BONITA BPM 7.0
GETTING STARTED TUTORIAL

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Introduction

This tutorial explains how to create an application that includes a process. The application is created using the Bonita BPM Community edition, and uses features that are available in all editions. The example application is a business travel tool, and is similar to the simple travel request process that was used in the getting started tutorial for earlier versions of Bonita BPM:

An employee opens the Travel Tool application to view their pending and approved travel requests. They create a new travel request. Then the request is sent to the employee's manager. The manager reviews the request and approves or refuses it. In a real travel management application, there would be several process steps after approval: estimating costs, possibly getting a second level of approval if the cost passes a certain threshold, submitting an expenses claim after the travel, reviewing the expenses claim, escalating anything out of policy, and authorizing payment. However, for this tutorial you will consider only the first part of the process, where a travel request is submitted and then reviewed.

☆ This tutorial assumes that you are a developer using Bonita BPM for the first time. It gives instructions for using Bonita BPM Studio, the UI designer, and Bonita BPM Portal. It assumes you are familiar with JavaScript, JSON and REST APIs. If you are already a Bonita BPM user, look for the star highlighting new and changed features, including features now in the Community edition that were previously only available in Subscription editions.

Use Bonita BPM Studio to define your process, including using the UI designer to create pages and forms. Then use Bonita BPM Portal to build the application.

This is the recommended sequence for creating an application:

- Design the application pages
- Define the data model
- Create the process definition
  - Create the diagram
  - Define variables
  - Create contracts
  - Define business object initial values
  - Update business object with review data
  - Specify actors
  - Run process with temporary forms
- Define the process forms
- Build the application

Design application pages

☆ The first step in creating an application is to design the application pages in the UI designer using dummy data, creating a prototype application as seen by users. This enables you to review the application with the stakeholders and get validation of the application design before proceeding to more complex tasks.

The Bonita BPM Studio UI designer is an environment for creating application pages and forms. To start the UI designer, click the UI designer icon in the Bonita BPM Studio coolbar (at the top of the screen). The UI designer opens in a browser.

The travel tool has a home page that displays a list of pending and approved travel requests to the current user. It contains a button for starting a new travel request.

There are also some pages that are forms associated with the travel management process:

- Create a travel request
- Review a travel request and approve or refuse it

The easiest way to create these forms is from the process definition, so that is what you will do later in the tutorial.

The following sections explain how to create the application page and then populate it with dummy data. At any stage, you can click ***Preview*** and see a preview the layout the page as it will appear to users. Remember to click ***Save*** to save your work frequently.

Create travel tool home page

☆ In Bonita BPM Studio, start the UI designer by clicking the icon in the coolbar. This opens the UI designer in your browser, at the home page.

In the **New page** field, type the page name, *TravelTool*. The name must not contain spaces or special characters. This name is used in Bonita BPM to identify the page. It is not displayed to the application user. Then click the + icon or press ***Return***. This opens the new page in the Page editor.

Create the page structure by dragging widgets from the palette on the left and dropping them on the whiteboard (the central panel). Specify the characteristics of a widget by selecting it and updating the properties in the panel on the right. Add the following widgets:

- A TEXT widget, with the **Text** property set to *username*.
- A TITLE widget, with the **Text** property set to *Travel tool*.
- A TEXT widget, with text introducing the application: `This page lists your pending and approved travel requests.`
- A CONTAINER for the user pending requests, with the following widgets:
    - A TITLE widget with a lower title level than the page title (for example, "Level 3"), with the text `My pending requests`.
    - A TABLE widget for listing pending travel requests, with the following properties:
        - **Headers** set to `Departure date, Number of nights, Hotel needed, Destination, Reason`
        - **Columns key** set to `departureDate, numberOfNights, hotelNeeded, destination, reason`
    - A LINK widget with text `Create new travel request` and the **Style** property set to primary.
- A CONTAINER for the user approved requests, with the following widgets:
    - A TITLE widget with a lower title level than the page title, with the text `My approved requests`.
    - A TABLE widget for listing approved travel requests, with the following properties:
        - **Headers** set to `Departure date, Number of nights, Hotel needed, Destination, Reason`.
        - **Columns key** set to `departureDate, numberOfNights, hotelNeeded, destination, reason`.

When you have added the widgets, click ***Preview*** to see how the page displays. Change the arrangement of the widgets in the whiteboard using drag and drop and using the **Width** property, until you are happy with the result.

Add dummy data

☆ Now use some dummy data to see how the tables will look when there is data. First create a variable containing the data, and then bind the variable to the widget **Value** property. In the application, the real data will be business data retrieved by a REST API call. The dummy data for the travel requests is in JSON. You need two JSON variables, `myPendingRequests_dummy` and `myApprovedRequests_dummy`. To create **myPendingRequests_dummy**:

1. In the **Variables** panel (at the bottom of the page), click ***Create a new variable***.
2. Enter the variable name, **myPendingRequests_dummy**.
3. Select the JSON type.
4. Enter this value:

```
[{
        "userId": "3",
        "destination":"Grenoble",
        "departureDate": "18/6/2015",
        "numberOfNights":"1",
        "hotelNeeded":"true",
        "reason":"Bonita BPM 7.0 launch",
        "status":"pending",
        "refusalReason":""
},
{
        "userId": "3",
        "departureDate": "10/09/2015",
        "numberOfNights":"3",
        "hotelNeeded":"false",
        "destination":"Paris",
        "reason":"Open source conference",
        "status":"pending",
        "refusalReason":""
},
{
        "userId": "3",
        "departureDate": "07/07/2015",
        "numberOfNights":"4",
        "hotelNeeded":"false",
        "destination":"San Francisco",
        "reason":"BPAD training",
        "status":"pending",
        "refusalReason":""
}]
```

5. Click ***Save***.
6. Select the table widget for the pending requests.
7. In the **Content** property, click the link icon at the right, then click in the box and choose `myPendingRequests_dummy` from the list of variables (start typing the variable name to get auto-completion).
8. Click ***Preview*** to see the page with data for pending requests.

Now follow the same steps to create `myApprovedRequests_dummy` with the following content:

```
[{
        "userId": "3",
        "destination":"Tokyo",
        "departureDate": "10/10/2015",
        "numberOfNights":"5",
        "hotelNeeded":"yes",
        "reason":"BPM for HR conference",
        "status":"approved",
        "refusalReason":""
},
{
        "userId": "3",
        "departureDate": "12/11/2015",
        "numberOfNights":"3",
        "hotelNeeded":"no",
        "destination":"San Franciso",
        "reason":"Meetigns with team",
        "status":"approved",
        "refusalReason":""
}]
```

When you have defined this variable, select the table widget for the approved requests and set the value of the **Content** property to `myApprovedRequests_dummy`.

Review and improve the page

You now have a prototype of the *TravelTool* page with dummy data. View the prototype, and adjust the arrangement of the widgets until you are happy with the appearance of the page. You can drag and drop widgets to reorder them, and you can change properties including **Width** and **Alignment**. For example, to improve this page, you could make the following changes:

- Select the username widget, and change the **Alignment** to `right`.
- Select the "Travel Tool" title and drag it beside the username. The size of the username widget will automatically adjust, so that both widgets are in the same row. Delete the empty row by selecting it and clicking the delete control in the row handle. Empty rows are ignored when the page is displayed, but it is a good idea to delete them to save space in the whiteboard.
- Select the link widget and change the **Alignment** to `center`.

Create the data model

☆ Business data is new for 7.0 in the Community edition.

There are two stages to defining variables: first you define the business data model, and then you specify how the process handles objects of the model. The model is defined as a set of Java objects, and the process uses instances of these objects. If you are not familiar with the terminology, all you need to remember is that the model is the global definition, with a collection of structured variables. For your process, you select the subset that is relevant.

First, we will create the business data model, which will then be available for all processes. We will use a model with one object:

- *TravelRequest* contains the details of the travel that is being requested and its approval status.

To define the business data model:

1. Go to the **Development** menu, choose **Business Data Model**, and then choose **Manage...**. This opens the dialog to manage the business data model.
2. Beside the list of business object types, click ***Add***. A temporary type name, such as *BusinessObject1* is added to the list.
3. Click on the temporary name, and change it to *TravelRequest*.
4. Select the *TravelRequest* business object type, and add its attributes. This table shows the attributes and their types:

Variable	Data type	Mandatory
userId	String	yes
departureDate	Date	yes
numberOfNights	Integer	yes
hotelNeeded	Boolean	no
destination	String	yes
reason	String	yes
status	String	yes
refusalReason	String	no

To add each attribute:

a. In the **Attributes** tab, click ***Add***. A temporary attribute name is added to the Name column.
b. Change the temporary name to the attribute name.
c. Select the type from the drop-down list. To display the list, click at the right end of the **Type** column.
d. There are no **Multiple** attributes in this object, so you can ignore this column.
e. In the **Mandatory** column, check the box for the attributes that are mandatory.

5. Add a custom query that you will use to search for data using both the userId and the status:

a. In the **Queries** tab, select **Custom**.
b. Click ***Add***. A temporary query name is added to the **Name** column.
c. Change the temporary name to `findByUserIdAndStatus`.
d. Click in the query column, and then click the edit icon at the right. This opens a popup with a proposed custom query that uses all the attributes.
e. In the **JPQL Query** field, remove these lines:

```
AND t.departureDate = :departureDate
AND t.numberOfNights = :numberOfNights
AND t.hotelNeeded = :hotelNeeded
AND t.destination = :destination
AND t.reason = :reason
AND t.refusalReason = :refusalReason
```

f. In the Parameters list, delete all the attributes except *userId* and *status*.
g. Click ***OK*** to save the query.

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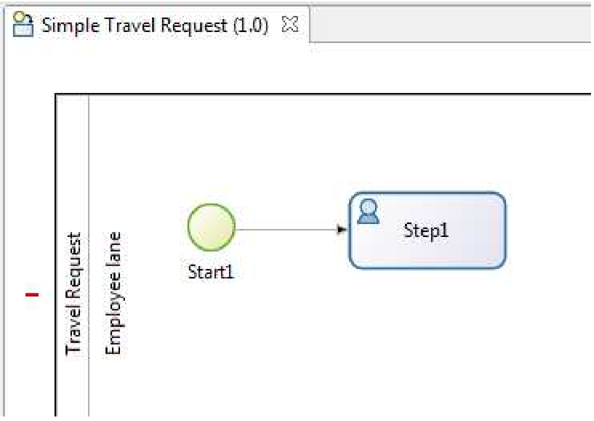
6. Click ***Finish*** to save the business data model.

Create the process definition

Create the diagram

The first stage is to create the new diagram, which you do using Bonita BPM Studio. While you are working on a diagram, save your work from time to time by clicking the ***Save*** icon in the coolbar (at the top of the screen) or by typing `Ctrl-S`. Create the diagram as follows:

1. Click **New diagram** on the Bonita BPM Studio Welcome page. This creates an almost empty diagram for you to start updating:
   - The large rectangle with a name at the left is the **pool**.
   - Inside the pool there is a **lane**, which is also a rectangle. You can see the border of the lane at the left side, beside the pool name. The other borders of the lane coincide with the pool border so are not visible.
   - The circle in the lane is a **start event**.
   - The box in the lane is a **human task**.
2. The first thing to do is to give the diagram a more descriptive name. Click on the diagram outside the pool, then go to the **Details** panel. This is the area on the bottom-right of the screen.
3. In the **General** tab, **Diagram** pane, click ***Edit…*** next to the **Name** field.
4. Enter the new name, *Simple Travel Request*, in the popup and click ***OK***. You can see in the tab at the top of the whiteboard that the diagram name has changed.
5. Now give the Pool a more descriptive name. Select the pool by clicking in the space between the pool border and the lane border at the left side of the diagram. Then go to the **Details** panel, **Pool** tab, and click ***Edit…*** next to the **Name** field. Enter the new name, *Travel Request*, in the popup. When you have renamed the diagram and the pool, the diagram looks like this:



6. Now add the tasks to the diagram. This process starts when an employee fills in a travel request form. You do not need to create a task for this because it is this action that triggers the process to start. This is known as process initiation. A form for process instantiation defined at the pool level.
7. Define what happens after the user submits a request form: the manager reviews the travel request and approves or refuses it. You can use the example task that was added to the diagram automatically. Click on the task name and change it to *Manager review*.

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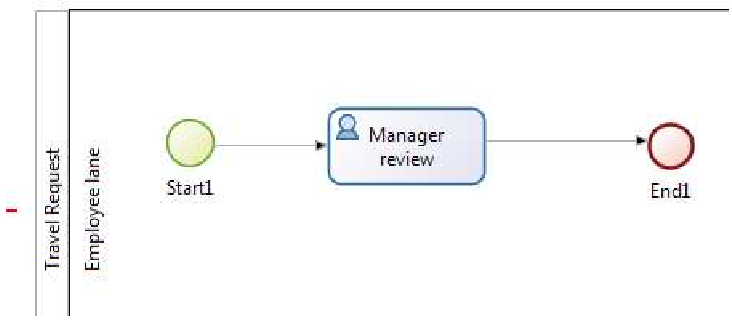
8. In a future evolution of this process, the next task would be to send the travel request details to the admin team so they can handle the booking. For now, though we are just interested in getting the first part of the process working, so add an end after the review task. You can do this by dragging the end icon from the palette to the whiteboard, and then connecting to the *Manager review* task with a flow element.

When you have finished, your diagram should look like this:



Define business variables

You have already defined the data model, but now you need to specify how the model is applied to this process. Define a *travelRequest* business variable, which is an instance of the *TravelRequest* object type. Follow these steps:

1. Select the pool.
2. Go to the **Details** panel, **Data** pane and click ***Add***… beside the Business variables box.
3. In the Name field, type *travelRequest*.
4. Add a description if you want to.
5. From the Business Object list, choose *TravelRequest*.
6. Do not configure the default value. The default value uses information that is in the contract, so you will define it later.
7. Click ***Finish*** to save the definition.

The attributes of *travelRequest* are the information that is used in the process. There are no other variables to define.

Create contracts

☆ A contract is the specification of what a form must return to the process instance. Define a contract for process instantiation, and for each human task.

The contract does not need to include information that is sent from the process instance to the form. This is included in the context, which is the set of information passed to the form. You cannot configure the context.

The information that you specify in the contract is a subset of the information used in the process. To specify the process instantiation contract, select the pool and follow these steps:

1. Go to the **Details** panel, **Execution** tab, **Contract** pane.
2. in the **Inputs** tab, click ***Add from data***…. This opens a popup for creating the contract using the business data variables that are defined for the process.
3. Select *travelRequest* and click ***Next***.

4. Specify the attributes to include. By default, all the attributes are checked, so uncheck those that are not relevant: *userId*, *status* and *refusalReason*.
5. Click ***Finish***.

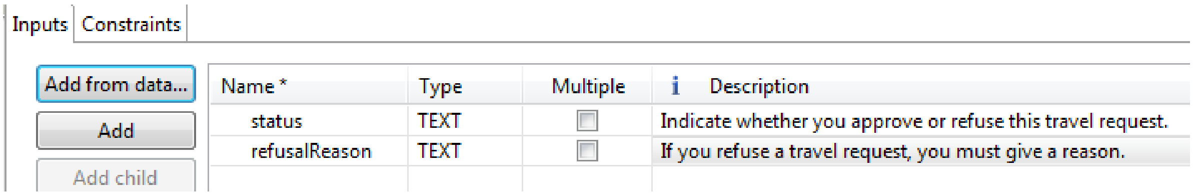
In the **Details** panel, click **travelRequestTravelRequest** to open up the list of attributes. For each attribute, add a **Description**. The description is displayed in the form, so include information that will help the user complete the form correctly, as follows:

Attribute	Description
departureDate	Select the date that the travel starts.
numberOfNights	Enter the number of nights.
hotelNeeded	Check this box if you need a hotel reservation.
destination	Enter the destination city.
reason	Explain the reason for this travel. Give the business justification.

The process instantiation contract is now complete.

The contract for the *Manager review* task only has two inputs, *status* and *refusalReason*, so you can create it directly instead of from data. It also has a constraint: a *refusalReason* must be specified if the manager refuses the request. To define this contract:

1. Select the *Manager review* task.
2. Go to the **Details** panel, **Execution** tab, **Contract** pane.
3. In the **Inputs** tab, for each input, click ***Add*** and specify the name, type, and description, like this:



Name *	Type	Multiple	Description
status	TEXT	□	Indicate whether you approve or refuse this travel request.
refusalReason	TEXT	□	If you refuse a travel request, you must give a reason.

4. Go to the **Constraints** tab and click ***Add***. This adds a placeholder constraint.
5. Click on the placeholder name and change it to *reasonRequired*.
6. Click in the **Expression** field, then click on the icon that appears at the right of the field. This opens a popup where you can enter the constraint expression.
7. Define the constraint on *approval* and *refusalReason* with this script:

```
status=="Approved" || (status=="Refused" && refusalReason != null && !refusalReason.isEmpty())
```

8. In the **Error message** column, add this text: `If you refuse the travel request, you must enter a reason.`

Define business object initial values

☆ Now that the contract is defined, you can configure the initial value of *travelRequest*, as follows:

1. Select the pool and go to the **Details** panel, **Data** tab.
2. Double-click *travelRequest* to edit it.
3. Click the pencil icon beside the **Default value** field. This opens the expression editor.
4. Set the expression type to **Script**, and enter a name for the script, *newRequestInitialValue*.

5. Enter this script:

```
import com.company.model.TravelRequest;

TravelRequest newTravelRequest = new TravelRequest();

newTravelRequest.setUserId(String.valueOf(BonitaUsers.getProcessInstanceInitiator(apiAccessor,
processInstanceId).getId()));
newTravelRequest.setDepartureDate(travelRequestTravelRequest.departureDate);
newTravelRequest.setNumberOfNights(travelRequestTravelRequest.numberOfNights);
newTravelRequest.setHotelNeeded(travelRequestTravelRequest.hotelNeeded);
newTravelRequest.setDestination(travelRequestTravelRequest.destination);
newTravelRequest.setReason(travelRequestTravelRequest.reason);
newTravelRequest.setStatus("pending");

return newTravelRequest;
```

6. Set the **Return type** to `com.company.model.TravelRequest`, by clicking ***Browse*** and choosing *TravelRequest* from the popup.
7. Click ***OK*** to save the expression.
8. Click ***OK*** again to save the updated object definition.

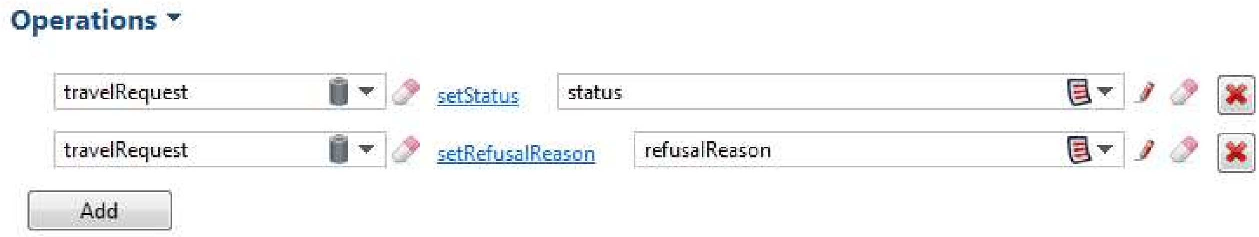
Update business object with review data

☆You need to define operations to update the business object with the values entered for *status* and *refusalReason* in the *Manager review* form. Select the *Manager review* task, and go to the **Details** panel, **Execution** tab, **Operations** pane. First define the operation for *status*, as follows:

1. Create a new operation by clicking ***Add***.
2. In the first field, click the down-arrow to display a list of variables on which an operation can be performed, and double-click *travelRequest*.
3. Click ***Takes value of***. This opens a popup listing the available operations. Choose ***Use a Java method***. The popup displays a list of available methods. Click ***setStatus(String)***, and then click ***OK***.
4. In the last field, click the down-arrow to display a list of variables, and double-click *status*.

Repeat these steps for to define the operation for *refusalReason*.

When both of the operations are defined, the **Details** panel should look like this:



travelRequest setStatus status

travelRequest setRefusalReason refusalReason

Specify actors

The next stage is to define who carries out the steps in the process. This is done by assigning actors. An actor is a placeholder for the person who will do a task. When you configure a process, you make the connection between the actors defined in the process definition and the real-world people who will do process steps.

Bonita BPM Studio comes with a test organization, called ACME, which you can use for testing. In this example, we have two people, the employee who initiates the process, and the employee's manager. The managers are also employees, so you can use the same actor for process instantiation and for the review task, but use a filter to specify who does the approval step. This is how it works:

1. In the diagram, select the pool. This is where you define all the actors for the process. By default, there is already an Employee actor, which is defined for testing. You can change the organization and the actors later, but for initial testing, this will work fine. The default settings mean that any employee in the organization can start a case of the travel request process. You do not need to change anything.
2. Next, select the review step and define who can do this. This step will be done by the manager of the person who initiated the request. All the managers are also employees, and the employee actor is defined for the lane, so check the button for **Use the actor defined in the lane**.
3. To make sure that the review task is sent to the right manager, use an actor filter:
    a. Click the actor filter ***Set…*** button.
    b. Open up the list of process actor filters.
    c. Select **Initiator manager**. This means that the review task is to be done by the manager of the person who submitted the request that initiated the process. Click ***Next***
    d. Specify a name for the actor filter definition, *requestersManager*, and click ***Finish***.

The process is now defined. The next section shows you how to configure and run it to verify that the process definition is correct before you define forms and create the application.

Run process with temporary forms

☆You can run a process that is in development before you create forms, by using temporary forms that are created automatically. This section explains how to configure the process and run it from Bonita BPM Studio.

Before you can run the process, you need to configure it. Use the default setting for almost everything for the first tests. There are just two things to configure for this example process, the actor mapping and the name of the test user.

1. Open the Configuration dialog, by clicking ***Configure*** in the coolbar.
2. Click **Actor mapping** in the menu on the left of the popup. The actor mapping box lists the actors and shows the default mapping: The Employee actor is mapped to a group called acme, which contains all the employees of the example organization called ACME. You do not need to change this.
3. Now specify the name of the test user. For this example, we can specify the user Helen Kelly, in the ACME test organization. Her manager is William Jobs. Click **Authentication** in the left menu, and specify Helen's username, `helen.kelly`, and password, `bpm`.
4. The configuration is now complete, so click ***Finish***.

Now you can run the process and see the temporary forms, to check that the process definition is correct.

1. Click ***Run*** in the coolbar. This opens a browser window, logs you in to Bonita BPM Portal as Helen, and displays the travel request form.
2. Fill out the form. Make sure that you use the right format for each field in the temporary forms. The date must be specified in the form yyyy-mm-dd. When you have filled out the form, click ***Start***. This submits the form and starts the process instance.

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3. At the top-right of the Portal window, click the arrow beside Helen's name and choose ***Logout***.
4. Log in as Helen's manager, William Jobs, with username `william.jobs` and password `bpm`. The **Tasks** view is displayed, where there is a task called *Manager review*.
5. Select the *Manager review* task and click ***Do it***. The temporary form for the manager review is displayed. It contains fields for the items defined in the contract for this step, but not the information that Helen entered in the request. When you create your own forms, you will add this information, so that the manger can see the details of the request before approving or refusing it. For now, you can see the form, so you have verified that the process definition is correct.

Create forms

☆ The easiest way to create a process form is to generate it automatically from the contract. This automatically creates a mapping between the process and the form and defines form data. You can then update the form manually to add or remove field, and to change the layout.

While using the UI designer, click ***Save*** frequently to save your work.

To create the process instantiation form:

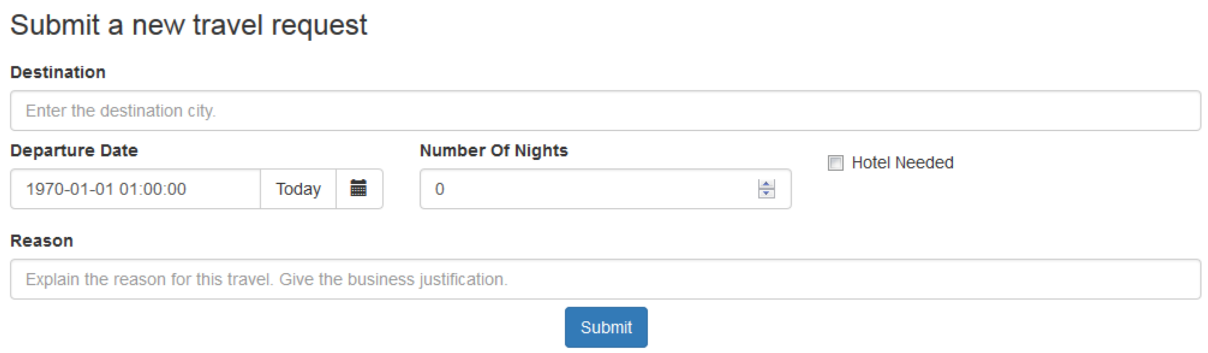
1. In Bonita BPM Studio, select the pool and go to the **Details** panel, **Execution** tab, **Contract** pane.
2. At the top-right of the **Details** panel, click the UI designer icon. This opens the UI designer in a browser window, with the automatically generated form.
3. Change the form name. All forms that are generated automatically are called *newForm*, so you must rename them to avoid confusion. To do this, double-click on the name in the top bar, and then specify a new form name, *submitTravelRequest*.

The form is now created. A form is a UI designer page that is mapped to a process. A page is a collection of widgets, and each field is defined by a widget. Widgets are arranged in rows. Each widget has a set of properties, on the right side of the window. To change the appearance and behavior of a page, you update the widgets. At any time, you can click ***Preview*** to see how the page will look to a user. To have more space to update the page, you can hide the **Data** and **Assets** tabs, by clicking on the down-arrow.

Here are some suggestions for how to improve the instantiation form layout:

1. Select the title, which is the top widget, and change the **Text** property to `Submit a new travel request`.
2. Make the Departure date widget narrower. To do this, select it and change the value of the **Width** property to 4 columns.
3. Move the Destination widget up to the top of the form. To do this, position your mouse over the bar at the left side of the widget. A row control is displayed. Click the up arrow to move the row up. For each click, the row move up one space, so you need to click several times to move it to the top (below the title).
4. Move the Number of nights and Hotel needed widgets to the same row as the Departure date, and reduce the widths. (Note: when you add a widget to a row, it automatically takes all the remaining columns, so set the width after you move the widgets.)
5. Remove the empty rows left when you moved the widgets, using the row control.

When you have finished, the preview of the form looks like this:



Submit a new travel request

Destination

Enter the destination city.

Departure Date

1970-01-01 01:00:00 Today

Number Of Nights

0

□ Hotel Needed

Reason

Explain the reason for this travel. Give the business justification.

Submit

Now define the form for the *Manager review* task. Start by automatically generating the form from the context, then add widgets to display the request details for the manager to review. Follow these steps:

1. In Bonita BPM Studio, select the *Manager review* task and go to the **Details** panel, **Execution** tab, **Contract** pane.
2. At the top-right of the **Details** panel, click the UI designer icon. This generates a form and opens it in the UI designer.
3. Change the form name to *reviewTravelRequest*.
4. Add a title widget. To do this, drag the TITLE widget from the palette (on the left) and drop it at the top of the form. Change the text property to the form title, `Review travel request`. Set the **Level** property to Level 4, so it is the same size as the title of the form for creating a request.
5. Add a variable to get the information that the user entered in the request form. To do this:
   a. In the **Variables** tab, click ***Create a new variable***.
   b. Specify the name, *travelRequest*.
   c. Set the **Type** to **External API**.
   d. Set the value to `/bonita/{{context.travelRequest_ref.link}}`.
   e. Click ***Save***.
6. Add widgets to display the details of the travel request, using the following information:

	Widget type	**Value binding**
Destination	Input	travelRequest.destination
Departure date	Input	travelRequest.departureDate | date
Number of nights	Input	travelRequest.numberOfNights
Hotel needed	Checkbox	travelRequest.hotelNeeded
Reason for travel	Text area	travelRequest.reason

7. Specify that these widgets are read-only by setting the property.
8. Add a Radio buttons widget labeled `Status` with **Available values** set to `Approved,Refused` and **Selected value** bound to `formInput.status`.
9. Add a Text widget beside the radio buttons, with the text `Check a button to give your decision about this travel request:`.
10. Remove the Status widget that was added automatically.
11. Preview the form and rearrange the widgets until you are happy with the form.

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Run process

You can now run the process using the forms that you created. Make sure that you have saved everything in the UI designer. Then click ***Run*** in the Studio coolbar.

Now when you see the request form there is a date picker to specify the date. Fill out the request form as Helen, then log in as William and do the review task. Now when the review form is displayed, it contains the information that Helen entered in the request form. You can approve or refuse the request.

You process is now complete, so you can include it in an application.

Build the application

This section explains how to build the application from the pages and process that you have already created. There are the following steps:

1. In the UI designer, update the application page to use business data instead of the dummy JSON data and to specify the connection between the page and the process.
2. In Bonita BPM Portal, create the application.

Update the application page

☆ There are two stages to updating the page: first create some variables, and then change the widget data mappings.

Create the following variables:

- An External API variable called `session` with the value `../API/system/session/unusedid`.
- An External API variable called `processDef` with the value `../API/bpm/process?p=0&c=1&f=name=Travel Request`.
- A JavaScript expression variable called `myUserId` with the value `return $data.session.user_id;`.
- An External API variable called `myPendingRequests` with the value `../API/bdm/businessData/com.company.model.TravelRequest?q=findByUserIdAndStatus&p=0&c=10&f=userId={{myUserId}}&f=status=pending`.
- An External API variable valled `myApprovedRequests` with the value `../API/bdm/businessData/com.company.model.TravelRequest?q=findByUserIdAndStatus&p=0&c=10&f=userId={{myUserId}}&f=status=Approved`.

Now update the widgets to use the new variables:

1. Select the username widget at the top of the page, and update the **Text** property to bind it to `session.user_name` (click on the "link" icon).
2. Update the pending requests table widget to change the **Content** binding to `myPendingRequests`.
3. Update the approved requests table widget to change the **Content** binding to `myApprovedRequests`.
4. For both pending and approved requests, set the **Column keys** to `departureDate | date, numberOfNights, hotelNeeded, destination, reason`, to set the date format.

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Link button to process

☆ When the user clicks the button on the Travel Tool page for creating a travel request, the application displays the form for creating a request. This is the instantiation form for the Travel Request process. To configure this, select the button and set the target URL property to `http://localhost:8080/bonita/portal/resource/process/Travel%20Request/1.0/content/?id={{processDef[0].id}}`.

After the user submits the form, the Tasks view of Bonita BPM Portal is displayed.

Build application

☆ Warning: If you are using a Portal that was started from Bonita BPM Studio, by default when you close the Studio your processes, pages and applications in the Portal are not saved. If you want to save your application definition, edit the Studio **Database Preferences** and uncheck all the options.

To build the Travel Tool application, you need to export the page from the UI designer, deploy the process, and then create the application in Bonita BPM Portal.

To export the page, click the ***Export*** icon in the Page editor or on the home page. The page is exported as a zip file in your default browser download location.

To deploy the process, you can simply run it from Studio. If you have no changed the process since you last ran it, it is already deployed.

To create your application in Bonita BPM Portal:

1. Log in to Bonita BPM Portal with the Administrator profile.
2. From the menu bar, choose **Resources**, and then click *Add* and import the TravelTool page that you exported from the UI designer.
3. Go to **Applications** and click *New*.
4. Enter a display name and URL for the application, and click ***Create***. The application is created.
5. In the list of applications, click the edit icon to configure your new application.
6. In the **Pages** section, click *Add* and add the page you imported. Make this page the application home page, and delete the default home page.
7. Check that the application is correctly defined, by clicking the URL. The travel requests summary page is displayed, with a link to the form to create a new request. When you click the link, the form for submitting a new travel requests is displayed.

You can now share the application URL with Bonita BPM users to give them access to the application.

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