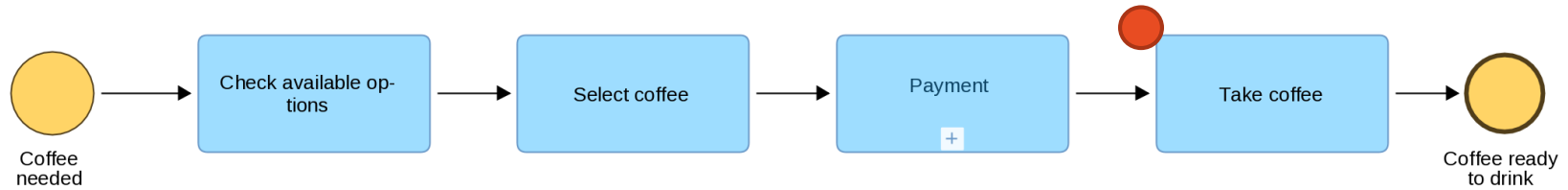


# Token in practice



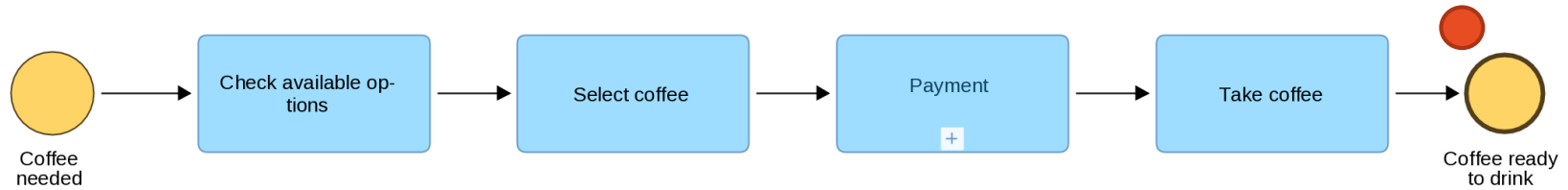
# Token in practice

**BPM**  
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# Token in practice



# BPMN building blocks

- **Exclusive Gateway (XOR)**

- Empty diamond OR diamond with X inside (pick one)
- Allows you to diverge (split) process flow into **alternative paths** on a basis of data
- You can also converge (merge) paths if needed
- **Only ONE path gets a token – depending on condition check**
- Specification calls it Decision, but actually this is NOT activity of decision making (this should happen before the gateway) since gateways don't represent work



- **Naming suggests logic of the splitting**

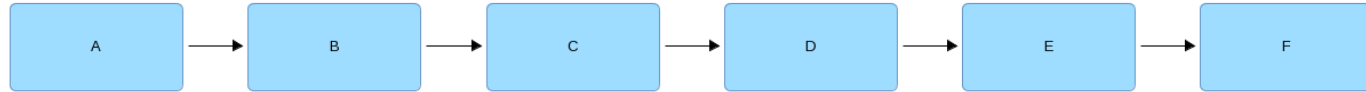
- Suggestion: question; answers on outgoing Sequence Flows (Yes/No or options) handling the results
- E.g. Offer accepted?, Report approved?, Option selected?

# Process flow step by step



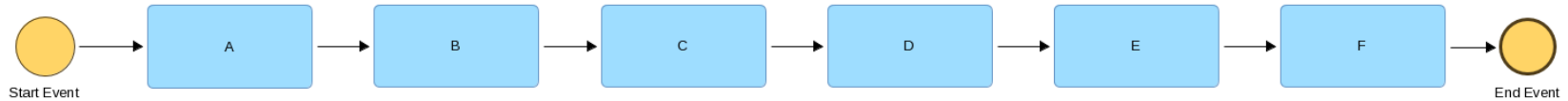
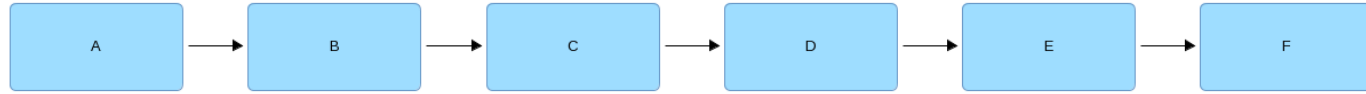
# Simple sequence

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One step at a time

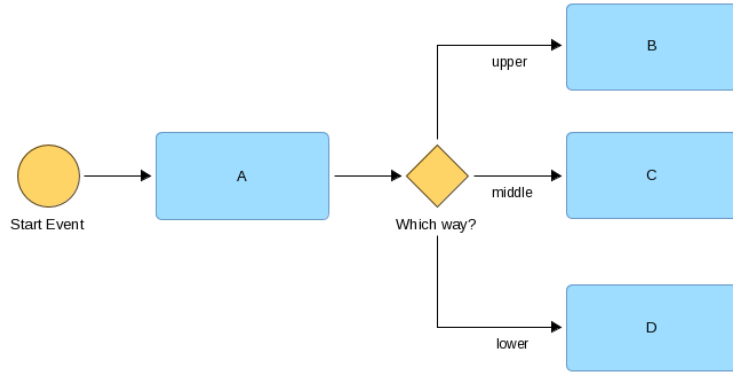
# Simple sequence



One step at a time  
Log: ABCDEF

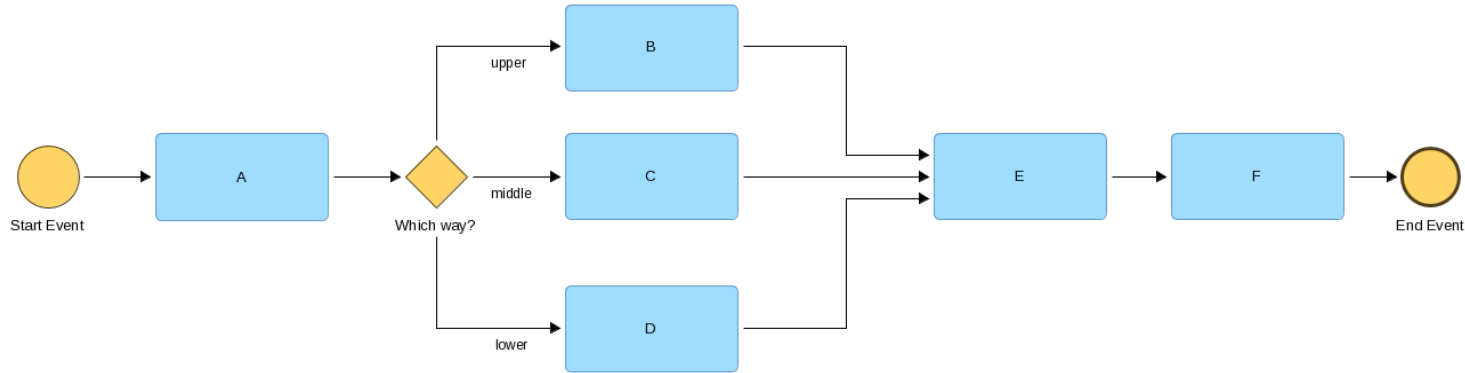


# Exclusive choice



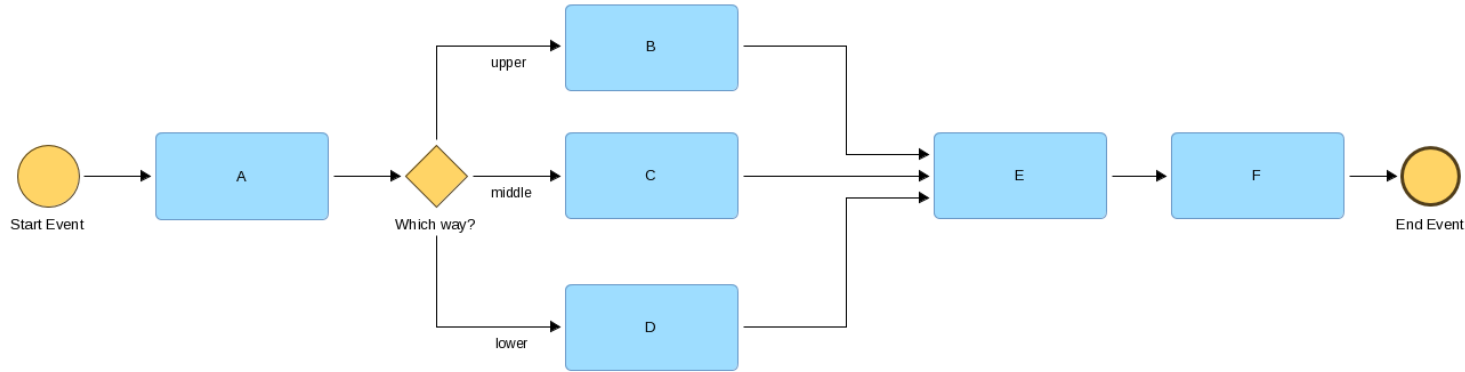
There can be only one

# ... and simple merge

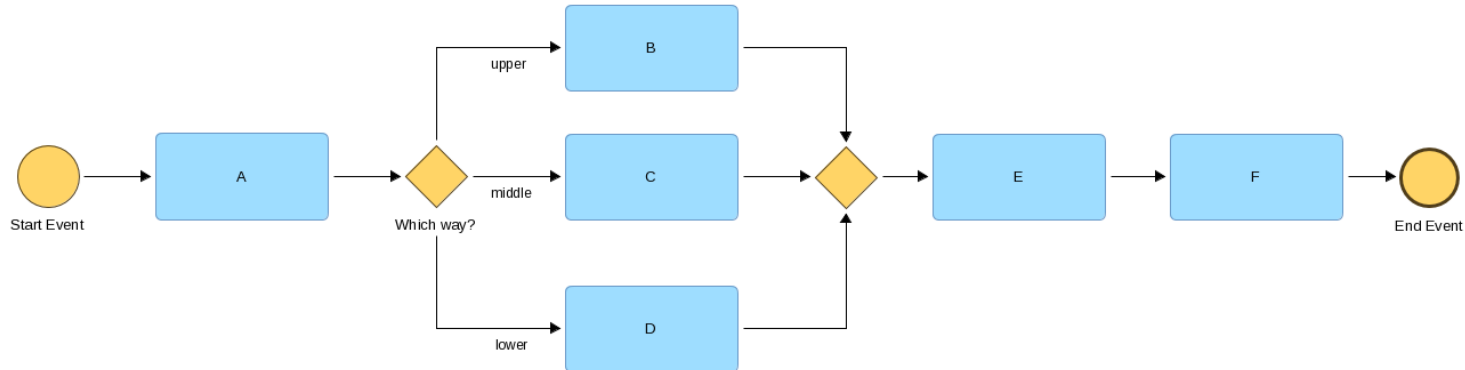


Valid log: ABEF, ACEF, ADEF  
NOT valid: ABCEF etc.

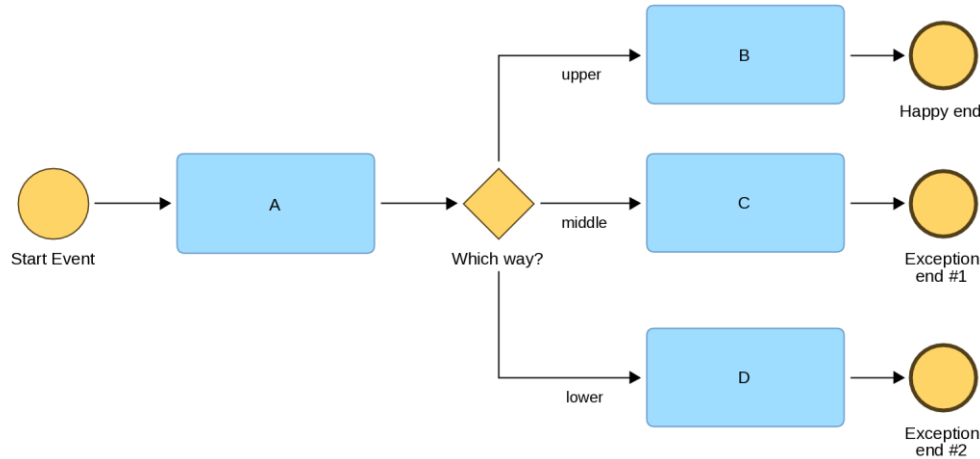
# XOR can also merge



The same meaning



# Different End Events



Different End Events help you show the results of a process

E.g. Order fulfilled vs Lost lead documented

# DEMO





# BPMT Drones process

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“Sunny day scenario”:

- Customer sends custom order via website
- Employee checks if parts are available
- If so, she orders from warehouse
- Otherwise ordering from supplier is needed
- When parts are ready drone assembling can start (complex activity → Subprocess)
- Afterwards employee sends the order
- Process ends with a state Order fulfilled

# BPMT Drones process

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## Possible extensions:

- Order feasibility needs to be checked
- If order is feasible we follow the main flow
- If not customer needs to be informed
- Afterwards we document lost lead
- Process ends with a state Lost lead documented

# BPMN building blocks

- **Parallel Gateway (AND)**

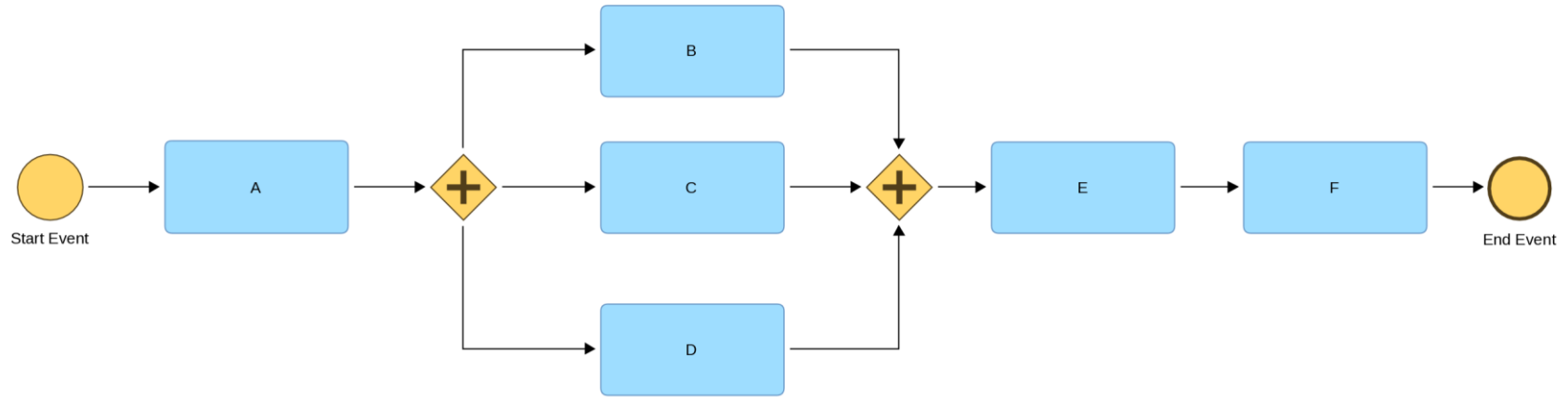
- Diamond with + inside
- Allows you to split and merge (Synchronize) parallel paths
- **EACH path gets a token – no conditions are checked**
- **All parallel paths must complete before synchronization allows the process to continue**
- Parallel activities may take place at the same time



- **Naming**

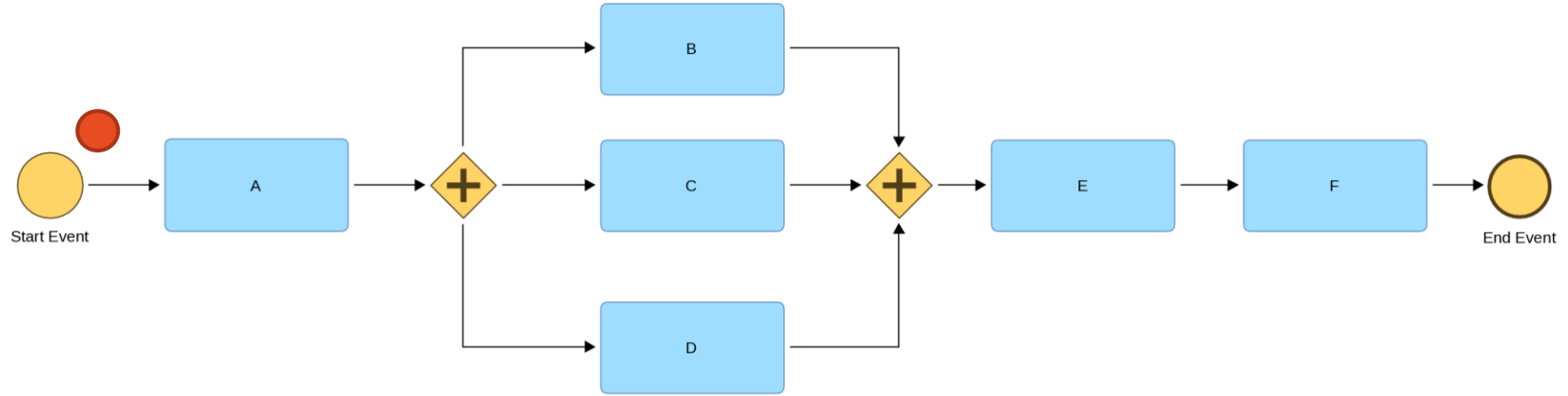
- Usually name is not shown neither for gateway, nor for the outgoing sequence flows

# Parallel paths



I want it all

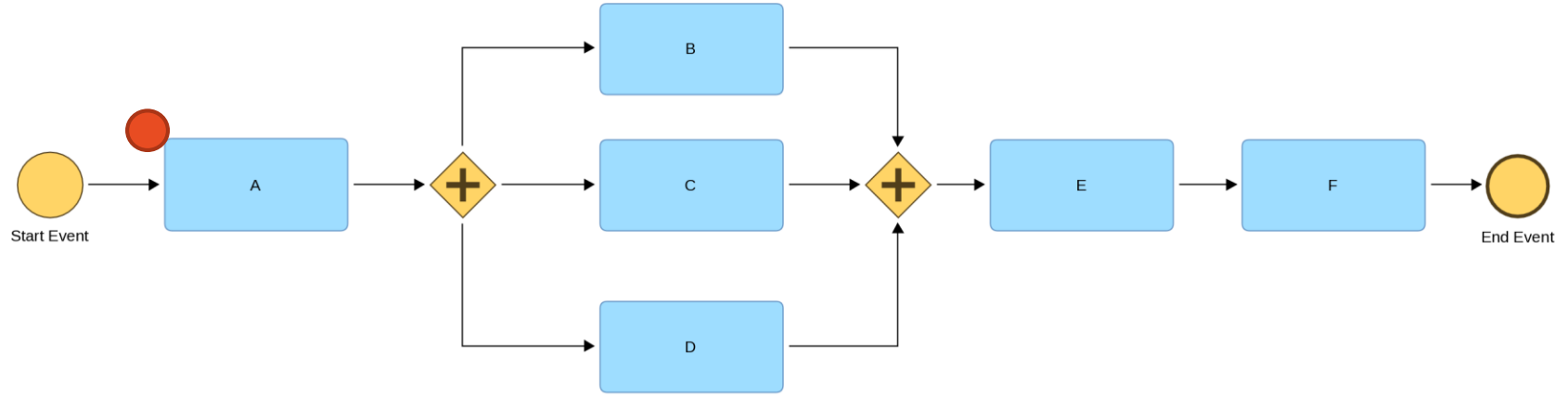
# Parallel paths





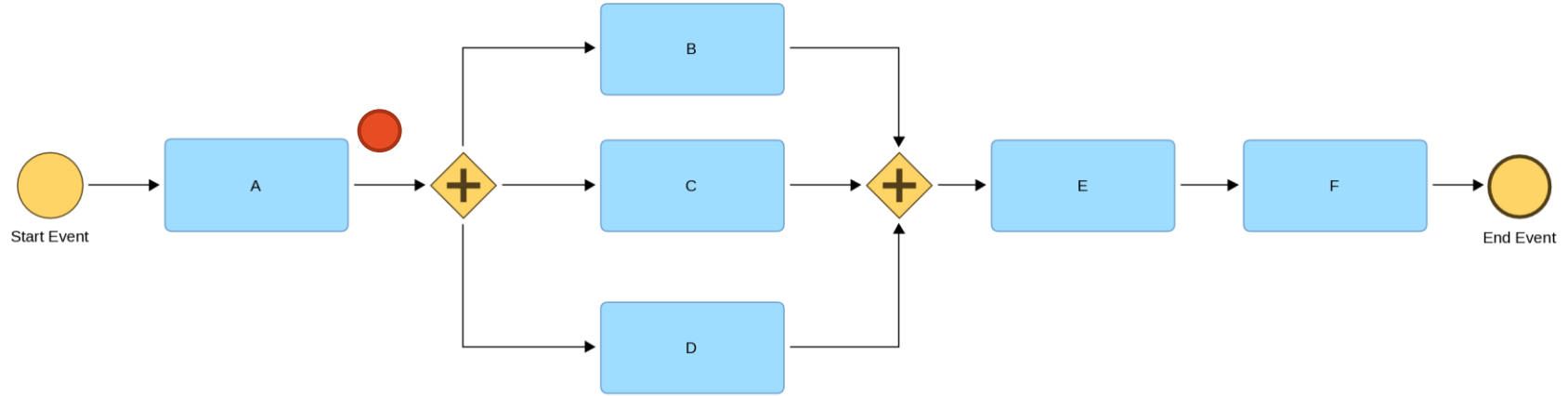
# Parallel paths

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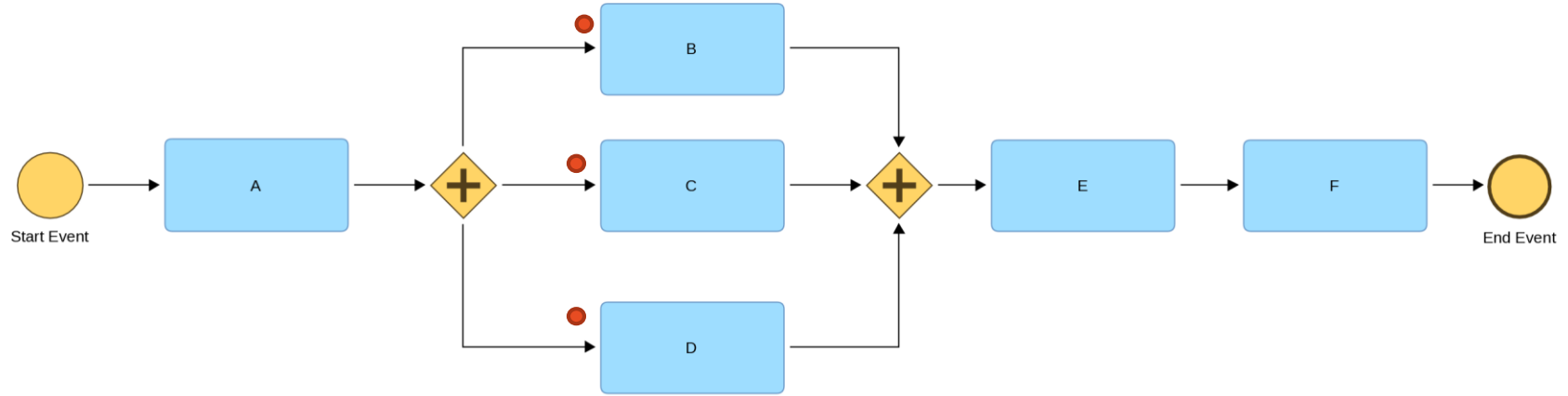
# Parallel paths

**BPM**  
Tips.com

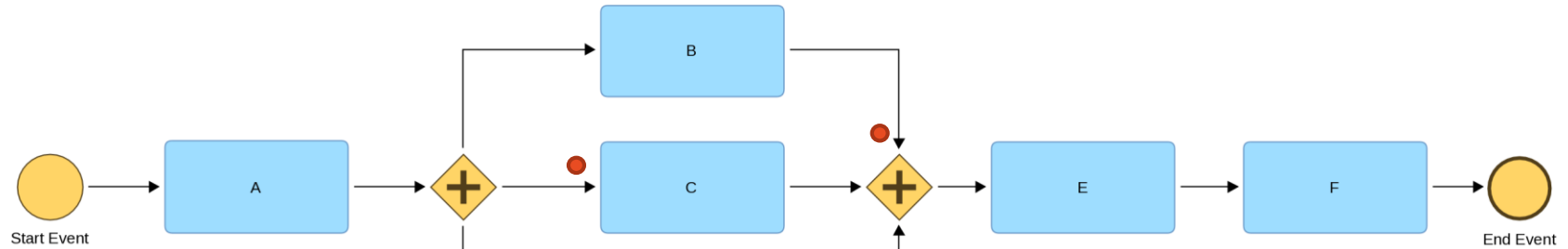


# Parallel paths

**BPM**  
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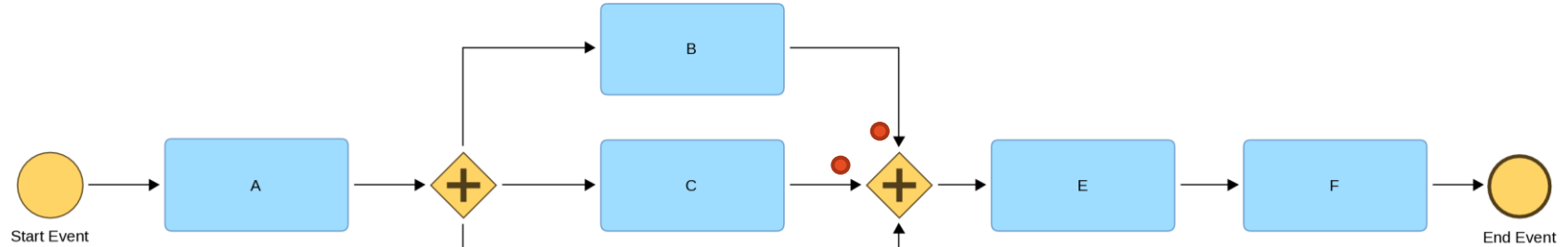


# Parallel paths



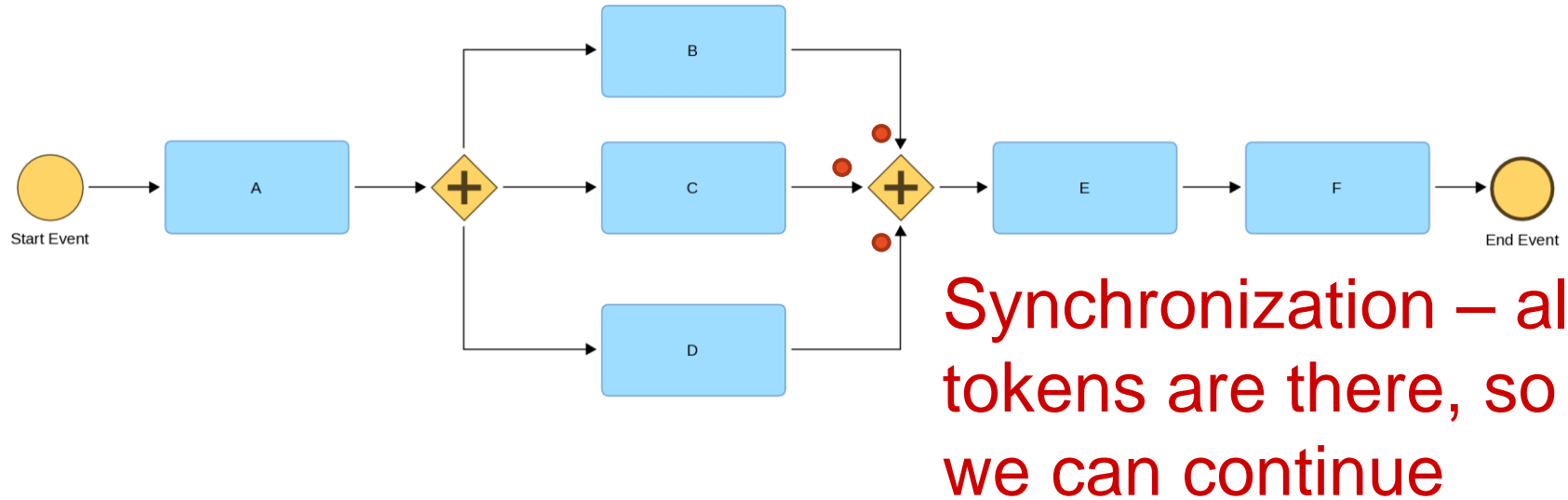
**Synchronization –  
process waits for all  
tokens (3)**

# Parallel paths



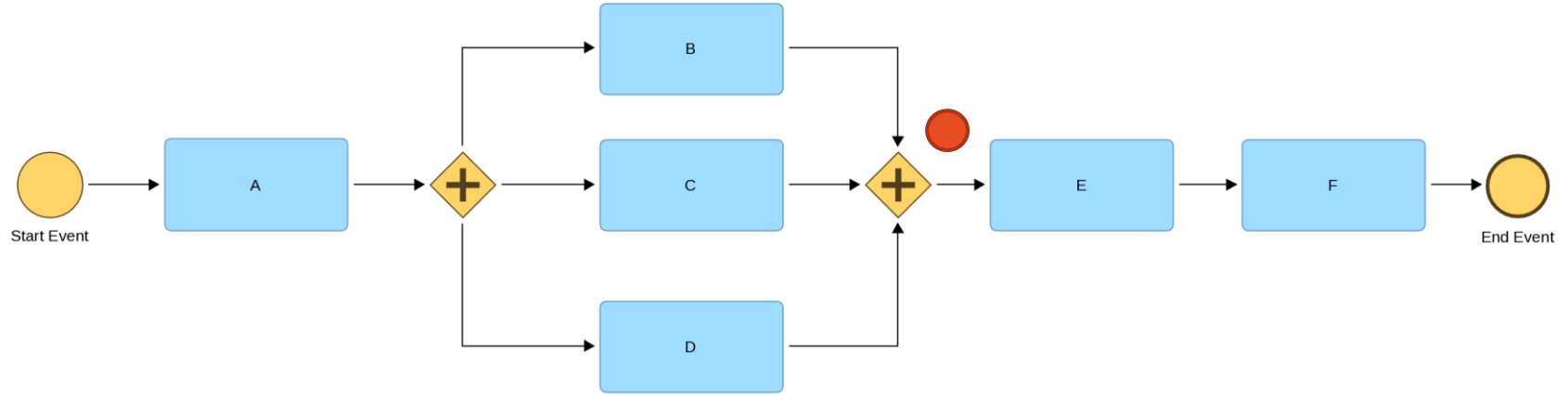
**Synchronization –  
process waits for all  
tokens (3)**

# Parallel paths

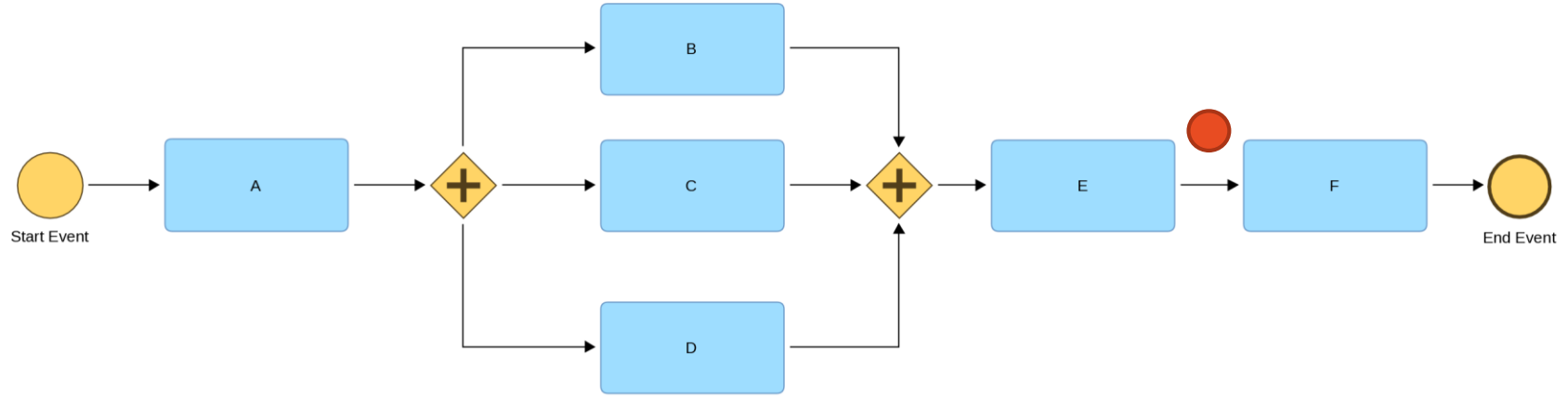


# Parallel paths

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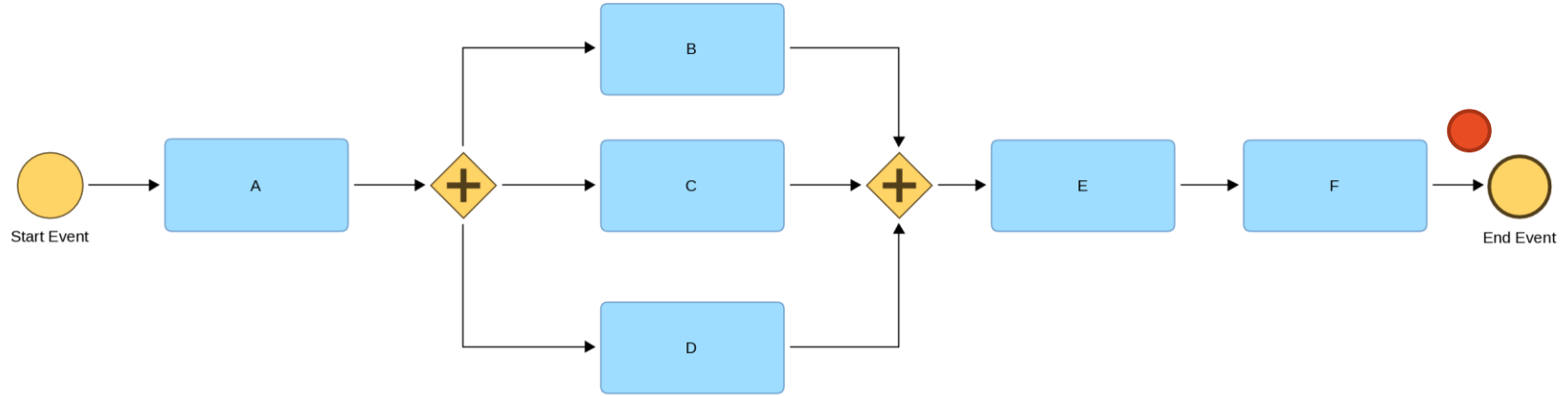


# Parallel paths

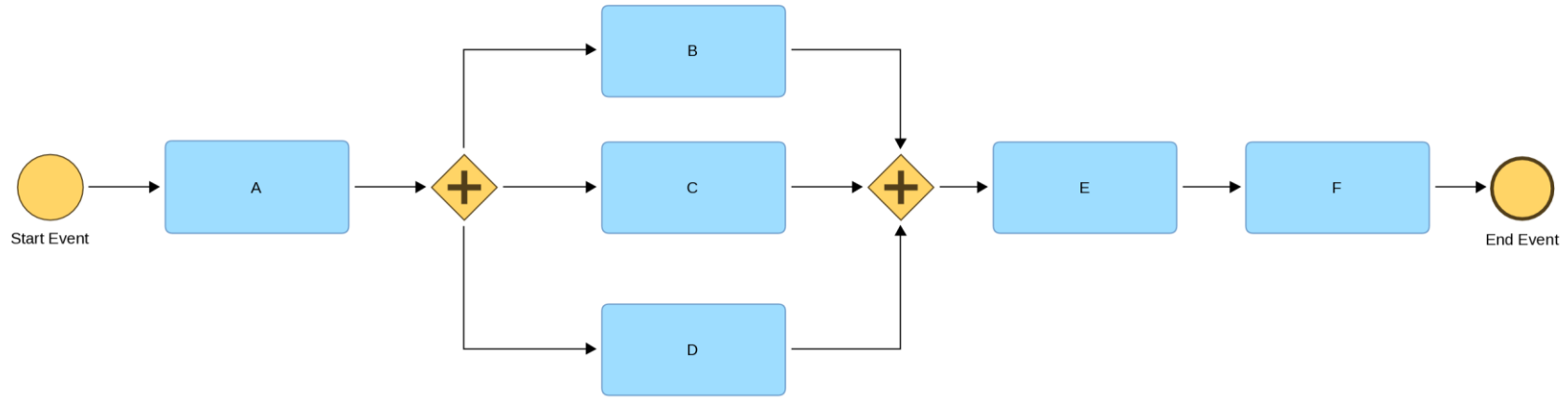




# Parallel paths



# Parallel paths



Valid log: ABCDEF, ABDCEF,  
ACBDEF etc.

NOT valid: ABCEF etc.

# DEMO



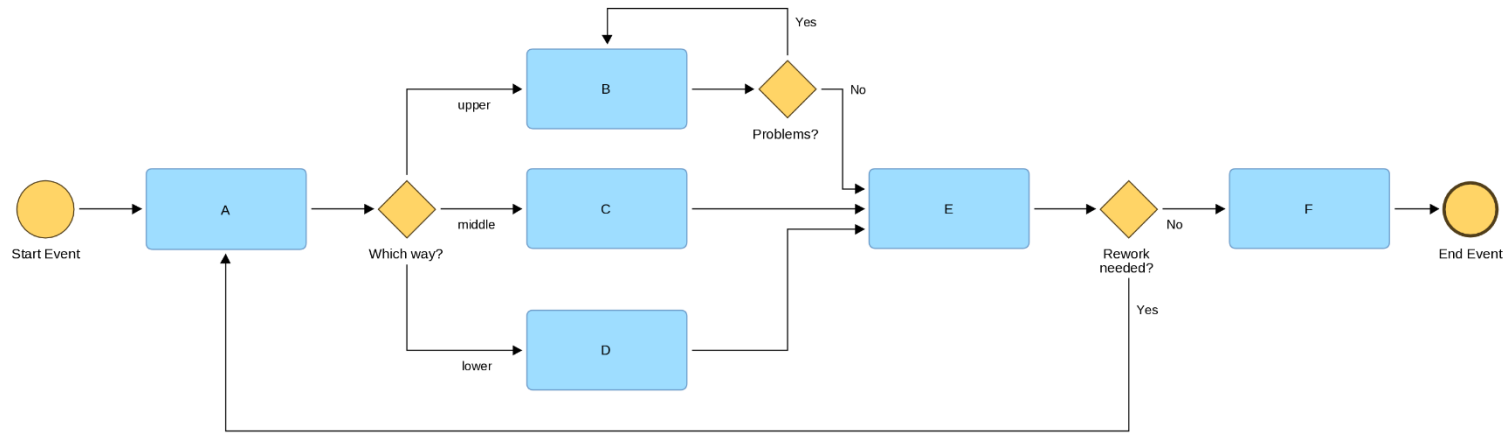
# BPMT Drones process

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Assembling drone process (first part):

- Process begins when all parts are ready
- Employees need to prepare frame, prepare electronics and prepare motors&propellers (in any order)
- After those steps are done employee can assemble the parts

# Rework and loops



Valid log: ABBEABEF, ACEACEF etc.

# DEMO



# BPMT Drones process

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Assembling drone process (continued):

- After the parts are assembled employee needs to configure the components
- Then, employee tests the drone
- If everything is OK process ends with a state Drone ready
- Otherwise employee needs to configure the drone again

# BPMN building blocks

- **Inclusive Gateway (OR)**



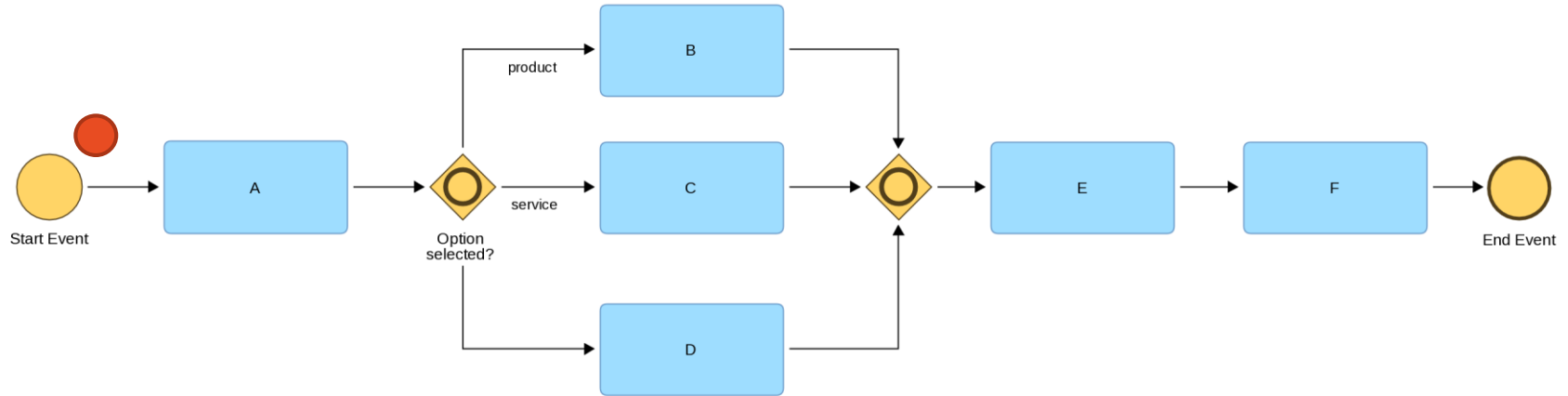
- Diamond with circle inside
- Allows you to split and merge (Synchronize) parallel alternative paths
- **SOME paths get a token – if their conditions are true**
- If a path does not have a condition it always gets token (like AND)
- **All active paths must complete before synchronization allows the process to continue**

- **Naming suggests logic of the splitting**

- Suggestion: question; answers on outgoing Sequence Flows (options) handling the results
- E.g. Element ordered?, Option selected?



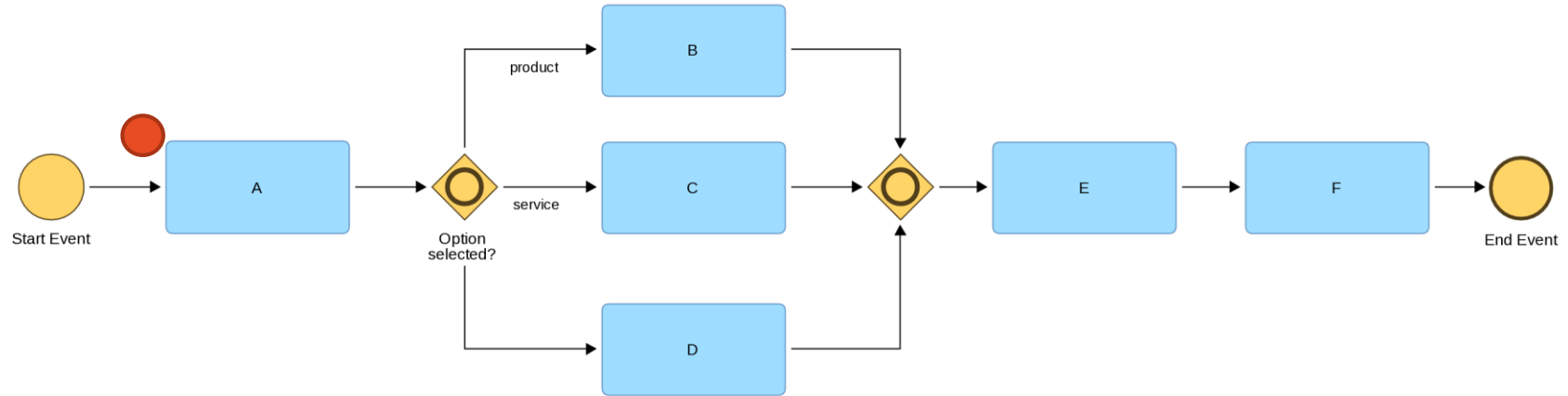
# Inclusive decision



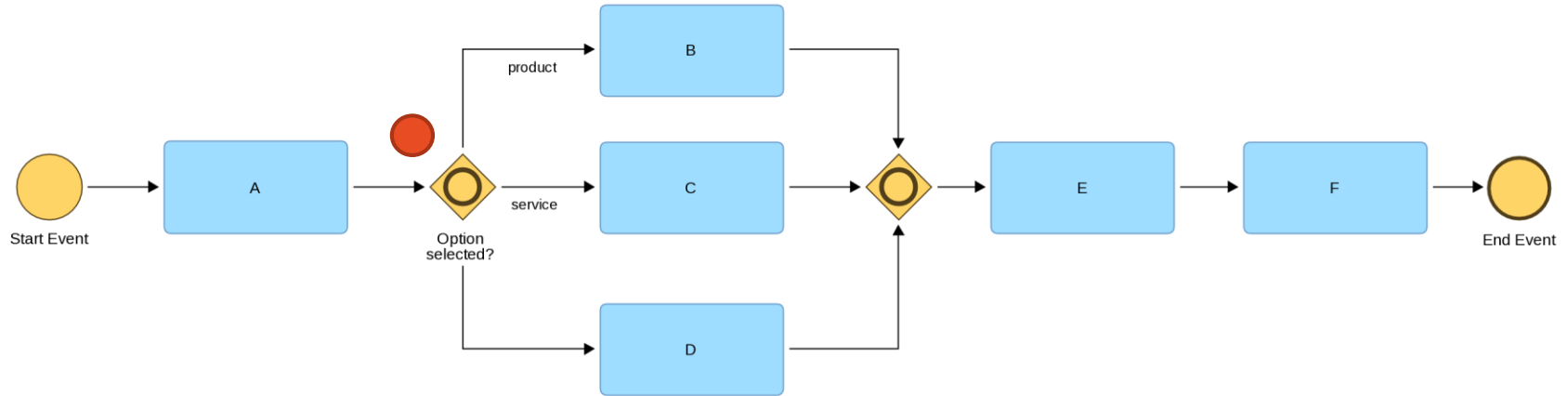
Mix of XOR & AND

# Inclusive decision

**BPM**  
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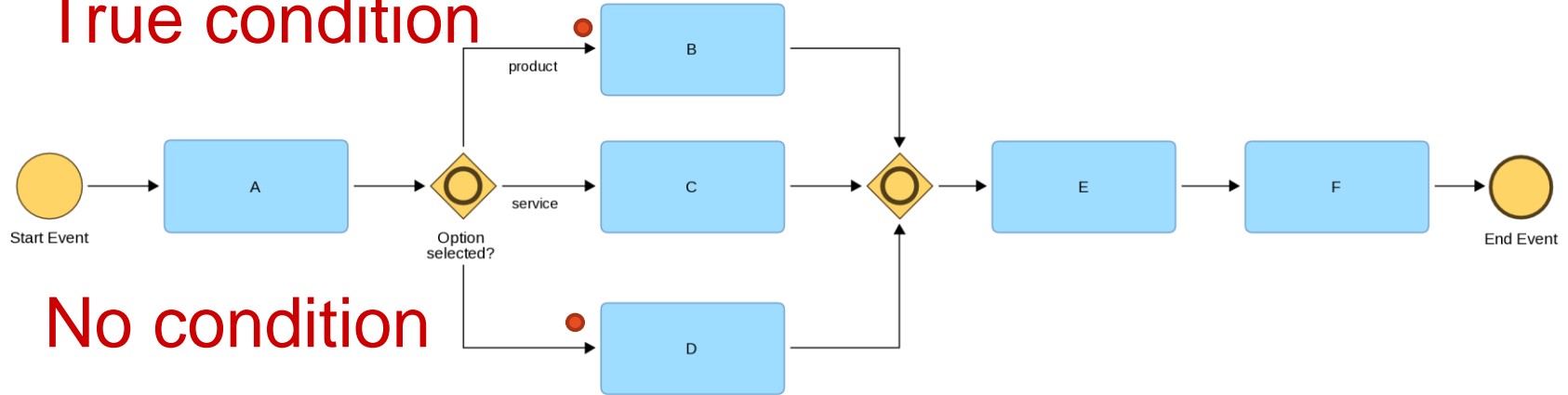
# Inclusive decision



Let's assume that customer  
ordered product only

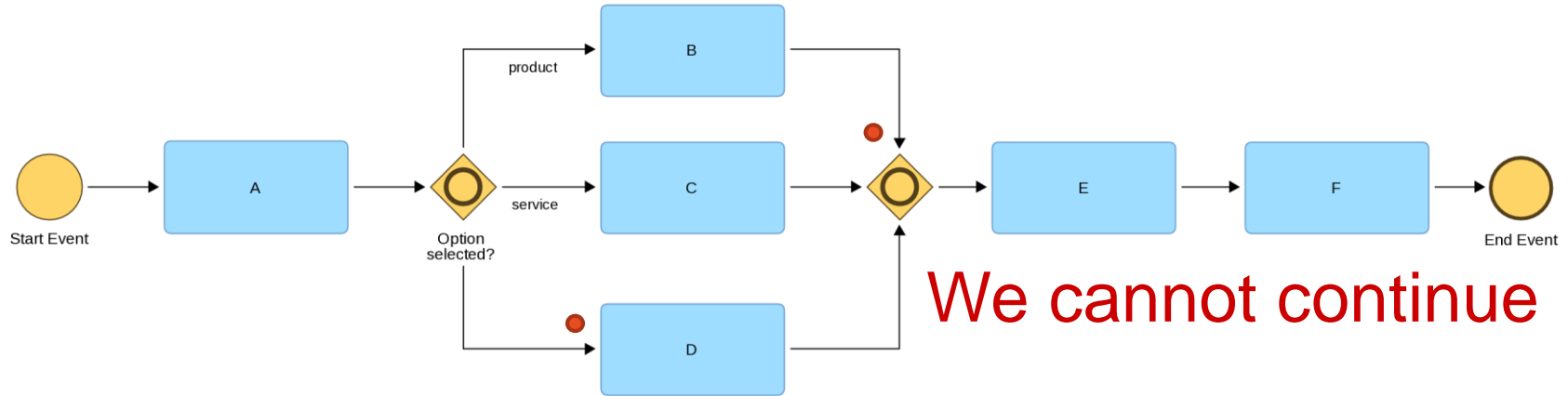
# Inclusive decision

True condition

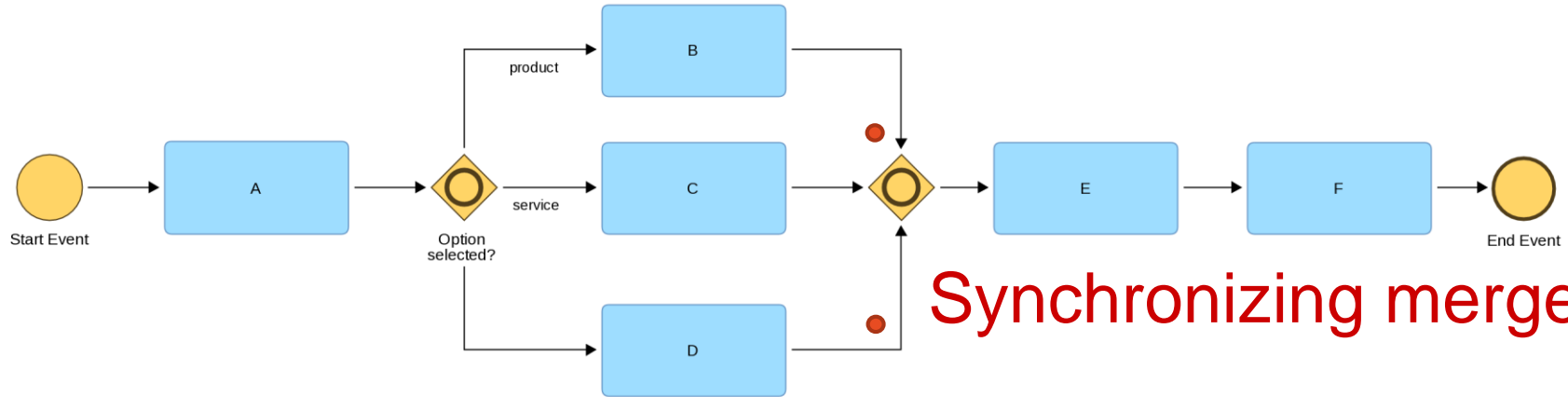


No condition

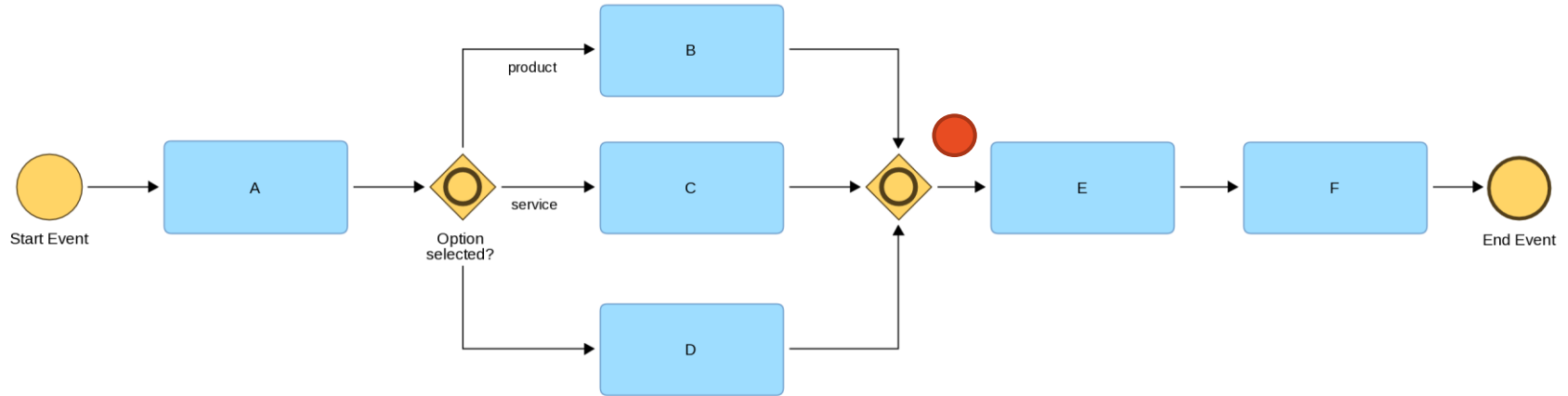
# Inclusive decision



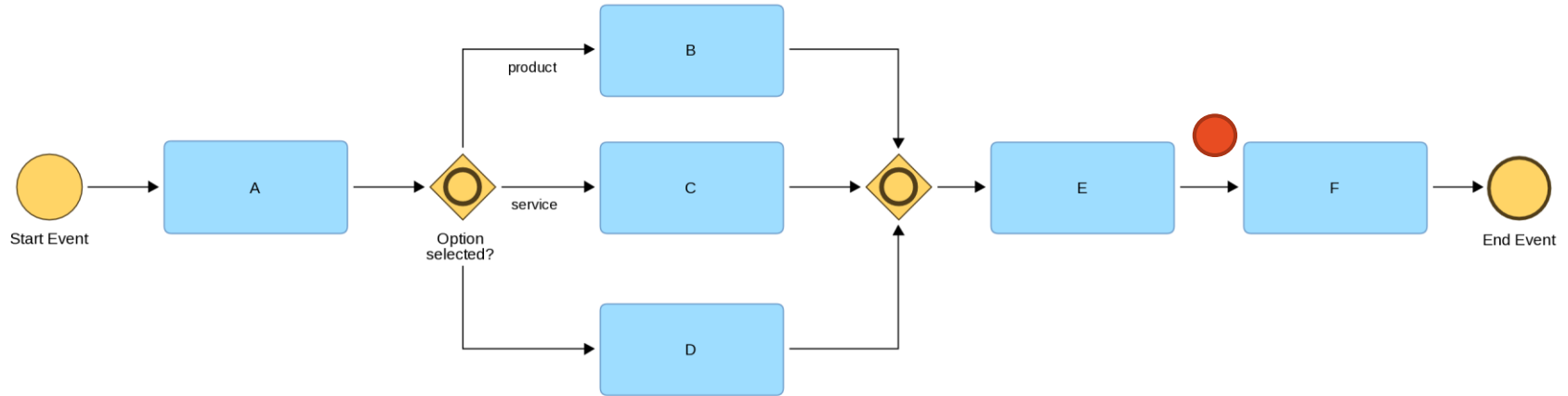
# Inclusive decision



# Inclusive decision

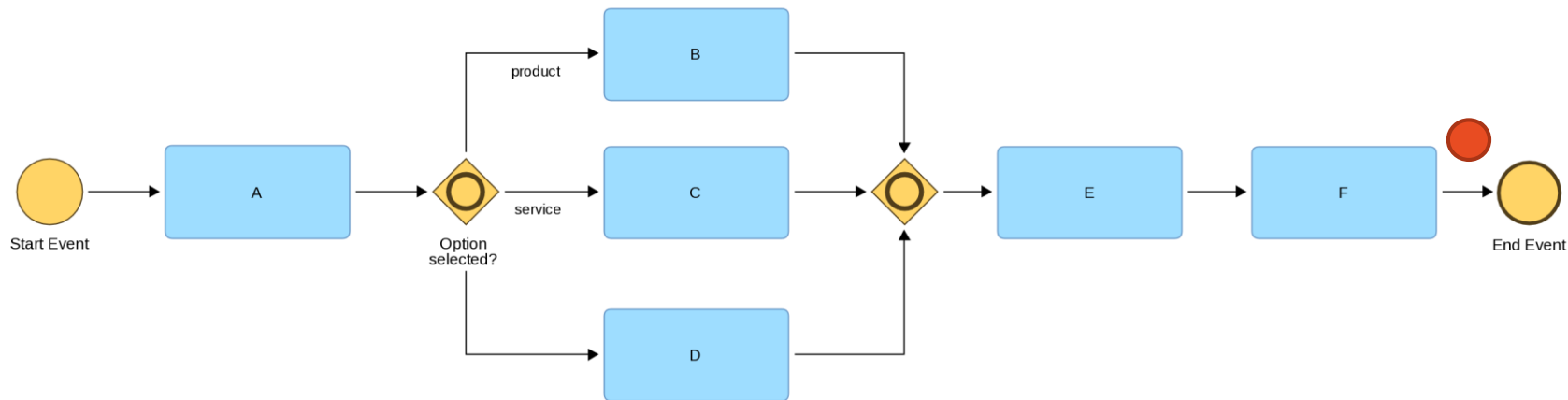


# Inclusive decision





# Inclusive decision



Our log: ABDEF

Valid logs for other cases: ABCDEF, ACDEF, ADEF

NOT valid: ABEF etc.

**“None of the above”**



# BPMN building blocks

- **Sequence Flow**

- Arrow drawn with a **solid line** and with a **solid arrowhead**
- Shows you how does the process flow: starting at the start event and finishing at the end event



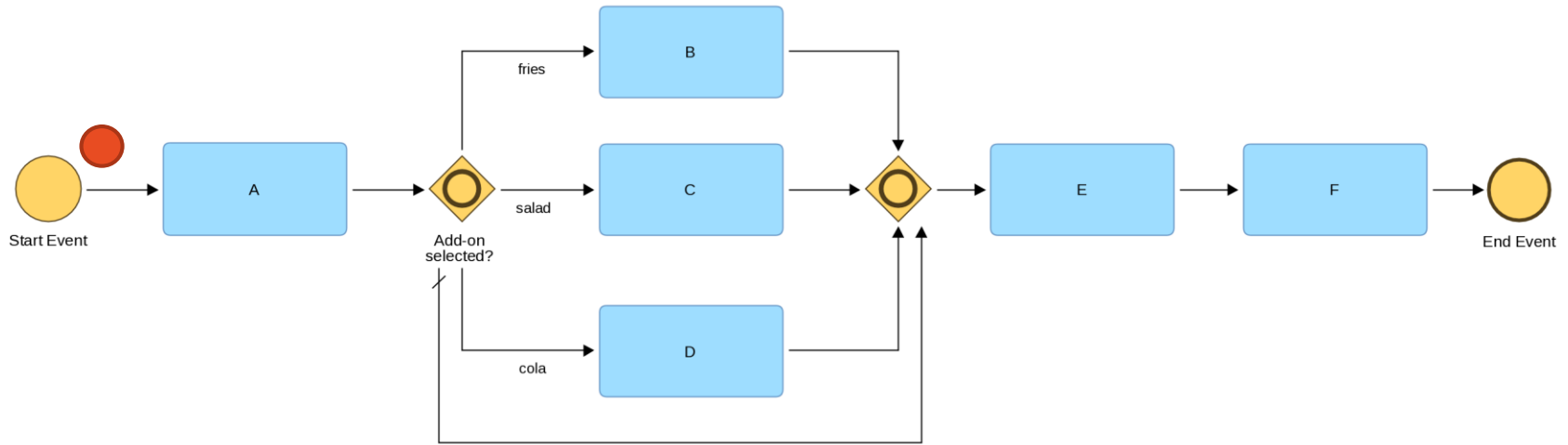
- **Default Sequence Flow**

- Has diagonal slash at the beginning
- Used for Exclusive (XOR) and Inclusive (OR) gateways
- In case where there is no true condition process would get stuck
- Default Sequence Flow gets a token in this case
- NOT a “happy path” or most common one



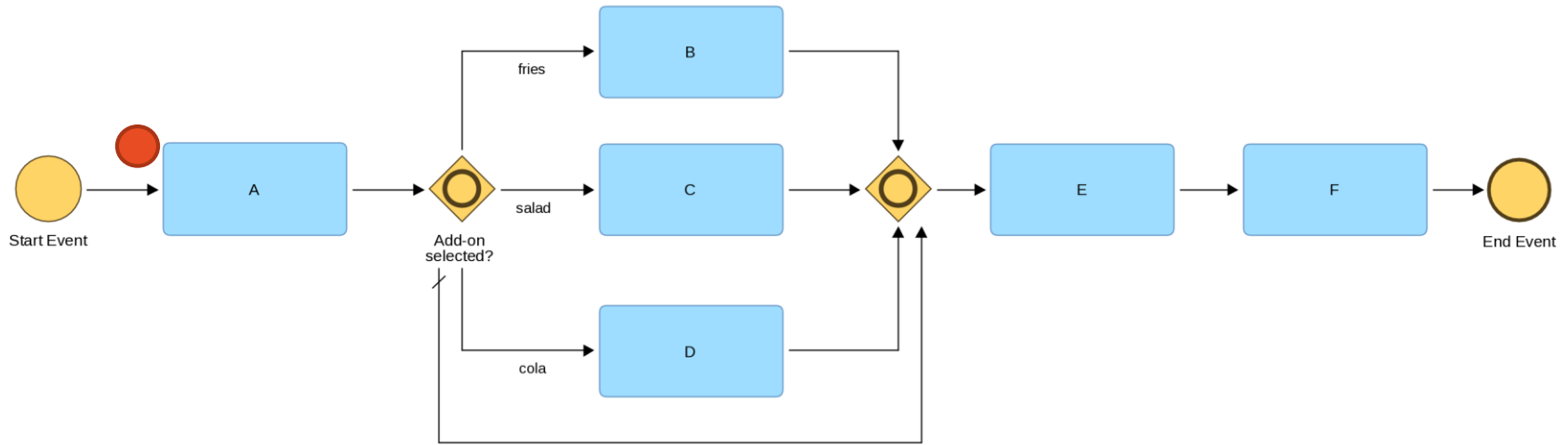
# Default Sequence Flow BPM

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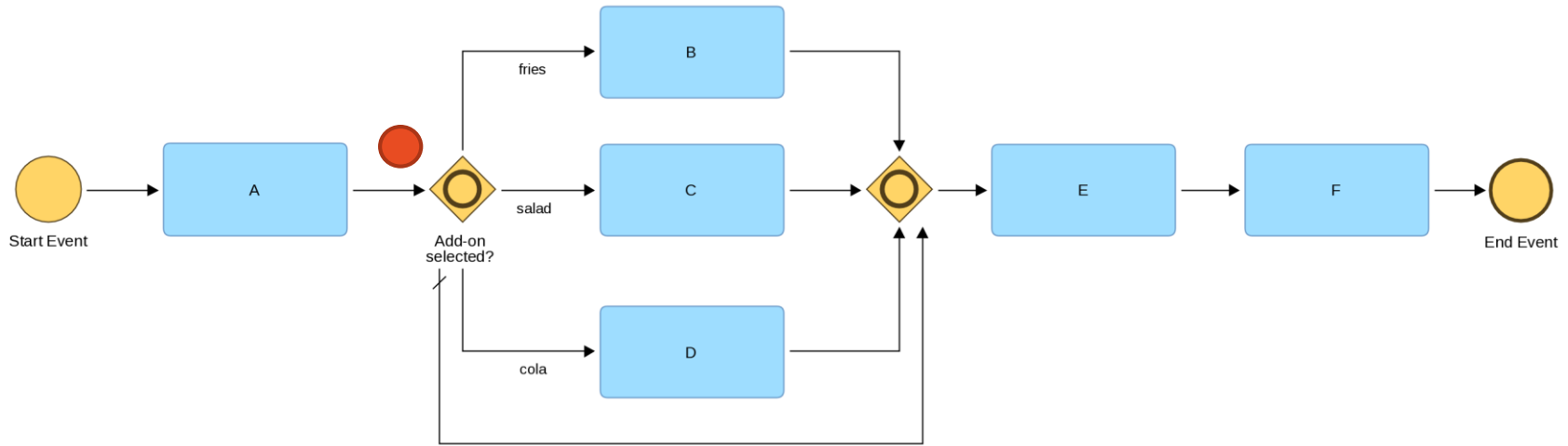
# Default Sequence Flow BPM

Tips.com



# Default Sequence Flow BPM

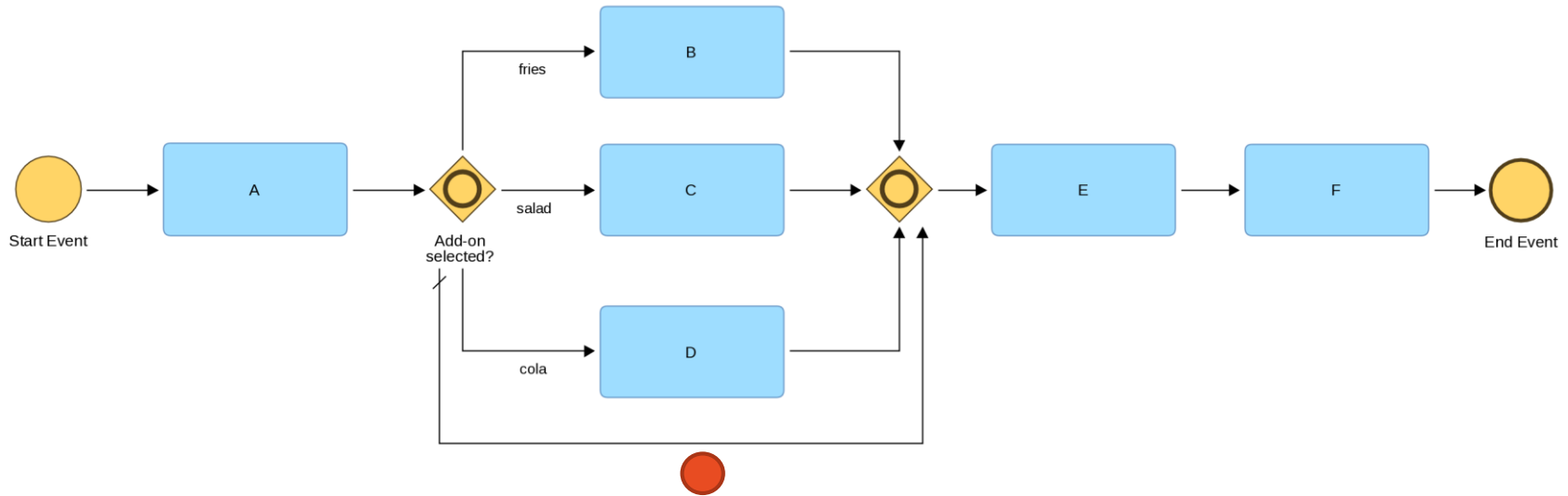
Tips.com



We would get stuck for “None of the above” option

# Default Sequence Flow BPM

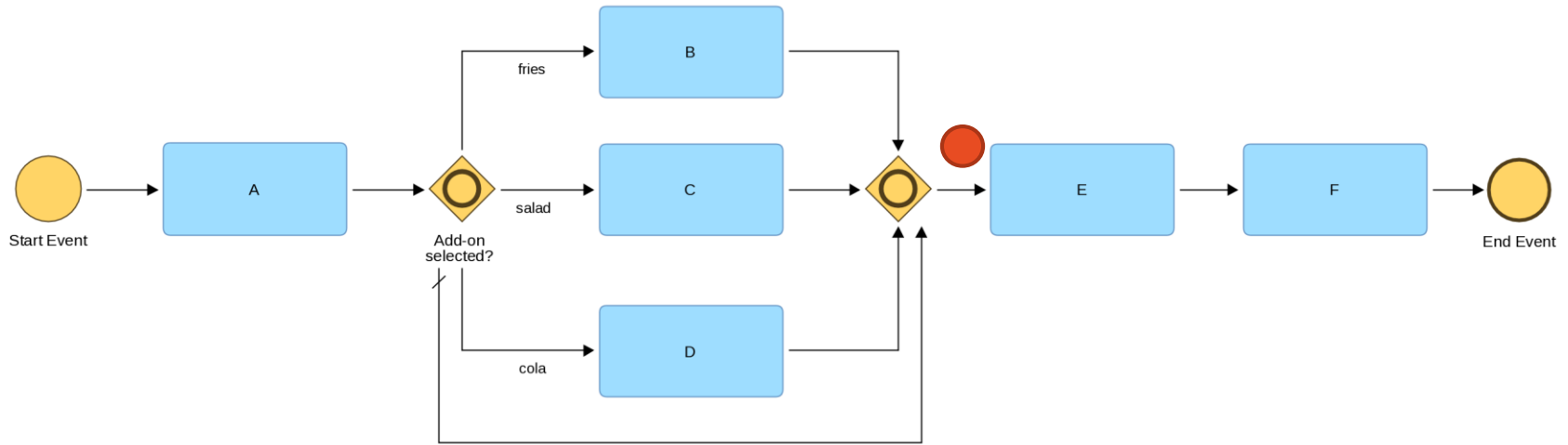
Tips.com



But Default Sequence Flow saves the day

# Default Sequence Flow BPM

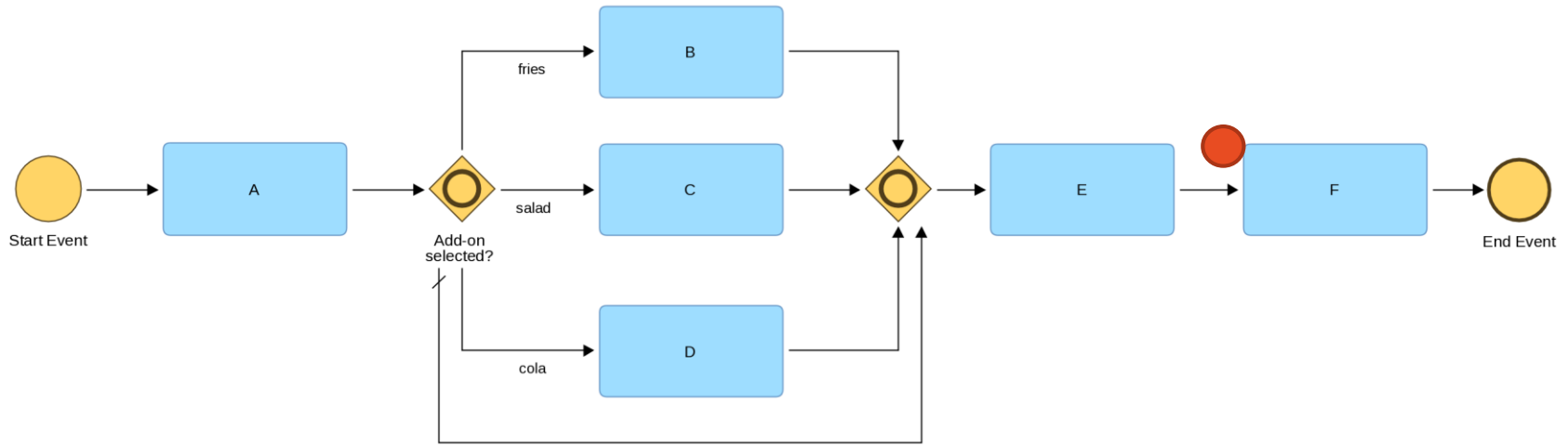
Tips.com





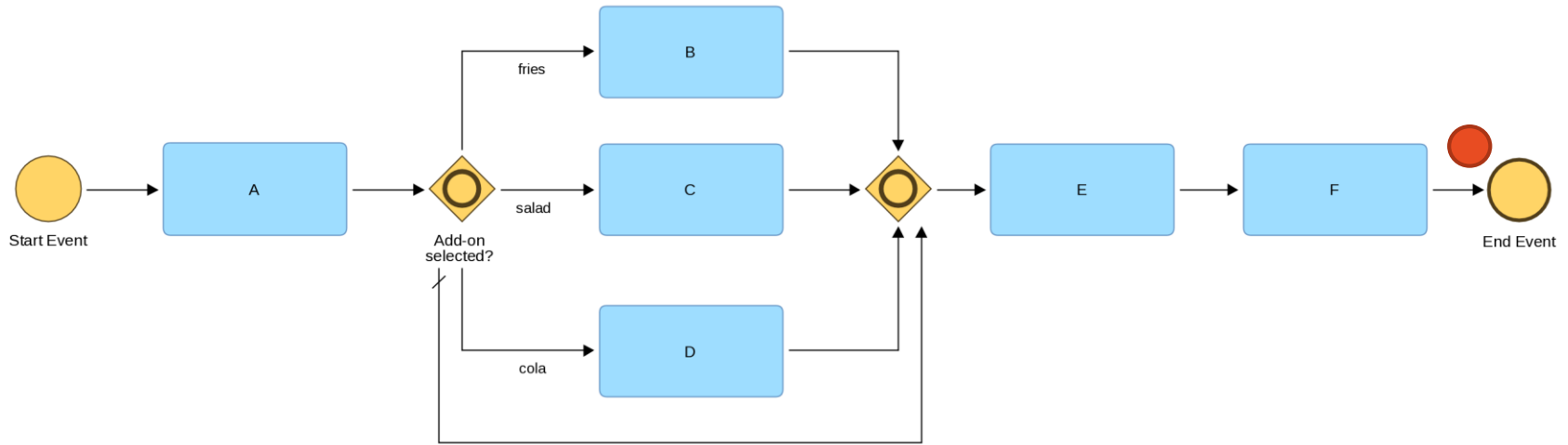
# Default Sequence Flow BPM

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# Default Sequence Flow BPM

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Our log: AEF

# DEMO



# BPMT Drones process

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Assembling drone process (continued):

- This part happens between Assemble parts and Configure components
- Employee needs to check add-ons in order
- If camera was ordered he needs to add it
- If GPS was ordered it needs to be added too
- When all add-ons are ready (in any order) components can be configured
- It is possible that no add-ons were selected