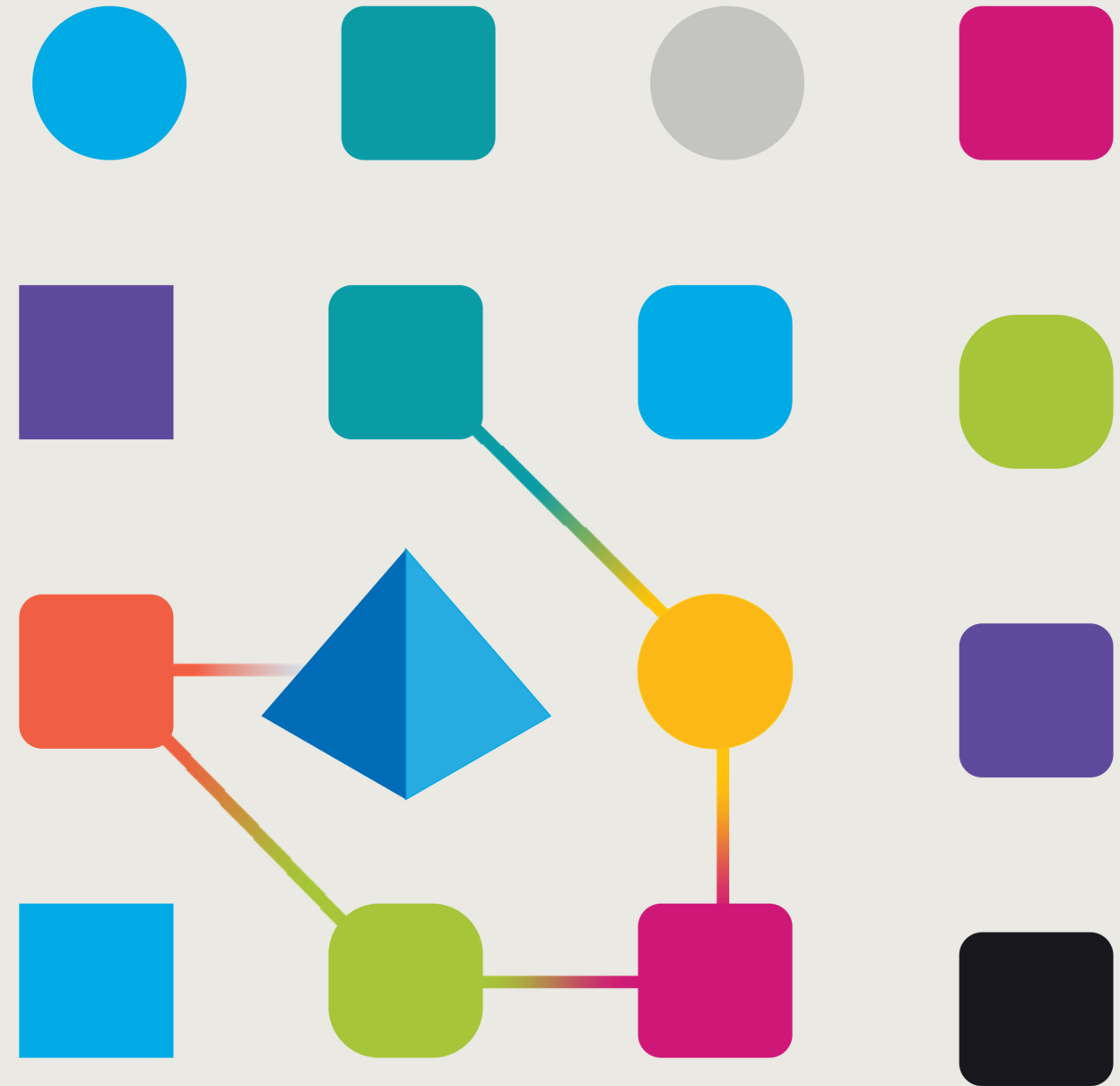


blueprism®

# WORK QUEUE & WEB APPLICATION MODELING

Blue Prism Korea  
Apr, 2022





# 교육 내용

본 세션은 다음 항목에 대한 이해 및 사용법 숙지를 목표로 합니다.

1. Work Queue의 개념 및 설정
2. Work Queue를 이용한 Work Item 처리 방법
3. 어플리케이션 모델러를 이용한 다양한 웹 컴포넌트 인식
4. 어플리케이션 모델링 모드 전환 및 사용 (브라우저 모드, UI Automation)
5. 웹 컴포넌트별 상호 작용 방법
6. Process 와 Business Object 작성 및 사용

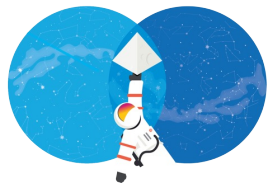
## I. Work Queue 의 개념 및 사용

- Work Queue (WQ) 생성 / 설정 (암호화, 재시도 횟수, Active Queue)
- Work Item 추가 및 WQ 파라미터
- Work Item 획득 및 처리
- Work Item 상태 조회
- Work Item 재시도
- Work Item Defer (지연실행)

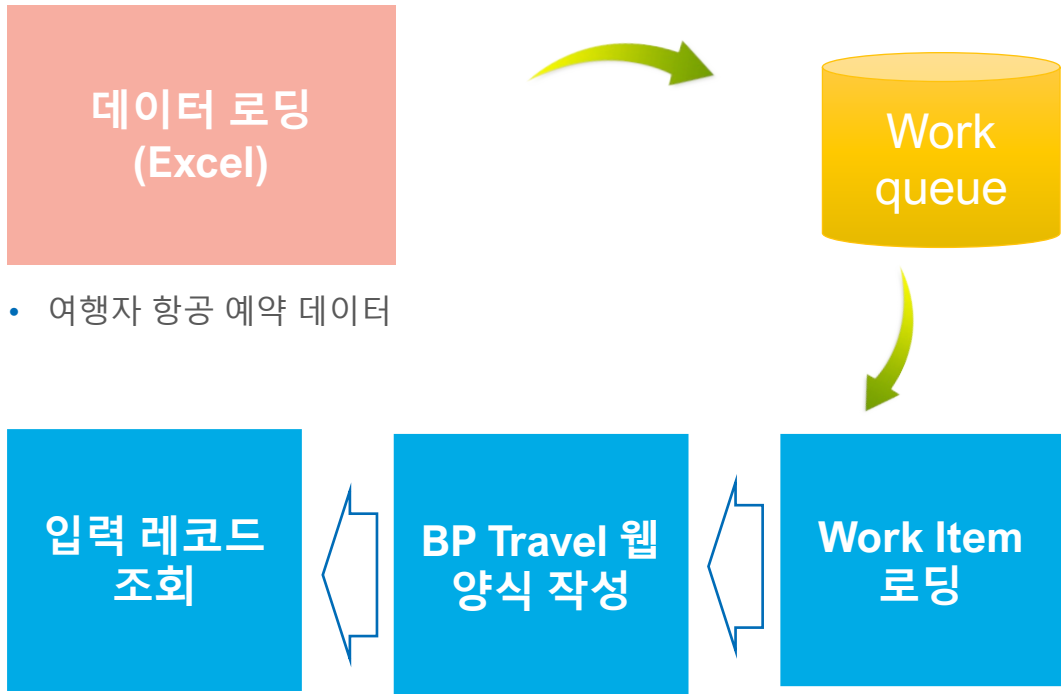
## II. 웹 브라우저 상호 작용

- 브라우저 세션의 실행 및 접속, 종료
- 브라우저 모델링
  - HTML 컴포넌트 식별: Input box, Radio, Checkbox, Drop-down, Table, Button
  - Dynamic path 설정 (WebPath/XPath)
  - 중복 컴포넌트 식별 (Match Index)
  - 브라우저 모델링 모드 변환 & UI Automation
- 웹 양식 작성, 페이지 이동

# Scenario



“엑셀로 저장된 가상의 항공 예약 데이터를 읽어 웹의 폼에 맞게 작성 및 등록하고 확인”



- 여행자 항공 예약 데이터

- 입력된 데이터 조회
- 웹에 데이터 등록 (<https://bptravel.blueprism.com>)

The screenshot shows the Blue Prism Studio interface. The left pane displays the 'Processes' tree with 'BPK Training' expanded, showing 'pr BP Travel - load data 33' and 'pr BP Travel - process data 33' highlighted with a red box. The right pane shows the 'Objects' tree with 'bo\_pr\_bp\_Travel\_33' highlighted with a red box. The top right pane is titled 'Create or edit existing Processes' and shows the selected object 'bo\_pr\_bp\_Travel\_33'.



# Process vs Object, Functions define

Business Process

## Business Process #1

1. 엑셀의 파일을 열어서
2. Work Queue에 입력

## Business Process #2

1. Work Queue에 저장된 Work Item을 획득하여,
2. 레코드 단위로 웹에 등록.
3. 등록된 데이터에 대해 이름을 기준으로 검색
4. 입력 결과 확인



Business Object

### Excel connector

- 엑셀 인스턴스 생성
- 엑셀 파일 열기
- 워크시트의 값 로딩

[...]

### Work Queue connector

- WQ에 work Item 입력
- WQ로부터 work Item 획득

[...]

### BP Travel connector

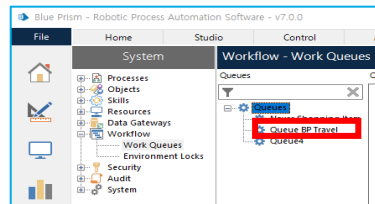
- 어플리케이션 모델링(웹 컴포넌트 식별, Dynamic path 인식)
- 모델링 방식 전환
- 브라우저 실행, 로그인
- 웹 양식 작성 및 상호작용(값 입력, Button/Check box/Radio button, 링크 이동)



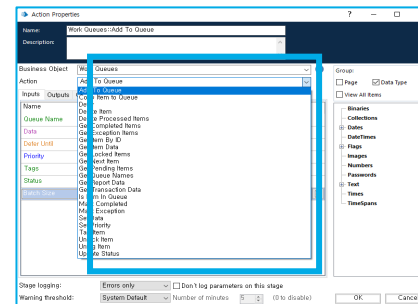
Applications



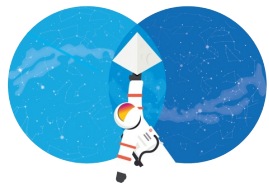
Excel



Work Queue

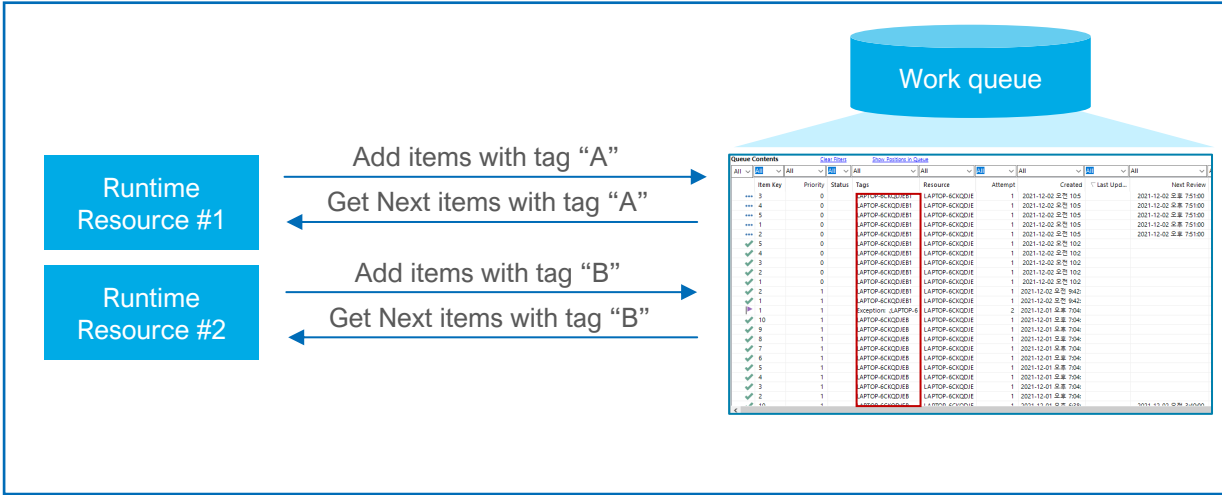


Browser  
(bluprism.bptravel.com)

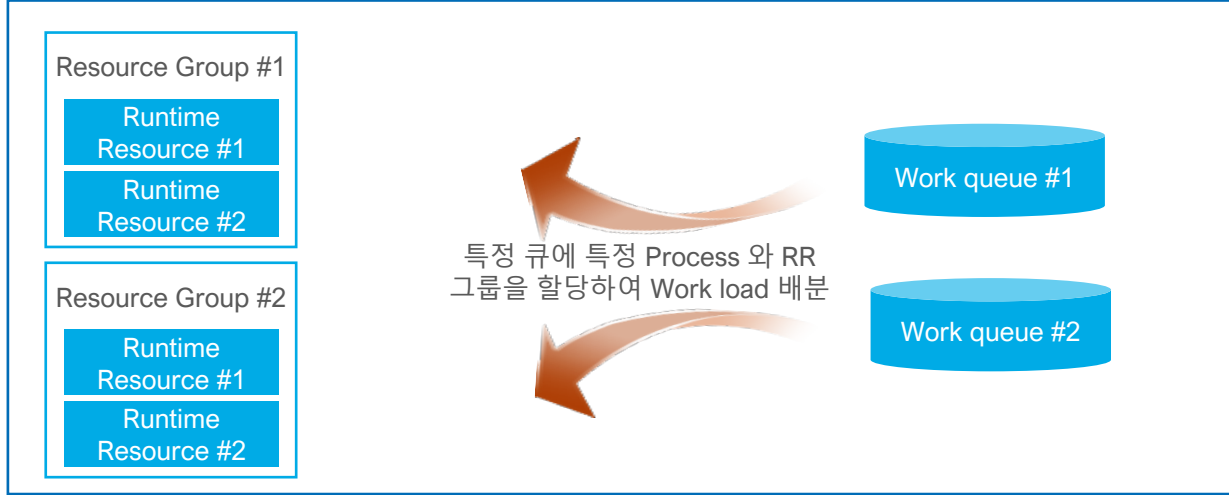


# Work Queue

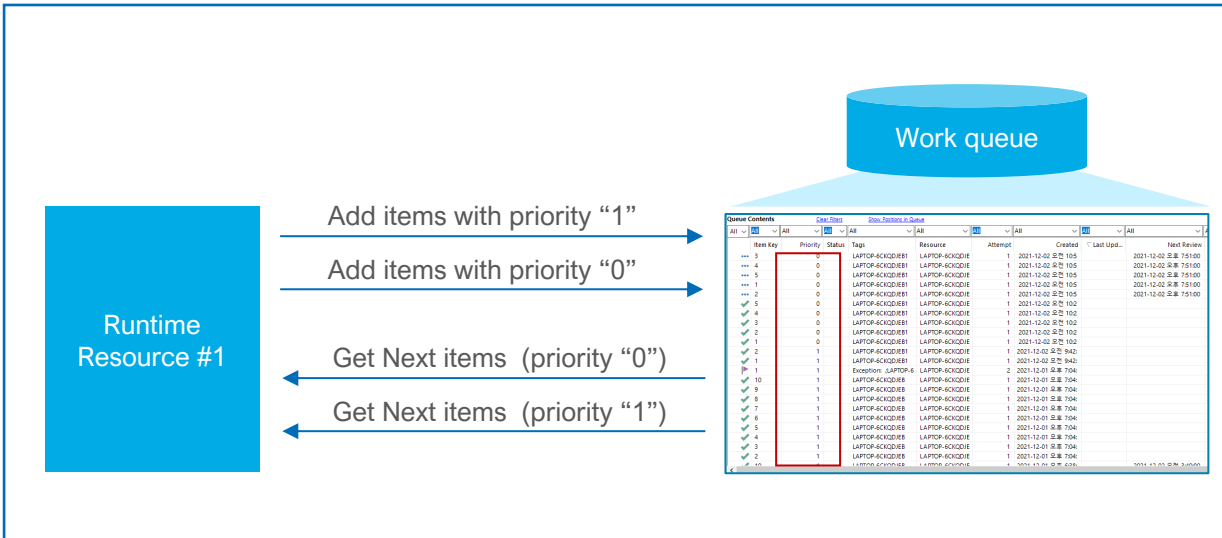
## Work Item Put/Get with Tag



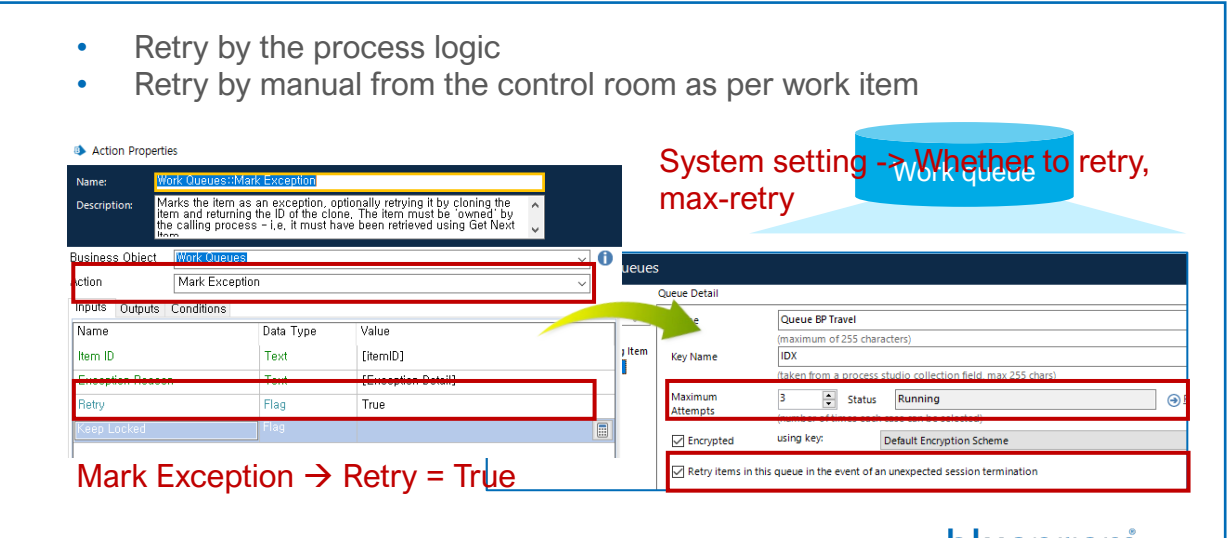
## Group based Work Item distribution



## Work Item Put/Get with Priority



## Exception Retry





## 실습 #1

# BP Travel – Load Data 프로세스 제작



# 실습 #1-0 (1/2)

## Process #1:

### BP Travel – data load

#### <Preparation>

1. Blue Prism 스튜디오 로그인
2. Business Object 확인
  - Visual Basic Objects의 MS Excel VBO
  - Internal Business Object의 Work Queue Object
3. Create Quote.xlsx 파일 특정 위치에 저장.

# 실습 #1-1 (2/2)

## Process #1:

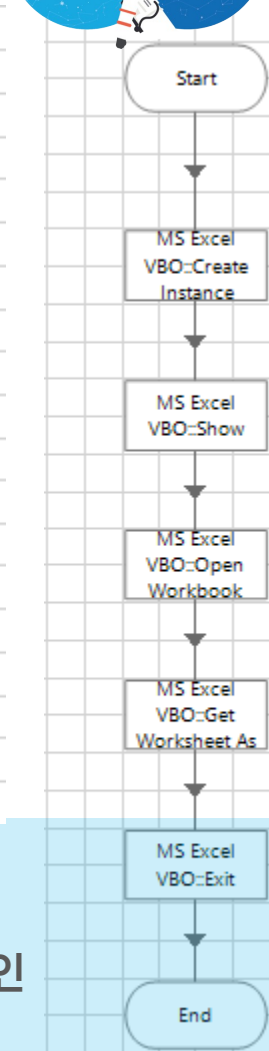
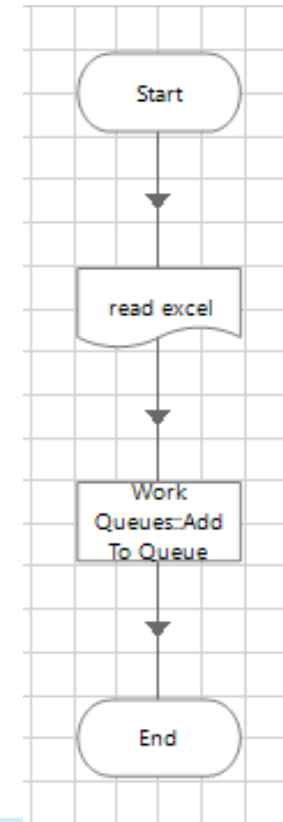
## BP Travel – data load

### <Data Loading>

1. Work Queue 생성 / 설정
2. 신규 Process #1 생성 (load data)
3. 엑셀 파일 읽기
4. Work Queue에 데이터 로딩
5. 페이지 분리

### Self-Exercise (3 min)

해당 프로세스를 실행하고 control room에서 신규 입력된 Work Item 확인







## 실습 #2

# BP Travel – 오브젝트 제작

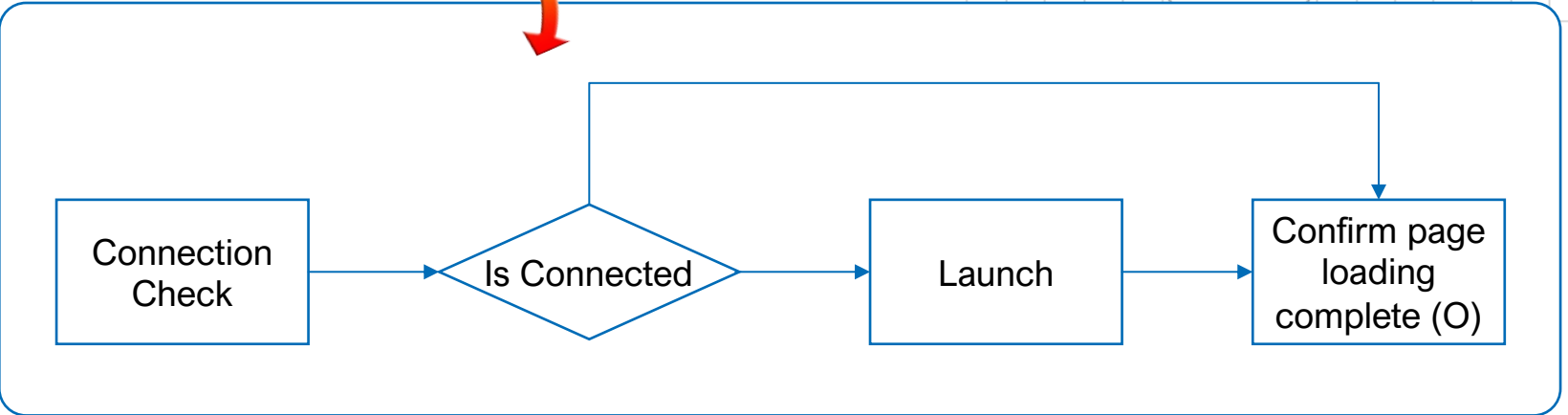
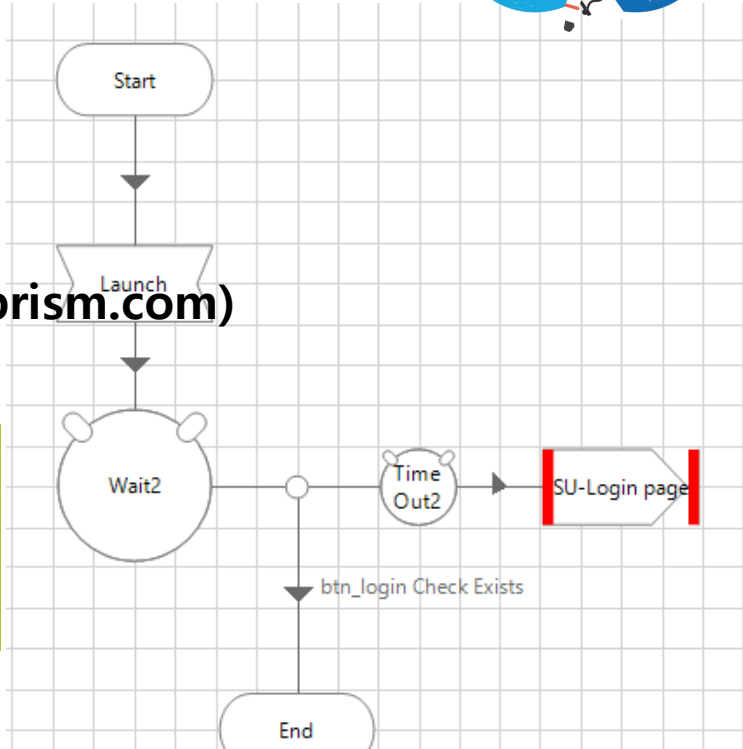
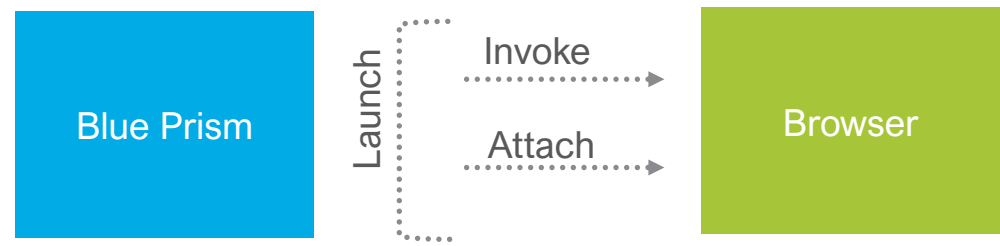


# 실습 #2-1

Business Object:  
BP Travel Object

## <Browser Launch (Launch page)>

1. 신규 Business Object 생성
2. 신규 Application Model 생성
3. Brower Launch (<https://bptravel.blueprism.com>)





# 실습 #2-2

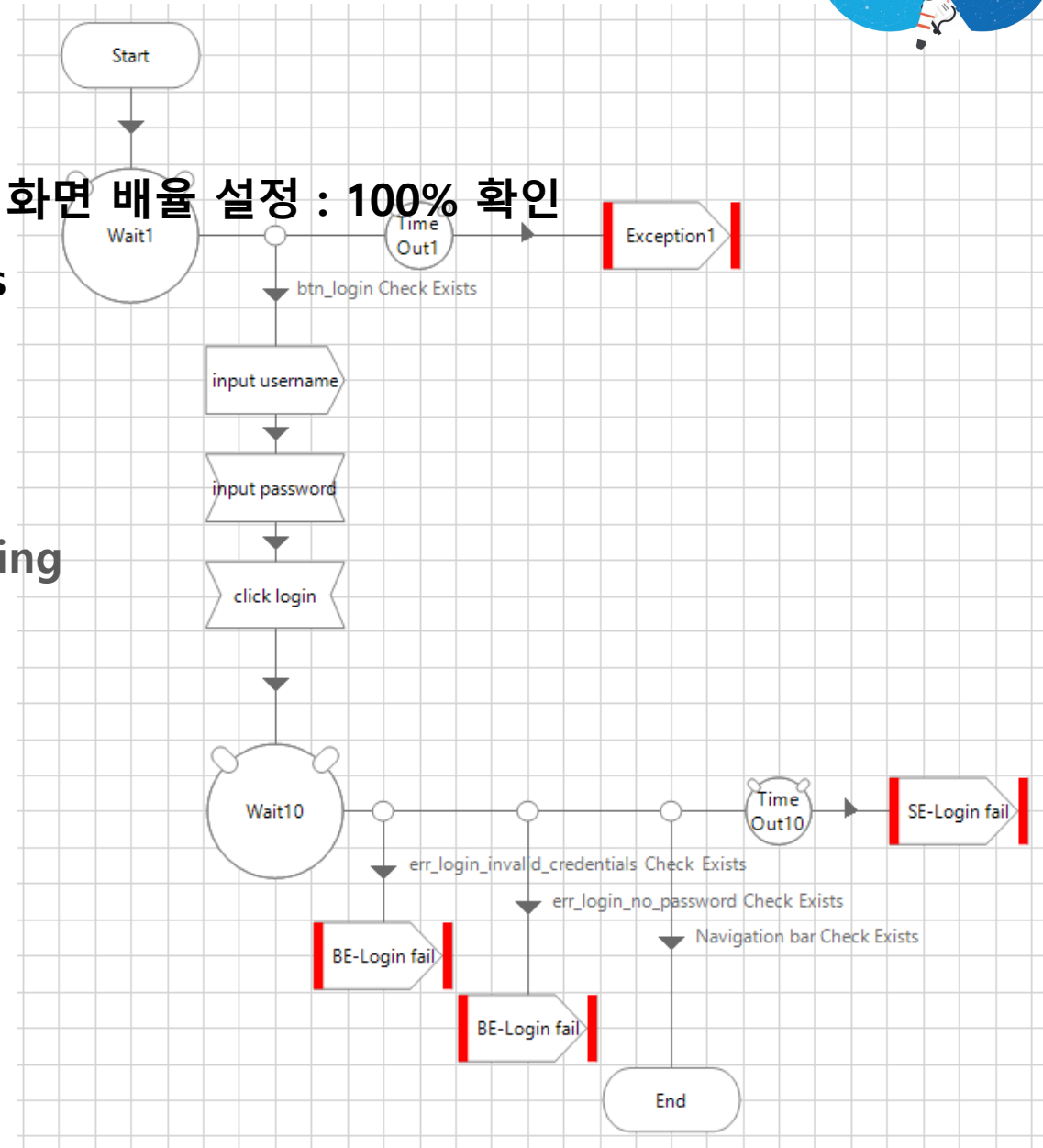
## Business Object: BP Travel Object

### <Preparation>

1. 디스플레이 설정 → 화면 배율 설정 : 100% 확인
2. Kill other browsers

### <Log-in (Login page)>

1. Application Modeling
  - 1) Input box
  - 2) Button
  - 3) Footer
  - 4) Close mark
  - 5) Error messages
2. Action stages
  - 1) Write stage
  - 2) Global Send Keys
  - 3) Wait stage





# 실습 #2-3

## Business Object: BP Travel Object

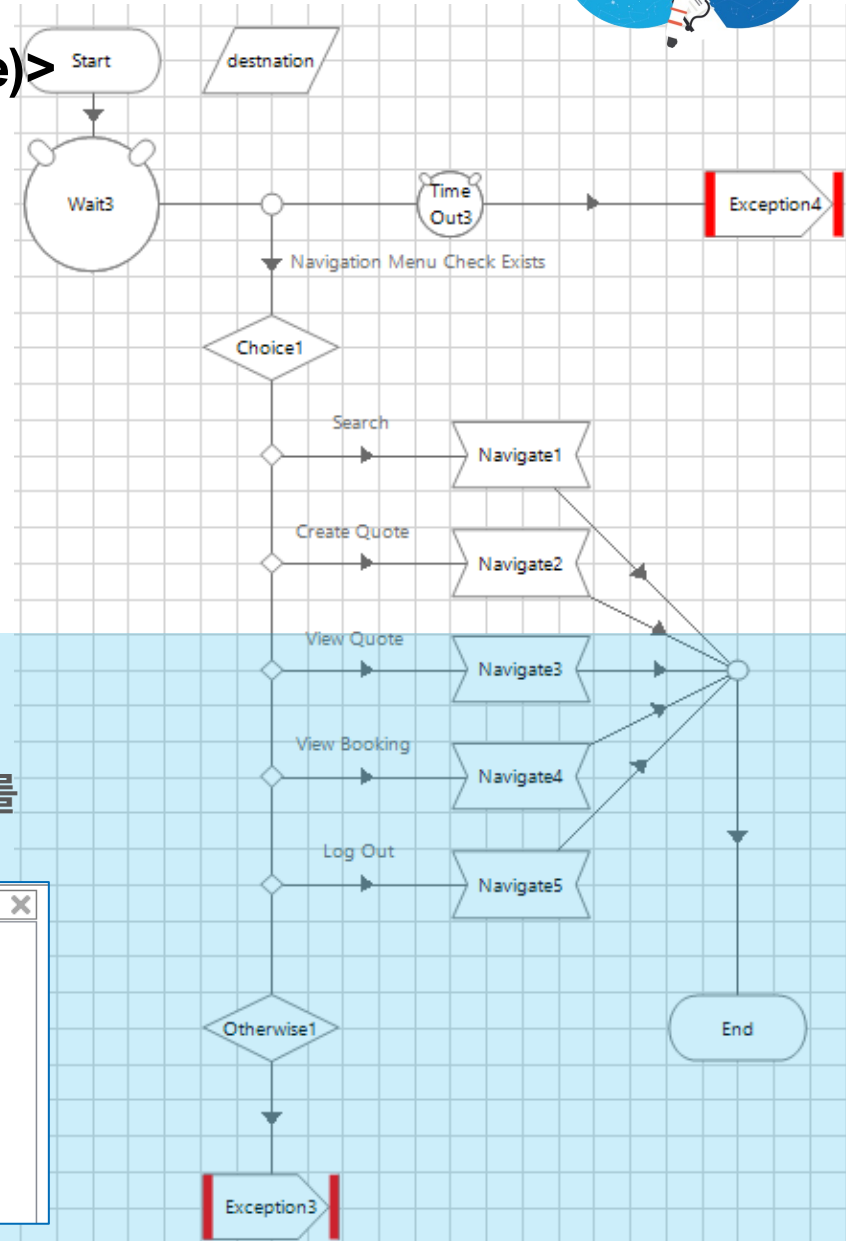
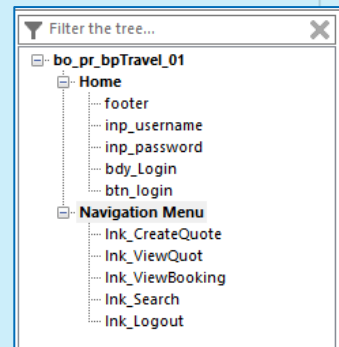
### <Navigation Menu (NavigateTo page)>

1. Application Modeling
  - 1) Navigation sidebar (div)
  - 2) Link (href)
  
2. Action stages
  - 1) Multiple choices

### Exercise (3 min)

Application Modeler를 이용해 다음 링크를 인식하여 Modeler 등록

- Search
- Create Quote
- View Quote
- View Booking
- Log Out





# 실습 #2-4(1/2)

Business Object:

BP Travel Object

## <Create Quote (1/2)>

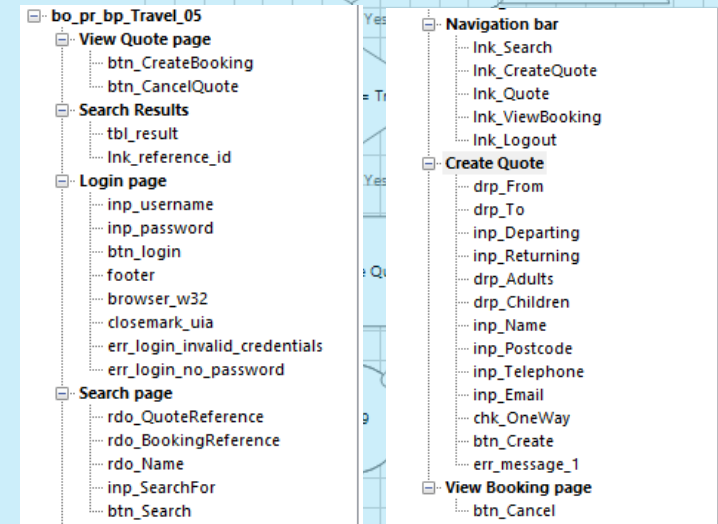
### 1. Application Modeling

- 1) Input box
- 2) Dropdown list
- 3) Check box
- 4) Button

### Exercise (5min)

Application Modeler를 이용해 웹 페이지의 모든 컴포넌트 인식 및 등록

From	<input type="text"/>
To	<input type="text"/>
Departing	<input type="text"/>
One Way	<input type="checkbox"/>
Returning	<input type="text"/>
Adults	<input type="text"/>
Children	<input type="text"/>
Name	<input type="text"/>
Postcode	<input type="text"/>
Telephone	<input type="text"/>
Email	<input type="text"/>
<input type="button" value="Create Quote"/>	



# 실습 #2-4(2/2)

Business Object:

BP Travel Object

## <Create Quote (2/2)>

1. 웹 양식 채우기
  - 1) Input box
  - 2) Drop box (Combo)
  - 3) Check box
2. Wait stage
3. Decision stage
4. Wait stage

NOTE 날짜 포맷 변경  
FormatDate([date], "dd/MM/yyyy")

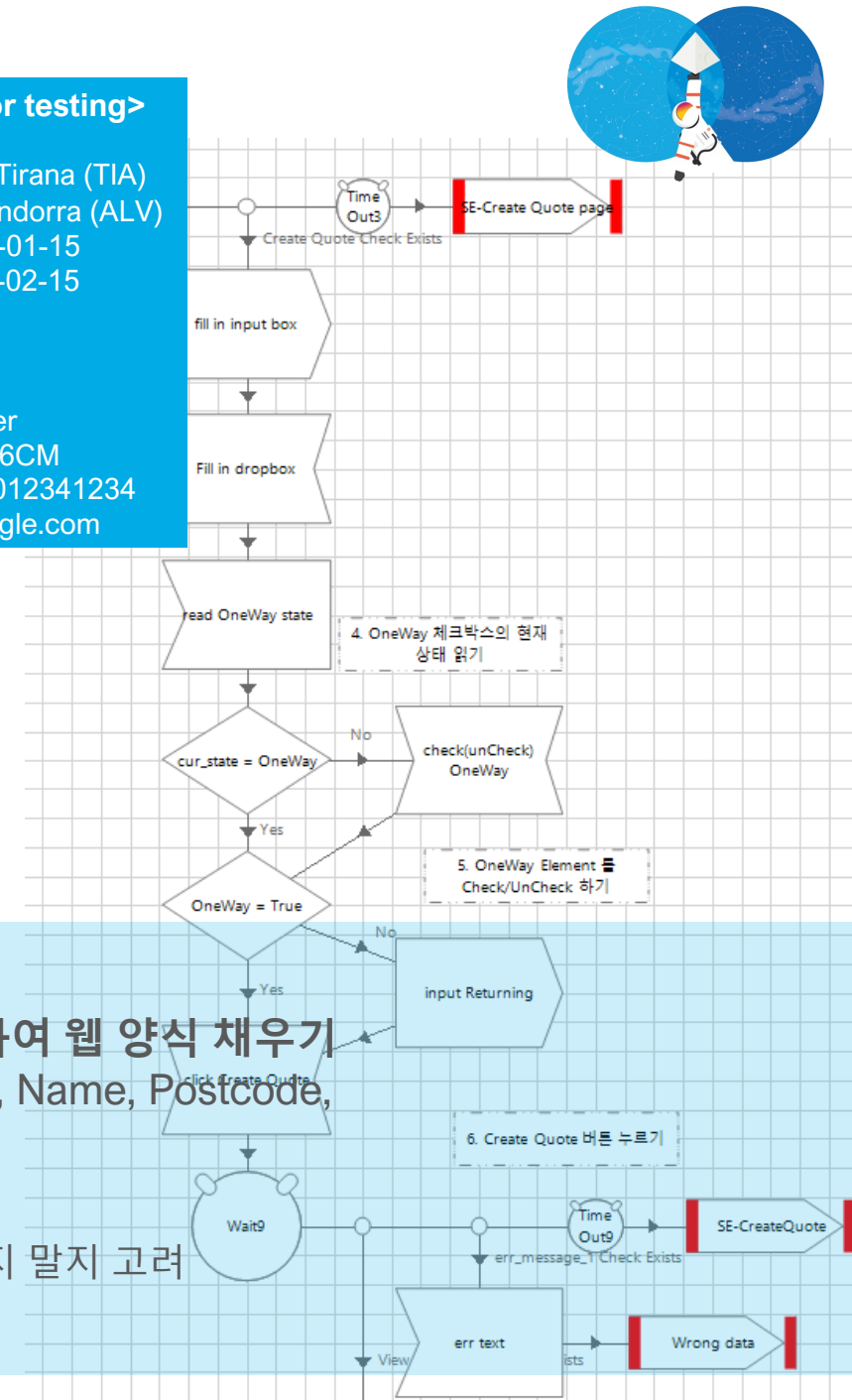
### <Initial value for testing>

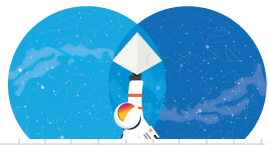
- From: Albania - Tirana (TIA)
- To: Andorra - Andorra (ALV)
- Departing: 2022-01-15
- Returning: 2022-02-15
- One Way: False
- Adults: 2
- Children: 1
- Name: Passenger
- Postcode: LL26 6CM
- Telephone: 821012341234
- Email: abc@google.com

## Exercise (5 min)

Input box, Drop box, Checkbox를 활용하여 웹 양식 채우기  
: To, One Way, Returning, Adults, Children, Name, Postcode, Telephone, Email 등

- 항목별 변수 생성하고 초기값 설정하여 시험
- One-Way 값에 따라 Returning 항목을 넣을 지 말지 고려
- 예외처리 고려



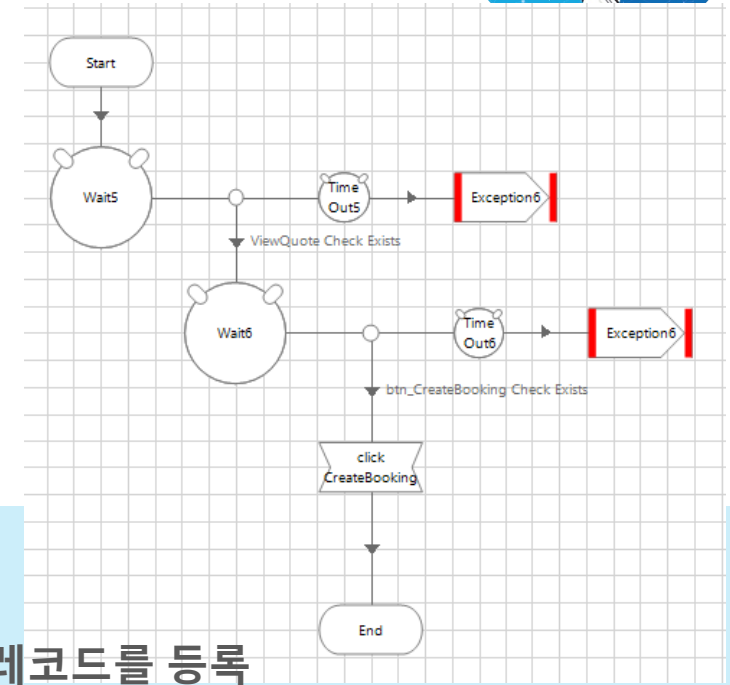


# 실습 #2-5

## Business Object: BP Travel Object

### <View Quote >

- 1. Application Modeling
- 2. Action stages
  - 1) Navigate – Button click

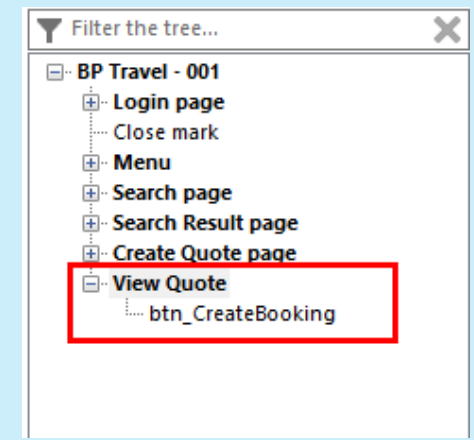


### Exercise (1 min)

해당 페이지에서 Create Booking 버튼을 눌러 레코드를 등록

Quote Reference	20001
From	Albania - Tirana (TIA)
To	Andorra - Andorra (ALV)
Departing	15/01/2022
Returning	One-way
Adults	2
Children	1
Total	166.00
Name	최홍주
Postcode	LL26 6CM
Telephone	821012341234
Email	abc@google.com
<input type="button" value="Cancel Quote"/> <input type="button" value="Create Booking"/>	

Version 1.0





# 실습 #2-6

## Business Object: BP Travel Object

### <Search>

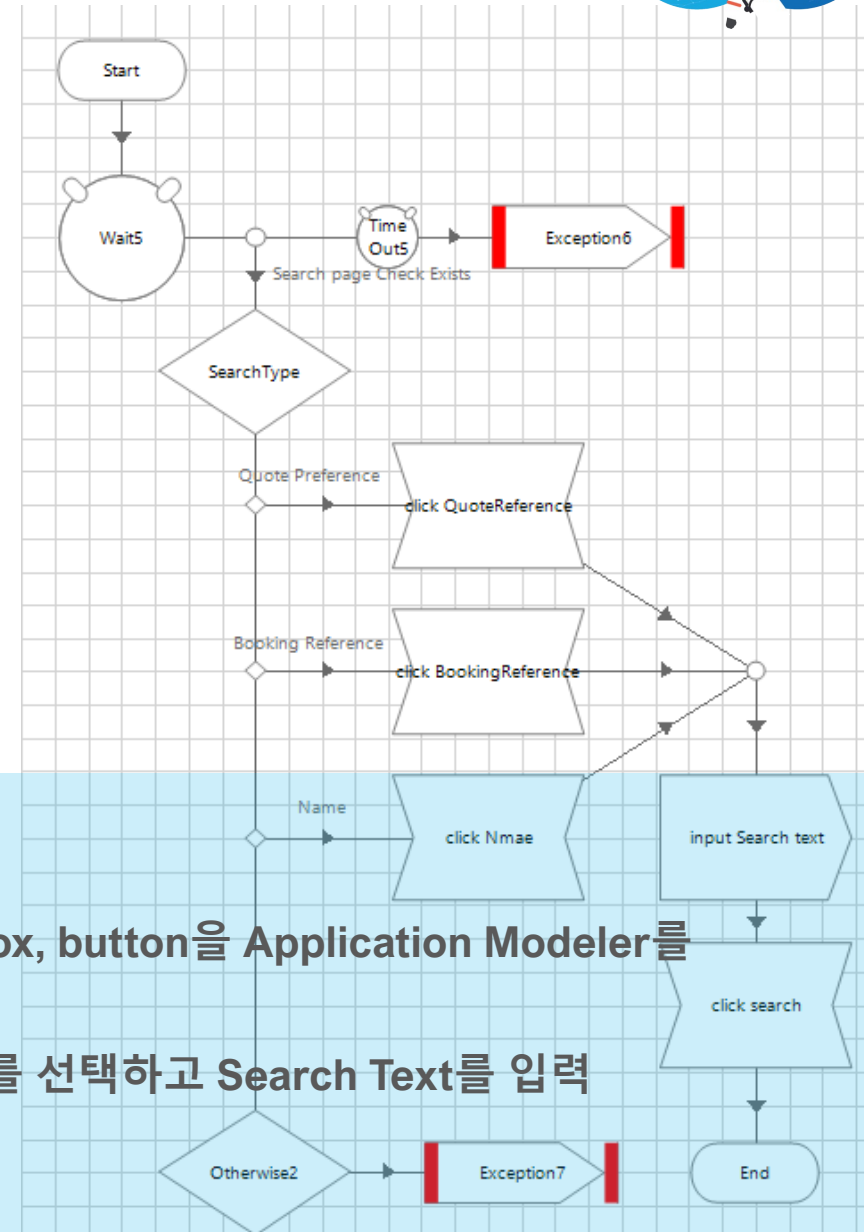
1. Application Modeling
2. Action stages
  - 1) Wait stage
  - 2) Multiple choice stage
  - 3) Write stage
  - 4) Navigate Stage

### Exercise (5 min)

Search page를 구성하는 Radio, Input box, button을 Application Modeler를 이용하여 인식.

Search Type에 따라 해당 Search Radio를 선택하고 Search Text를 입력

Search Button 클릭







# 실습 #2-7

Business Object:  
BP Travel Object

## <Search Results>

### 1. Application Modeling

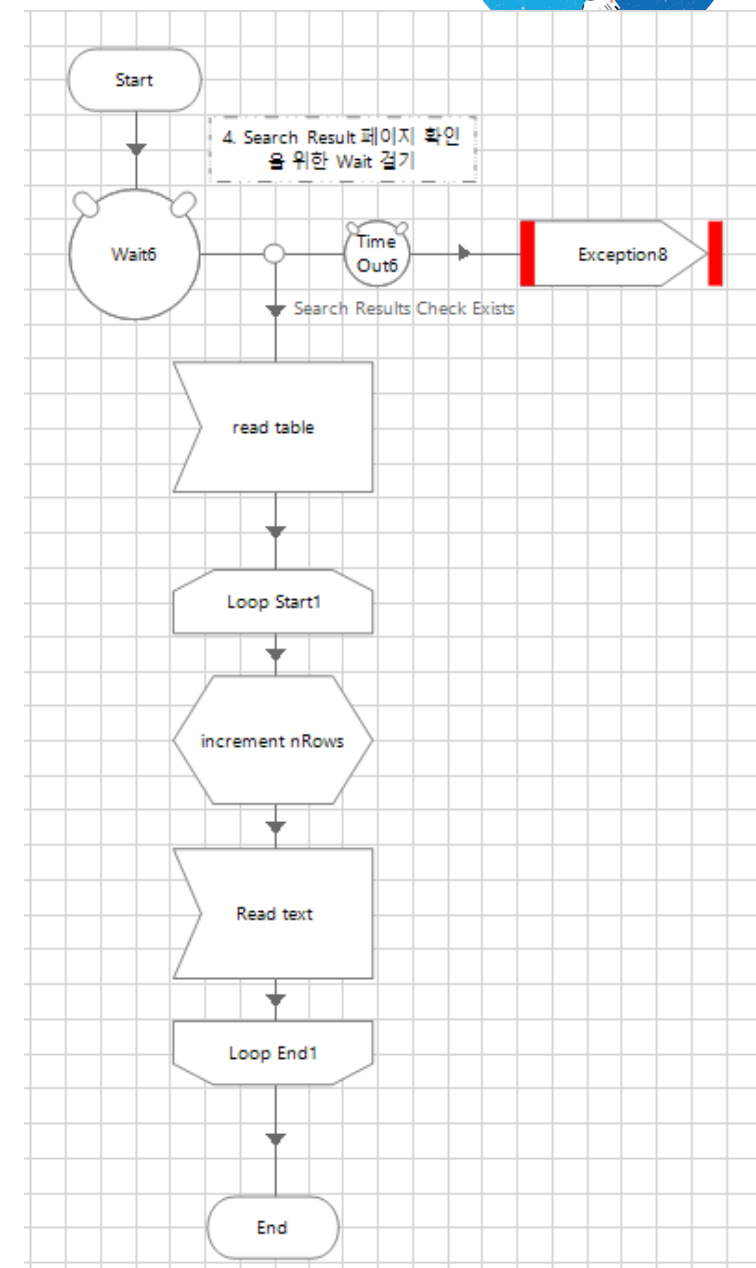
- 1) Table
- 2) Dynamic path (Path/Xpath)

Please select one of the search results below

Reference	Name	From	To
Q 10001	Sidney Nazzario	Bordeaux (BOD)	Bologna (BLQ)
B 10002	Sue Harg	Dortmund (DTM)	Gothenburg (GOT)
Q 10003	Paul Greenwood	Dublin (DUB)	Nice (NCE)
B 10004	Melanie Emir	Paris (CDG)	Liverpool (LPL)
Q 10005	Don Fredricson	Graz (GRZ)	Madrid (MAD)
B 10006	Anne Sunder	Brescia (VBS)	Ghent (GNE)
Q 10007	Paul Davis	Paris (ORY)	Malmo (MMA)
B 10008	Anne Popov	Copenhagen (CPH)	Vilnius (VNO)

### 2. Action stages

- 1) Read
- 2) Loop w/ Collection data
- 3) Calculation





# 실습 #2-8

Business Object:  
BP Travel Object

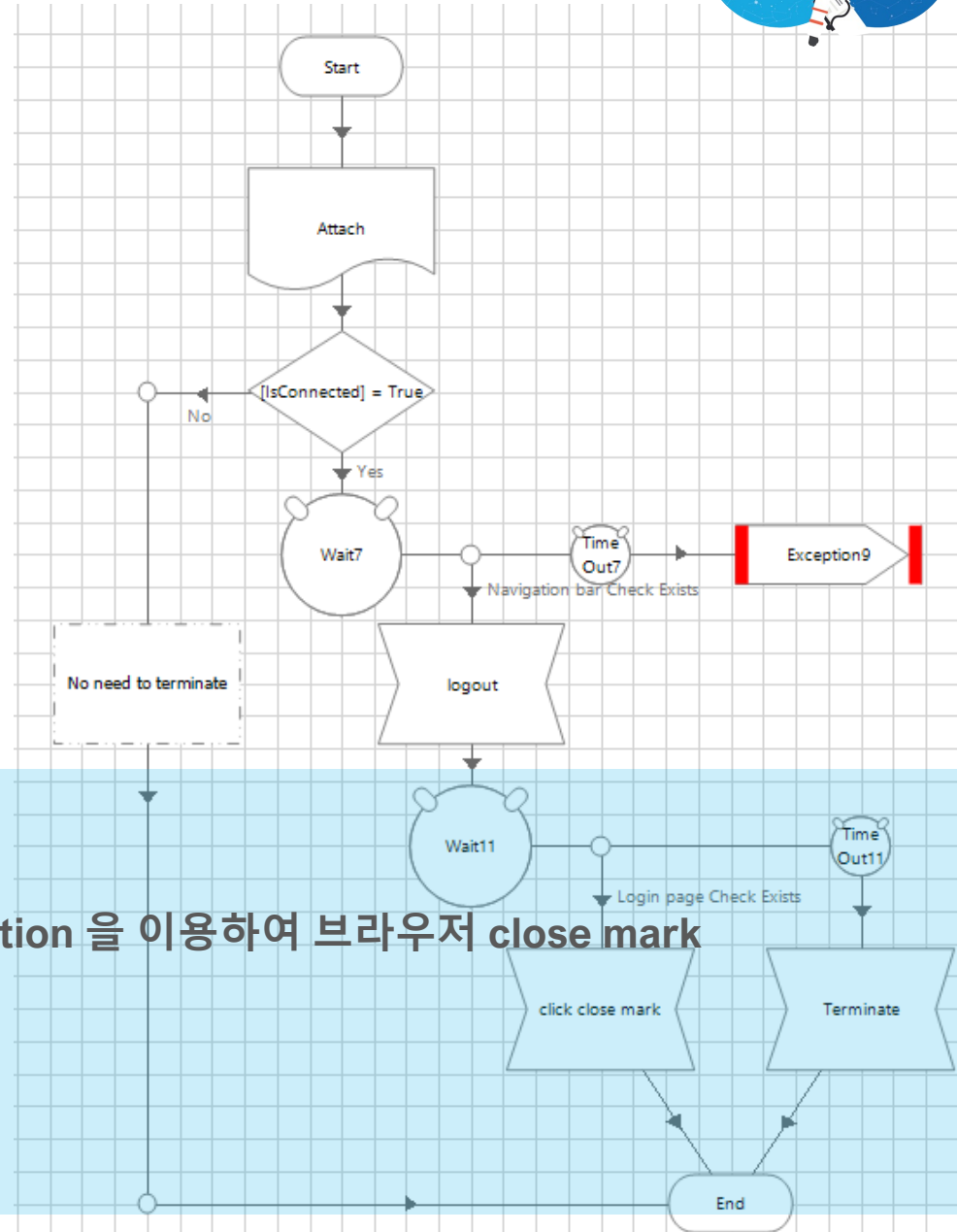
## <Close down>

1. Application Modeling
  - 1) Close mark (UIAutomation)
2. Action stages
  - 1) Navigation – Button click

### Exercise (5 min)

Application Modeler 의 UIAutomation 을 이용하여 브라우저 close mark 모델링

Log-out & close browser 만들기





## 실습 #3

# BP Travel – Process Data 프로세스 제작



# 실습 #3-0

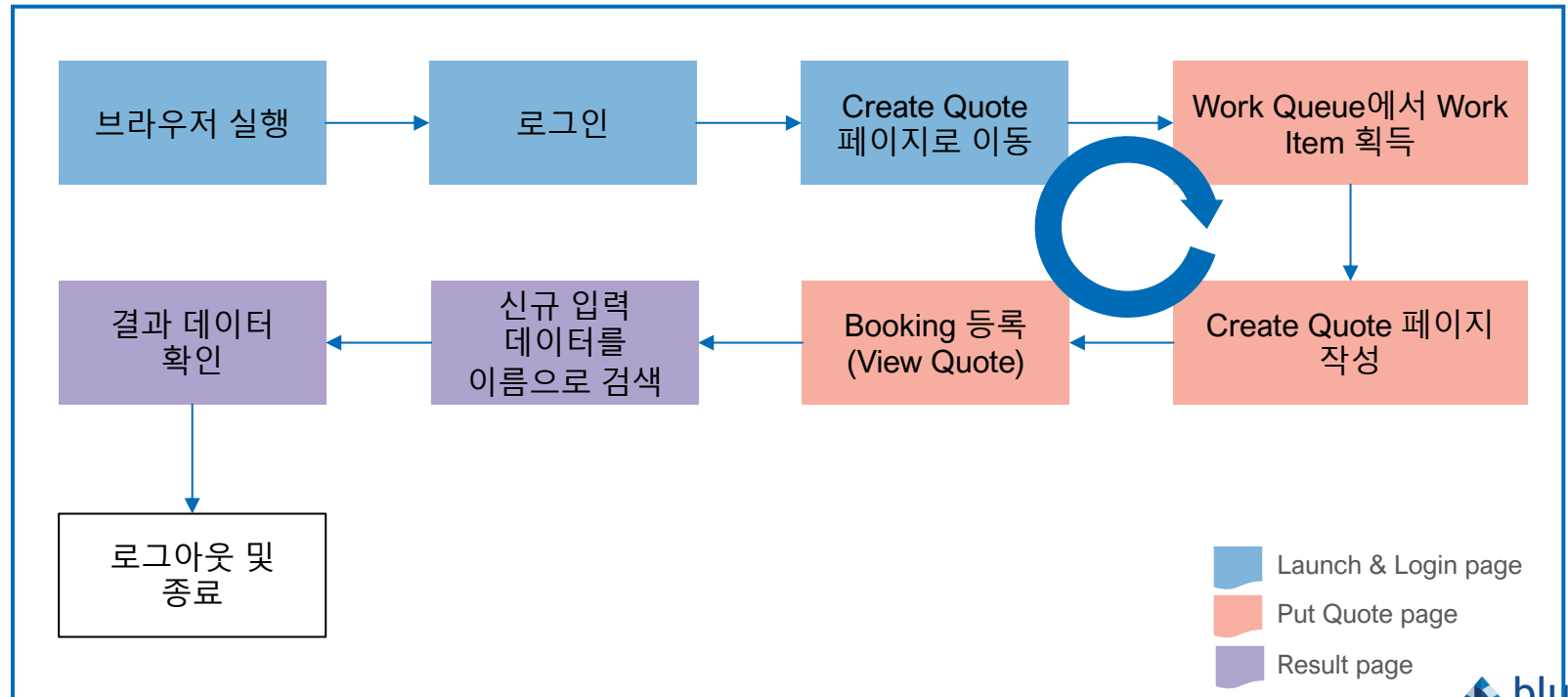
## <Preparation>

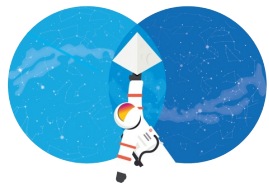
1. Business Object Publication 하기
2. Process 에서 새로 만든 Business Object가 보이는 지 확인

## Process #2 :

## BP Travel – process data

## <Process #2 workflow>





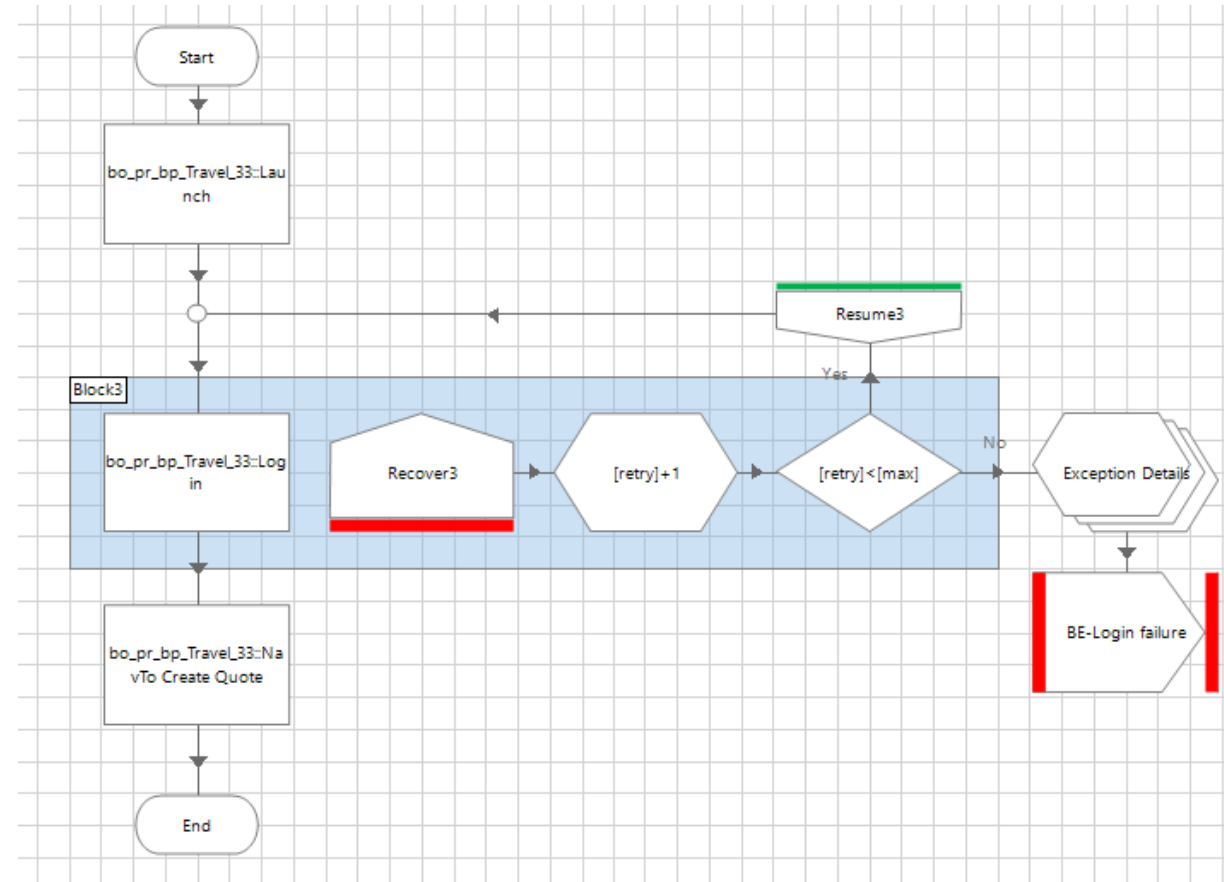
# 실습 #3-1

## Process #2 :

## BP Travel – process data

### <Launch & Login>

1. Launch & Login 페이지 작성
  - Browser Launch -> Login -> Create Quote 페이지로 이동
  - Process <-> Business Object 매개변수 전달



# 실습 #3-2

## Process #2 :

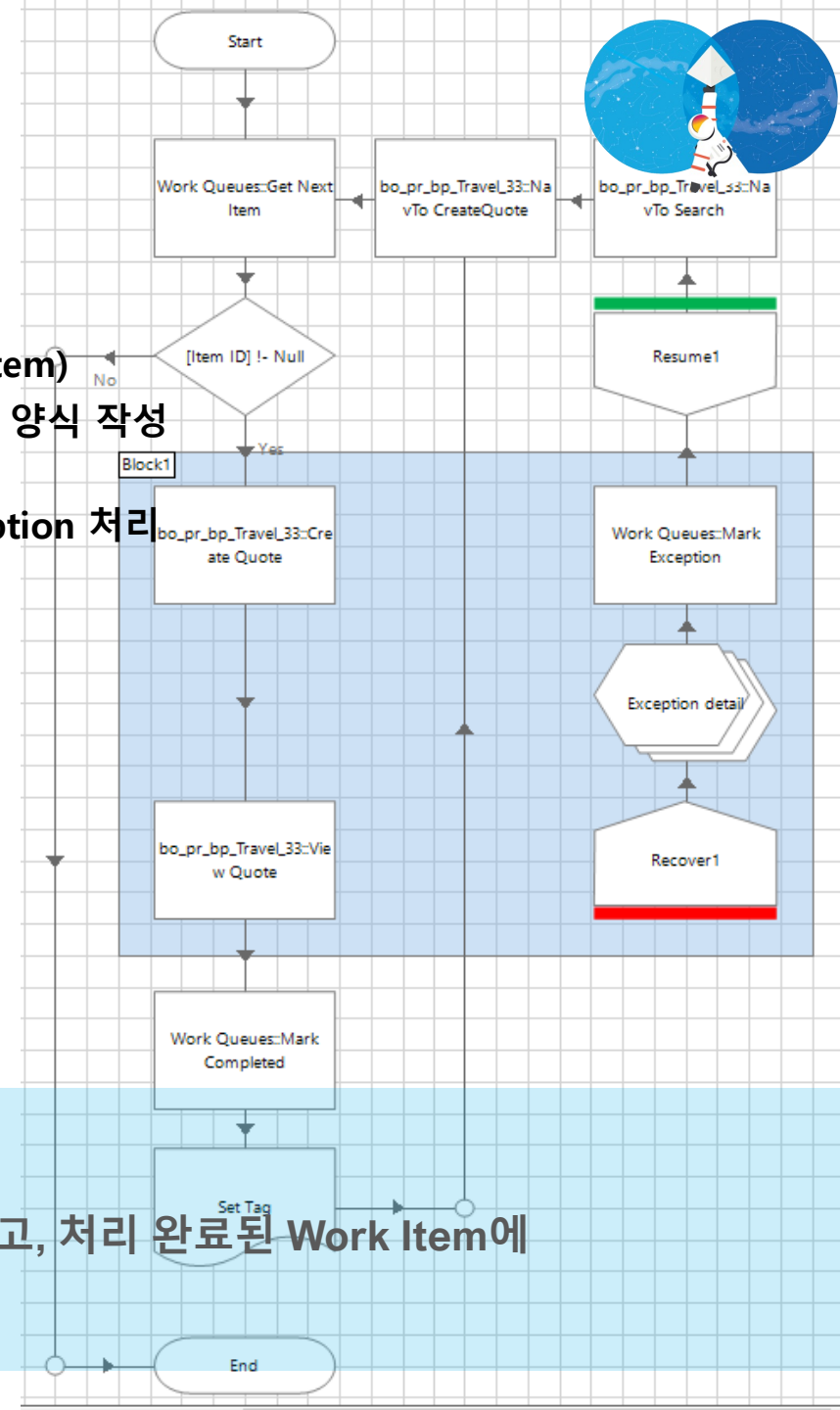
## BP Travel – process data

### <Put Quote>

1. Put Quote 페이지 작성
  - Work Queue 아이템 획득 (Get Next Item)
  - 획득한 아이템을 Business Object의 웹 양식 작성 Action에 매개변수로 전달
  - 완료된 Work Item 에 Complete/Exception 처리
2. 예외 처리
  - Recovery – Resume
  - ExceptionType(), ExceptionDetail()

### Exercise (3 min)

WQ에서 Work Item을 순차적으로 획득하고, 처리 완료된 Work Item에 Marking 하기 (예외처리 포함)



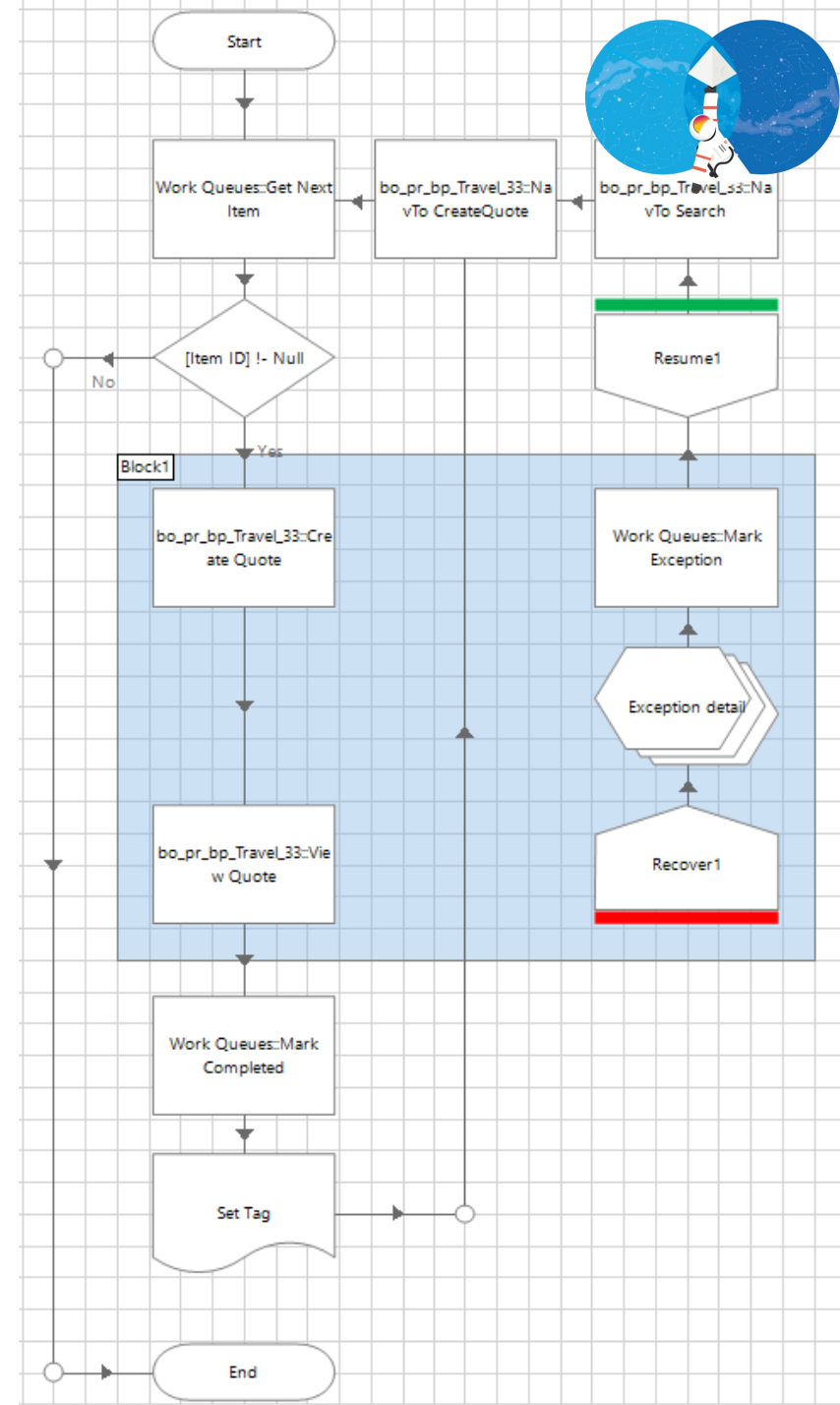
# 실습 #3-3

## Process #2 :

## BP Travel – process data

### <Set Tag>

1. Set Tag 페이지
  - WQ 태깅 방식 이해하기
  - WQ 태깅 활용하기
2. Tag 값 설정 시 주의사항





# 실습 #3-4

## Process #2 :

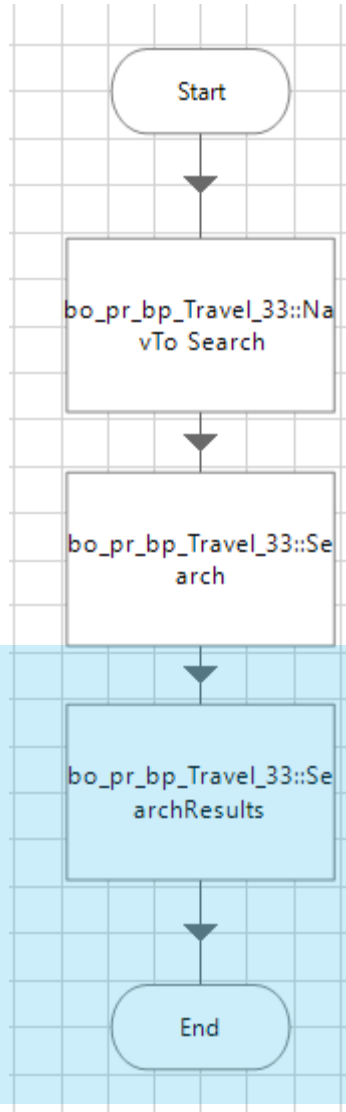
## BP Travel – process data

### <Result>

1. Search page 작성 및 Search 결과 리턴
  - Business Object 연결
  - Process <-> Business Object 매개변수 전달
  - 검색결과 테이블 획득

### Exercise (3 min).

- 1) Search page로 이동
- 2) Search Type 과 Search Text를 입력하여 Search 수행
- 3) 수행 결과를 main page로 리턴





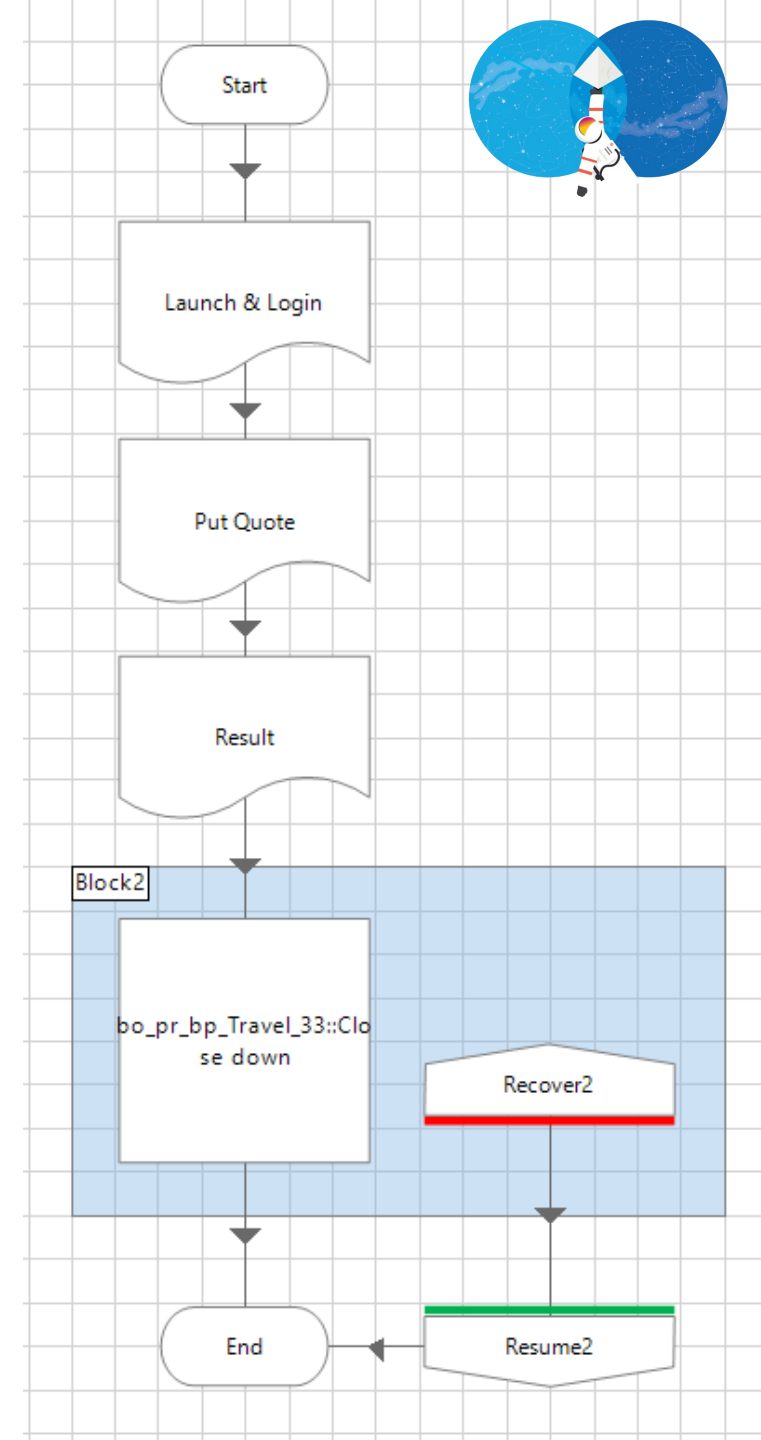
# 실습 #3-5

Process #2 :

BP Travel – process  
data

## <Close down>

1. Log out
2. Browser Close





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