BUILDING APPLICATIONS WITH FORCE.COM – PART 2 (AUTOMATING BUSINESS PROCESSES WITH APPROVAL PROCESSES)

Exercise Guide

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13-1: Create Multi-Step Approval Processes

Scenario:

Universal Containers needs to make sure that all new positions receive the proper approval before they are posted.

- Step 1: New positions should go to the manager of the record owner.
- Step 2: All positions approved by the record owner's manager should go to the recruiter (Mario Ruiz).
- Step 3: Senior level positions should also be approved by the department VP.

Goal:

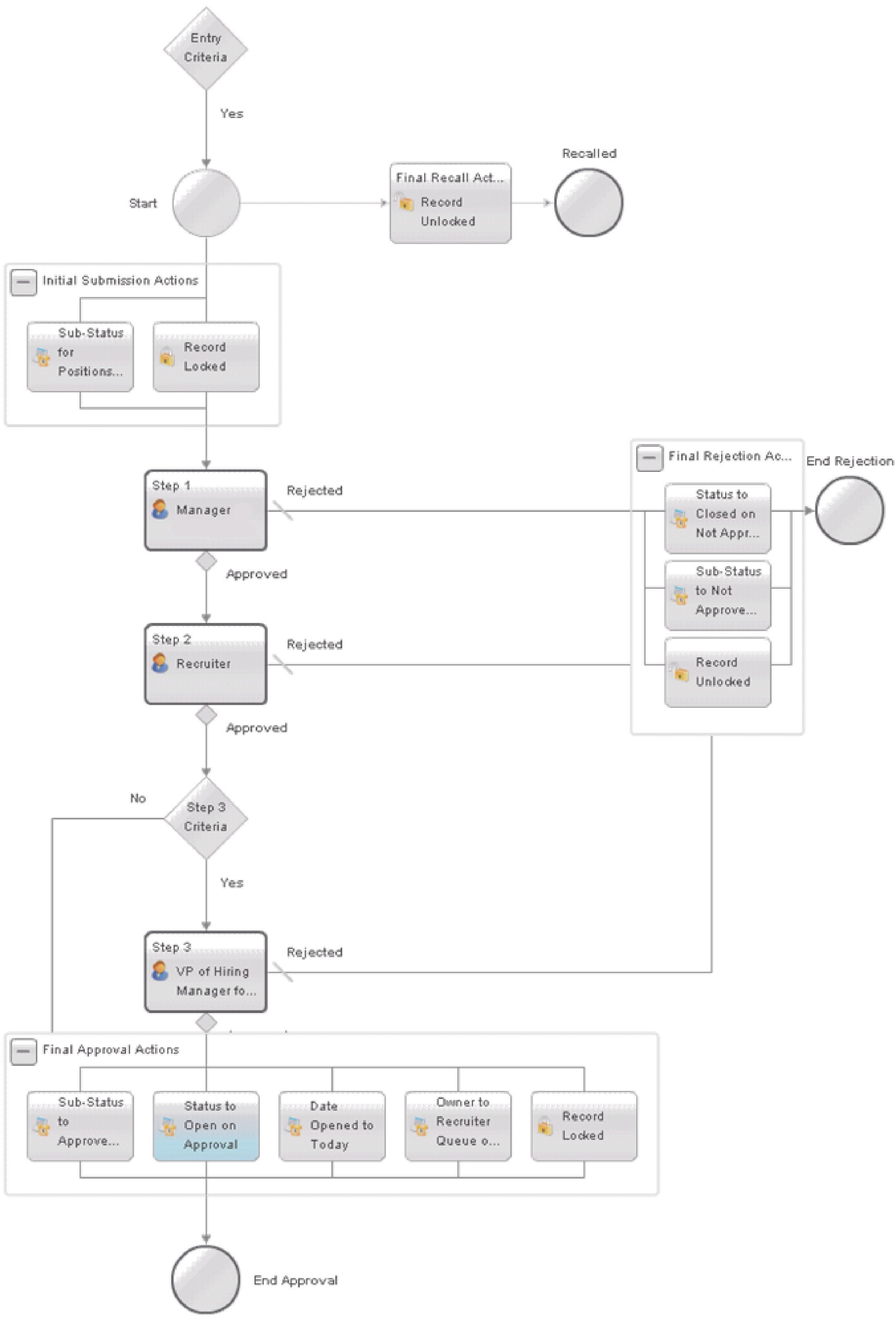
Create an approval process for approving new positions.

Tasks:

1. Create a multi-step approval process.
2. Create initial submission actions.
3. Create approval steps.
4. Create final approval actions.
5. Create final rejection actions.
6. Activate the process.
7. Create a new position to test the approval process.

Time:

30 minutes


Entry Criteria
Yes
Start
Final Recall Act...
Record Unlocked
Recalled
Initial Submission Actions
Sub-Status for Positions...
Record Locked
Step 1
Manager
Rejected
Approved
Final Rejection Ac...
End Rejection
Status to Closed on Not Appr...
Sub-Status to Not Approve...
Record Unlocked
Step 2
Recruiter
Rejected
Approved
No
Step 3 Criteria
Yes
Step 3
VP of Hiring Manager fo...
Rejected
Final Approval Actions
Sub-Status to Approve...
Status to Open on Approval
Date Opened to Today
Owner to Recruiter Queue o...
Record Locked
End Approval

Instructions:

1. Create a multi-step approval process.
   A. Click **Setup | Create | Workflow & Approvals | Approval Processes**.
   B. Select `Position` from the **Manage Approval Processes For:** picklist.
   C. Click **Create New Approval Process | Use Standard Setup Wizard**.
      i. **Process Name**: `3-Step Position Approval #1`
      ii. **Unique Name**: `X3_Step_Position_Approval_1` (This field auto-populates.)
      iii. **Description**:

```
ALL New Positions:
- Step 1: approval by Mgr of Record Owner
- Step 2: approval by Recruiter (Mario)
- Step 3: senior-level ONLY approved by VP of Hiring Mgr
(manually selected)
```

   D. Click **Next**.
   E. Specify the entry criteria as **Use this approval process if the following**: `criteria are met: Position: Status | equals | New`, and click **Next**.
      i. **Next Automated Approver Determined By**: `Manager`
      ii. **Use Approver Field of Position Owner**: (selected)
      iii. **Record Editability Properties**: `Administrators ONLY can edit records during the approval process.`
   F. Click **Next**.
   G. Leave the **Approval Assignment Email Template** field blank, and click **Next**.
      i. **Selected Fields**: `Title, Owner, Department, Hiring Manager, Job Description, Pay Grade, Priority, Type` (Hold **CTRL** to select multiple fields.)
      ii. **Display approval history information in addition to the fields selected above**: (selected)
      iii. **Allow approvers to access the approval page only from within the salesforce.com application. (Recommended)**: (selected)
   H. Click **Next**.
      i. **Allowed Submitters**: `Position Owner`
      ii. **Allow submitters to recall approval requests**: (cleared)
   I. Click **Save**.
   J. Select `No, I'll do this later, take me to the approval process detail page to review what I've just created.`
   K. Click **Go!**
2. Create initial submission actions.

A. Under the Initial Submission Actions related list, click **Add New | Field Update**.
B. Enter the field update details.

   i. **Name**: `Sub-Status for Positions in Progress`
   ii. **Unique Name**: `Sub_Status_for_Positions_in_Progress` (This field auto-populates.)
   iii. **Field to Update**: `Sub-Status`
   iv. **Picklist Options**: `A specific value: Pending`

C. Click **Save**.

3. Create approval steps.

   A. Under the Approval Steps related list, click **New Approval Step.**

      i. **Name**: `Manager of Record Owner`
      ii. **Unique Name**: `Manager_of_Record_Owner` (This field auto-populates.)
      iii. **Step Number**: `1`

   B. Click **Next**.
   C. Select `All records should enter this step.`, and click **Next**.

      i. **Automatically assign using the user field selected earlier. (Manager)**: (selected)
      ii. **The approver's delegate may also approve this request**: (cleared)

   D. Click **Save**.
   E. Select `No, I'll do this later. Take me to the approval process detail page to review what I've just created`, and click **Go!**
   F. Under the Approval Steps related list, click New Approval Step.

      i. **Name**: `Recruiter`
      ii. **Unique Name**: `Recruiter` (This field auto-populates.)
      iii. **Step Number**: `2`

   G. Click **Next**.
   H. Select `All records should enter this step.`, and click **Next**.
   I. Select `Automatically assign to approver(s).`, then select `User` from the picklist that appears, and use the lookup icon to select `Mario Ruiz.`

      i. **When multiple approvers are selected**: `Approve or reject based on the FIRST response.`
      ii. **The approver's delegate may also approve this request.**: (cleared)
      iii. **What should happen if the approver rejects this request?**: `Perform all rejection actions for this step AND all final rejection actions. (Final Rejection)`

   J. Click **Save**.
   K. Select `No, I'll do this later. Take me to the approval process`

`detail page to review what I've just created.`, and click **Go!**

L. Under the Approval Steps related list, click **New Approval Step**.
   i. **Name:** `VP of Hiring Manager for Sr-Level Positions`
   ii. **Unique Name**: `VP_of_Hiring_Manager_for_Sr_Level_Positions` (This field auto-populates.)
   iii. **Step Number**: `3`
M. Click **Next**.
N. Select `Enter this step if the following: criteria are met: Pay Grade | contains | 300, 400`
O. Click **Next**.
   i. **Let the submitter choose the approver manually.**: (selected)
   ii. **The approver's delegate may also approve this request.**: (cleared)
   iii. **Perform all rejection actions for this step AND all final rejection actions. (Final Rejection)**: (selected)
P. Click **Save**.
Q. Select `No, I'll do this later. Take me to the approval process detail page to review what I've just created.`, and click **Go!**

4. Create final approval actions.
   A. Under the Final Approval Actions related list, click **Add New | Field Update**.
      i. **Name:** `Status to Open on Approval`
      ii. **Unique Name**: `Status_to_Open_on_Approval` (This field auto-populates.)
      iii. **Field to Update**: `Status`
      iv. **Picklist Options**: `A specific value: Open`
   B. Click **Save & New**.
      i. **Name**: `Sub-Status to Approved on Approval`
      ii. **Unique Name**: `Sub_Status_to_Approved_on_Approval`
      iii. **Field to Update**: `Sub-Status`
      iv. **Picklist Options**: `A specific value: Approved`
   C. Click **Save & New**.
      i. **Name**: `Owner to Recruiter Queue on Approval`
      ii. **Unique Name**: `Owner_to_Recruiter_Queue_on_Approval`
      iii. **Field to Update**: `Owner`
      iv. **Owner**: `Queue: Recruiter Queue`
      v. **Notify Assignee**: (cleared)
   D. Click **Save & New**.
      i. **Name**: `Date Opened to Today`

ii. **Unique Name**: `Date_Opened_to_Today`
iii. **Field to Update**: `Date Opened`
iv. **Date Options**: `Use a formula to set the new value`
v. **Formula**: `NOW()`

E. Click **Save**.

5. Create final rejection actions.

A. Under the Final Rejection Actions related list, click **Add New | Field Update**.

i. **Name**: `Status to Closed on Not Approved`
ii. **Unique Name**: `Status_to_Closed_on_Not_Approved`
iii. **Field to Update**: `Status`
iv. **Picklist Options**: `A specific value: Closed`

B. Click **Save & New**.

i. **Name**: `Sub-Status to Not Approved on Reject`
ii. **Unique Name**: `Sub_Status_to_Not_Approved_on_Reject`
iii. **Field to Update**: `Sub-Status`
iv. **Picklist Options**: `A specific value: Not Approved`

C. Click **Save**.

6. Activate the process.

A. Click **Activate**.
B. When you receive the popup that says, “After activating this approval process, you cannot add or remove approval steps. Also, some approval step attributes may not be editable. Continue?” click **OK**.

7. Create a new position to test the approval process.

A. Click the Positions tab, then click **New**.
B. Select `Non-Technical Position` from the **Record Type of new record** picklist, and click **Continue**.
C. Edit the new position.

i. **Title**: `Associate Support Representative`
ii. **Type**: `Full Time`
iii. **Department**: `Support`
iv. **Location**: `San Francisco`
v. **Pay Grade**: `S-100`
vi. **Hiring Manager**: `Ben Stuart`
vii. **Priority**: `Medium`
viii. **Status**: `New`
ix. **Job Description**: `Associate Support Representatives are the front lines of customer support. They provide courteous and`

`professional support to all kinds of issues that our customers present.`

D. Click **Save**.
E. Change the owner by clicking **[Change]** next to the **Owner** field, keeping the **Owner** as `User`, and using the lookup icon to select `Ben Stuart`.
F. Click **Save**.
G. On the Approval History related list, click **Submit for Approval**.
   i. When you receive the popup that says, “Once you submit this record for approval, you might not be able to edit it or recall it from the approval process depending on your settings. Continue?” click **OK**.
   ii. Note that the record is routed to Andrew Goldberg.
   iii. Log in as Andrew Goldberg to approve the position.
   iv. Log out as Andrew Goldberg.
   v. Note that the record is then routed to Mario Ruiz.

13-2: Create Dynamic Approval Processes

Scenario:

At Universal Containers, not all approval processes route records to a particular user or manager. Universal Containers would like to have more flexibility with its approval processes (to refer to an approval matrix and route approvals based on users specified on the matrix).

Goal:

Create a dynamic approval process.

Tasks:

1. Download the needed apex class and trigger.
2. Add new approver fields on the Position object.
3. Modify the Position Layout and Technical Position Layout to include a section for approver information.
4. Create an approval matrix in Salesforce.
5. Add fields to the Position Approval Matrix object.
6. Create a new position approval matrix.
7. Create an Apex trigger to automatically populate the Approver fields on new positions.
8. Populate approvers on a Position.
9. Modify the existing approval process to use this dynamic routing.
10. Test the new approval process.

Time:

30 minutes

Instructions:

1. Download the needed apex class and trigger.

    A. Click the Documents tab.
    B. Select `Shared Documents` from the **Folder** picklist.
    C. Click the **DEV401.zip** file.
    D. Click **View File**.
    E. In the File Download dialog box, click **Save**.
    F. In the Save As dialog box, select to save the file to the desktop, and click **Save**.
    G. Right-click the downloaded .zip file and select **Extract All**.

2. Add new approver fields on the Position object.

    A. Click **Setup | Create | Objects | Position**.
    B. Under the Custom Fields & Relationships section, click **New**.
    C. Select the `Lookup Relationship` radio button under **Data Type**, and click **Next**.

D. Select `User` from the **Related To** picklist, and click **Next**.
   i. **Field Label**: `Approver #1`
   ii. **Field Name**: `Approver_1`
E. Click **Next**.
F. Click **Next** to make the field visible to Custom – Executive, Custom – HR, Custom – Recruiter, and System Administrator profiles.
G. Select only the Position and Technical Position layouts and click **Save & New**.
H. Select the `Lookup Relationship` radio button under **Data Type**, and click **Next**.
I. Select `User` from the **Related To** picklist, and click **Next**.
   i. **Field Label**: `Approver #2`
   ii. **Field Name**: `Approver_2`
J. Click **Next**.
K. Click **Next** to make the field visible to Custom – Executive, Custom – HR, Custom – Recruiter, and System Administrator profiles.
L. Select only the Position and Technical Position layouts and click **Save & New**.
M. Select the `Lookup Relationship` radio button under **Data Type**, and click **Next**.
N. Select `User` from the **Related To** picklist, and click **Next**.
   i. **Field Label**: `Approver #3`
   ii. **Field Name**: `Approver_3`
O. Click **Next**.
P. Click **Next** to make the field visible to Custom – Executive, Custom – HR, Custom – Recruiter, and System Administrator profiles.
Q. Select only the Position and Technical Position layouts and click **Save**.

3. Modify the Position Layout and Technical Position Layout to include a section for approver information.
   A. Click **Setup | Create | Objects | Position**.
   B. Under the Page Layouts related list, click the **Edit** link next to Position Layout.
   C. Drag a new section from the palette at the top onto the page layout, placing it above the System Information section. Make the following changes to the **Section Properties**:
      i. **Section Name**: `Position Approvers`
      ii. **Display Section Header On**: `Detail Page` and `Edit Page` (both selected)
      iii. **Layout**: `2-Column`
      iv. **Tab-key Order**: `Left-Right`
      v. Click OK.
      vi. Drag the **Approver #1**, **Approver #2**, and **Approver #3** fields from the Information section into the new Position Approvers section.

D. Click **Save**.
E. Under the Page Layouts related list, click the **Edit** link next to Technical Position Layout.
F. Drag a new section from the palette at the top onto the page layout, placing it above the System Information section. Make the following changes to the **Section Properties**:
   i. **Section Name**: `Position Approvers`
   ii. **Display Section Header On**: `Detail Page` and `Edit Page` (both selected)
   iii. **Layout**: `2-Column`
   iv. **Tab-key Order**: `Left-Right`
   v. Click **OK**.
   vi. Drag the **Approver #1**, **Approver #2**, and **Approver #3** fields from the Information section into the new Position Approvers section.
G. Click **Save**.

4. Create an approval matrix in Salesforce.
   A. Click **Setup | Create | Objects**.
   B. Click **New Custom Object.**
      i. **Label**: `Position Approval Matrix`
      ii. **Plural Label**: `Position Approval Matrices`
      iii. **Object Name**: `Position_Approval_Matrix` (This field auto-populates.)
      iv. **Context-Sensitive Help Setting**: `Open the standard Salesforce.com Help & Training window` (selected)
      v. **Record Name**: `Routing ID`
      vi. **Data Type**: `Auto Number`
      vii. **Display Format**: `RoutingID - {0000}`
      viii. **Starting Number**: `1`
      ix. **Allow Reports**: (selected)
      x. **Allow Activities**: (selected)
      xi. **Track Field History**: (selected)
      xii. **Allow Search**: (selected)
      xiii. **Deployed**: (selected)
      xiv. **Add Notes and Attachments related list to default page layout**: (cleared)
      xv. **Launch New Custom Tab Wizard after saving this custom object**: (selected)
   C. Click **Save**.
   D. Use the lookup icon to select any tab style.
   E. Click **Next**.
   F. Select the `Apply one tab visibility to all profiles: Default Off` radio button.
   G. Select the `Apply a different tab visibility for each` profile radio

button.

H. Select `Default On` for the Custom-Executive, Custom-HR, Custom – Recruiter, and System Admin profiles.
I. Click **Next**.
J. Add the tab only to the Recruiting app.
K. Click **Save**.

5. Add fields to the Position Approval Matrix object.

A. Under the Custom Fields & Relationships related list, click **New**.
B. Select the `Lookup Relationship` radio button under **Data Type**, and click **Next**.
C. Select `User` from the **Related To** picklist, and click **Next**.

   i. **Field Label**: `Approver #1`
   ii. **Field Name**: `Approver_1`

D. Click **Next**.
E. Set the field visible for the Custom-HR, Custom-Executive, Custom-Recruiter and System Administrator profiles and click **Next**.
F. Click **Save & New** to add the field to the page layout.
G. Select the `Lookup Relationship` radio button under **Data Type**, and click **Next**.
H. Select `User` from the **Related To** picklist, and click **Next**.

   i. **Field Label**: `Approver #2`
   ii. **Field Name**: `Approver_2`

I. Click **Next**.
J. Set the field visible for the Custom-HR, Custom-Executive, Custom-Recruiter, and System Administrator profiles, and click **Next**.
K. Click **Save & New** to add the field to the page layout.
L. Select the `Lookup Relationship` radio button under **Data Type**, and click **Next**.
M. Select `User` from the **Related To** picklist, and click **Next**.

   i. **Field Label**: `Approver #3`
   ii. **Field Name**: `Approver_3`

N. Click **Next**.
O. Set the field visible for the Custom-HR, Custom-Executive, Custom-Recruiter and System Administrator profiles and click **Next**.
P. Click **Save & New** to add the field to the page layout.
Q. Select the `Picklist` radio button under **Data Type**, and click **Next**.

   i. **Field Label**: `Department`
   ii. **Values**: `Engineering, Finance,IT, Sales, Support`
   iii. **Field Name**: `Department` (This field auto-populates.)

R. Click **Next**.

S. Set the field visible for the Custom-HR, Custom-Executive, Custom-Recruiter, and System Administrator profiles, and click **Next**.
T. Click **Save & New** to add the field to the page layout.
U. Select the `Picklist` radio button under **Data Type**, and click **Next**.

   i. **Field Label**: `Priority`
   ii. **Values**: `Critical`, `High`, `Medium`, `Low`
   iii. **Field Name**: `Priority` (This field auto-populates.)

V. Click **Next**.
W. Set the field visible for the Custom-HR, Custom-Executive, Custom-Recruiter and System Administrator profiles and click **Next**.
X. Click **Save & New** to add the field to the page layout.
Y. Select the `Text` radio button under **Data Type**, and click **Next**.

   i. **Field Label**: `Routing Key`
   ii. **Length**: `200`
   iii. **Field Name**: `Routing_Key` (This field auto-populates.)

Z. Click **Next**.
AA. Set the field visible for the Custom-HR, Custom-Executive, Custom-Recruiter, and System Administrator profiles, and click **Next**.
BB. Click **Save** to add the field to the page layout.

6. Create a new position approval matrix.

   A. Click on the Position Approval Matrices tab. (Click **+** to see more tabs, if necessary.)
   B. Click **New**, then use the lookup icon to select the approvers.

      i. **Approver #1**: `Ben Stuart`
      ii. **Approver #2**: `Andrew Goldberg`
      iii. **Approver #3**: `Cynthia Capobianco`
      iv. **Department**: `Engineering`
      v. **Priority**: `Medium`
      vi. **Routing Key**: (cleared)

   C. Click **Save**.

7. Create an Apex trigger to automatically populate the Approver fields on new positions.

   A. Navigate to the folders you downloaded and extracted to your desktop in as part of step 1.
   B. Open the `\M13_Approval ProcessesExerciseFiles\ ApexClass.txt` file.
   C. Copy all of the contents in the file, then navigate to **Setup | Develop | Apex Classes | New**.
   D. Paste the contents from the file into the entry screen, then click **Save**.
   E. Open the `\M13_Approval ProcessesExerciseFiles\ ApexTrigger.txt`

F. Open the file `ApexTrigger.txt`, copy the entire contents of the file, then navigate to **Setup | Create | Objects | Position**.
G. Scroll down to the Triggers related list, and click **New**.
H. Remove all existing text, then paste the trigger and click **Save**.

8. Populate approvers on a Position.

A. Click the Positions tab.
B. Click **New**.
C. Select `Technical Position` from the **Record Type of new record** picklist, and click **Continue**.

i. **Title**: `Usability Tester`
ii. **Type**: `Full Time`
iii. **Department**: `Engineering`
iv. **Location**: `San Francisco`
v. **Pay Grade**: `ENG-200`
vi. **Hiring Manager**: `Andy Macrola`
vii. **Priority**: `Medium`
viii. **Status**: `New`
ix. **Job Description**: `Test our product to make sure users can use it.`

D. Click **Save**. Note that the Approver fields are automatically populated based on the Position Approval Matrix.

9. Modify the existing approval process to use this dynamic routing.

A. Click **Setup | Create | Workflow & Approvals | Approval Processes**.
B. Select `Position` from the **Manage Approval Processes For:** picklist.
C. Click on **3-Step Position Approval #1**.
D. Open the **Edit** picklist and select **Entry Criteria**.
E. Specify the second through fourth lines of entry criteria as
`Position:Approver#1 | not equal to |`
`Position:Approver#2 | not equal to |`

`Position:Approver#3 | not equal to |`

[leave Value field blank on each line] and click **Save**.

F. Scroll down to the Approval Steps section.
G. Next to Step 1, click **Edit**.
H. Click **Next**, then **Next** again.

i. Select the `Automatically assign to approver(s)` radio button from the list.
ii. Select `Related User` from the picklist that appears, then select `Approver #1`.

I. Click **Save**.
J. Repeat to make Approver #2 the designated approver of Step 2, and Approver #3 the designated approver of Step 3.

10. Test the new approval process.

A. Click the Positions tab, then click on the position **Usability Tester**.
B. Click **Submit for Approval** under the Approval History related list.
C. Click **OK**.
D. Who is the position routed to?

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