ORACLE INTELLIGENT ADVISOR

GUIDE TO DESIGNING A POLICY MODEL

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ABOUT THE AUTHOR

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ACRONYMS AND ABBREVIATIONS

OPA	Oracle Intelligent Advisor
OPM	Oracle Policy Modeling
OPM Help	Oracle Policy Modeling Help

CONTENTS

CHAPTER 1. INTRODUCTION

This document describes what needs to be considered when designing the policy model for an Oracle Intelligent Advisor project.

This document is not intended for training someone who is new to Oracle Intelligent Advisor. Ideally, anyone responsible for designing a policy model should have prior OPA implementation experience. At a minimum, anyone who is working on the design of an OPA policy model should complete the following Oracle University courses:

- **Oracle Policy Modeling Rel 10.2: Essentials Part 1**
  http://education.oracle.com/pls/web_prod-plq-dad/db_pages.getCourseDesc?dc=D72146GC10
- **Oracle Policy Modeling Rel 10.2: Essentials Part 2**
  http://education.oracle.com/pls/web_prod-plq-dad/db_pages.getCourseDesc?dc=D72144GC10

This document does not provide descriptions of Oracle Policy Modeling functionality, nor is it intended to provide 'how to' advice for using OPM features and functionality. For descriptions of OPM functionality and information about how to use the features and functionality of OPM, please refer to the OPM Help.

The guidance in this document is not specific to a particular version of Oracle Policy Modeling. It is general guidance which is relevant to any version of OPM from recent years. Examples provided are just that: examples to help illustrate a design practice. They are not intended to illustrate the correct way to design any specific policy model under development.

1.1 KEY PRINCIPLES

The key principles you should already know are:

- Policy model design and development fits in with any software development methodology. Oracle Intelligent Advisor is well-suited to being used on agile projects, but works equally well with traditional waterfall methodologies.
- Roles on an OPA project team typically include: rule architect, rule author, technical architect, technical developer (for any customizations/deployment), test manager and tester. One person may fill more than one role, though at minimum the rule author and tester roles are usually filled by separate individuals.
- The rule architect creates the design for the policy model component. The technical architect creates the design for any components outside of the compiled policy model. The test manager creates the test strategy.
- The physical file structure of the folders, documents etc within Oracle Policy Modeling can be organized independently of the rule content.

If you are unfamiliar with these concepts, you should review the lesson *Planning an Intelligent Advisor Project* from the course *Oracle Policy Modeling Rel 10.2: Essentials Part 2* course before continuing.

CHAPTER 2. CREATING A DESIGN DOCUMENT

Before you get into the core of your design, some good practices will assist your team (and anyone working on the policy model after you) to find and apply your design.

2.1 DOCUMENT NAME

Give your document a simple but descriptive name so that the development team can easily identify it once other project documentation has been created. If there are (or will be) other design documents, such as designs for other system components, make it clear that your design refers to the policy model. Also remember to include the policy model name.

For example, "**Flood Assistance Policy Model Design**".

2.2 TEMPLATES

If you find a design template you can use, be prepared to add (and delete if appropriate) sections from the template. Every design is different so it is important that you capture <u>all</u> relevant details, not just the ones that are suggested in your template.

2.3 HEADINGS

While it is important to design key aspects of a policy model upfront, a good design will be used as a reference throughout the lifecycle of a project, and will be updated to reflect key design decisions as the project progresses. Using headings throughout your design document will assist the reader to quickly find the sections most relevant to them.

2.4 POLICY MODEL OVERVIEW

The first paragraph in your design document should explain the purpose of the policy model. This gives the reader some idea of perspective and understanding of the solution as a whole.

A good overview **will**:

- Name the policy model.
- Mention why the policy model is being developed.
- Mention how the policy model will be used or accessed.
- Mention the source material (only if it is a key driver for building the policy model).
- Be concise (1-2 paragraphs).

Design Example 1

Policy Model Overview

The Floods Assistance policy model will be an online interactive tool to allow members of the public to assess their eligibility for Flood Assistance under the City of Venice Flood Assistance Policy.

Design Example 2

Policy Model Overview

The Rent Assistance Calculator is being developed for the Westgate Rent Assistance Agency to help process and notify their clients of quarterly rent increases. The policy model will be used as part of a backend system with the outcomes of the policy model used to generate notification letters.

When in doubt, remember that a good overview should be literally an 'overview'. It should not explain any aspect in detail. If detailed explanation is required, it can be addressed in the main body of the design document.

CHAPTER 3. POLICY MODEL GOALS

Before you begin detailing your design you will need to have a clear idea of what the policy model needs to do. This includes:

1. Determining the **goals**. The policy model goals (also called substantive goals) are the outcomes the policy model is created to determine, calculate or report, once all input data (also called base attributes) have been provided. In other words, the key *inferred* attributes in the policy model.

2. Determining any **screen order** or **procedural goals/flows**. The screen order or procedural goals/flows are concerned with the process by which base attributes are collected.

Not every policy model will have both substantive policy model goals and screen order or procedural goals/flows. For example, a policy model calculating a person's tax concession may not require the information in any particular order so it would have only a substantive goal. A policy model collecting data for a survey may require the data to be collected in a particular order but not use that data to infer an outcome so it would have a procedural goal/flow but no substantive goal.

3.1 IDENTIFYING SUBSTANTIVE GOALS

Some questions you can ask to determine the substantive goals include:

- What outcomes would the user expect from the policy model?
- What outcomes are provided by existing systems or processes?
- Will the policy model need to contain information on any related topics?
- What supporting information or advice should the policy model provide at the end of the interview?

Remember the substantive goals are about giving an answer in response to the information provided. They are not concerned with what, or how, the information is collected.

Design Example 1

Policy Model Goals

The Floods Assistance policy model will determine the following:

- Whether or not the applicant is eligible for Flood Assistance.
- The amount of Flood Assistance payable (if eligible).

Design Example 2

Policy Model Goal

The Rent Assistance Calculator will determine the household's current rate of rent assistance.

3.2 IDENTIFYING SCREEN ORDER OR PROCEDURAL GOALS/FLOWS

Some questions you can ask to determine the procedural requirements include:

- Is there any requirement that information be collected in a particular order?
- In what order is information collected by existing systems or processes?
- Is there any information or base data that needs to be collected even though it is not used to infer an outcome? (Such as name, address, product ID).
- Is there a logical order in which to collect data which will feel more sensible to the end user? For example, it will generally feel more natural to collect general data (e.g. date of birth) before very specific data (e.g. obscure details about medical conditions).

Design Example 1

Screen Order / Procedural Rules / Flows

The Floods Assistance policy model will collect information in the same order as the existing Flood Assistance Claim Form.

Design Example 2

Screen Order/Procedural Rules/Flows

As the Rent Assistance Calculator will be run in the rule server and all data is expected to be known at the start of the interview, no procedural rules or flows are required.

3.3 IDENTIFYING ADDITIONAL GOALS/FLOWS

You may identify additional goals or flows as you continue to develop your design document (for example, during the Scoping stage, discussed later) or as your project progresses. Remember to keep the 'Policy Model Goals' and 'Screen Order / Procedural Goals / Flows' sections of your design document up-to-date as your design develops.

CHAPTER 4. SOURCE MATERIAL

4.1 IDENTIFYING SOURCE MATERIAL

Now that you've identified what the policy model needs to do, you should document what sources of information you will use in order to build the policy model. This source material may include:

- Policy
- Legislation
- Existing forms
- Spreadsheets
- Flow charts
- Workshops

4.2 MULTIPLE SOURCE DOCUMENTS

Where you have multiple source documents, include a short summary of what the document is primarily about to help the reader identify what type of information the document contains and to what part of the policy model it relates.

At this stage, keep this list at a high-level, rather than listing specific sections or parts. You can come back to add more detail later.

4.3 RECONCILING SOURCE MATERIAL

If you have multiple documents covering the same information, it is also helpful to indicate which document will be given the greatest importance when building the rules.

Design Example 1

Source Material

The following sources will be used to create the policy model:

- City of Venice Flood Assistance Policy. This document outlines the Flood Assistance eligibility rules and rates of payment.
- 2009/2010 Schedule of Rates. This document contains the rate of payment for Flood Assistance and other benefits.
- Flood Assistance Claim Form. This document is the paper-based form currently used to claim Flood Assistance.

Design Example 2

Source Material

The policy model will model the rule tables specified in the spreadsheets rates.xls and updates.xls.

CHAPTER 5. SCOPE

Once you have identified your policy model goals and your source material, take a moment to compare the two. It is common for:

- **Source material to not provide enough information to prove your goals.** If this happens you will need to find additional sources of information from which to create your rules, reduce your goals or provide design guidance on how to simplify your rules to work with the information provided.
- **Source material to include more information than is covered in the goals.** While not an issue in itself, if the source material proves additional goals or indicates there is a preferred procedure when collecting information, it may indicate you have missed a requirement in the 'Policy Model Goals' section of your design.

Either of these situations may require you to clarify and update the 'Source Material' or 'Policy Model Goals' sections of your design.

EXAMPLE

Assume you are asked to model the Flood Assistance Policy in order to determine the following policy model goals:

- The applicant is eligible for flood assistance, and
- The amount of Flood Assistance payable (if eligible)

To do so, you are only provided with the Flood Assistance Policy provided below.

> *Flood Assistance Policy*
>
> *A person is eligible for Flood Assistance if during the December 2008 Venice floods the person was seriously injured or their principal place of residence was destroyed or uninhabitable for a period of 48 hours or more.*
>
> *A person eligible for Flood Assistance is also automatically entitled to Emergency Relief Payment.*

Once you compare your policy model goals to your source material, you should notice that:

- You have no source material to determine the amount of Flood Assistance payable. You should clarify whether this goal is actually required by the policy model and either remove it from the goals or add source material which can be used to determine the goal.
- You have additional information in the source material – in addition to the goals stated, you can also determine whether or not the applicant is entitled to Emergency Relief payment. You may want to clarify whether this is to be included in the policy model and, if so, add it to your list of goals. If the additional information is not to be included, you do not need to mention this in your design unless doing so would be helpful to avoid ambiguity in this area.

CHAPTER 6. ADDITIONAL FUNCTIONALITY

In addition to your rules and procedural goals/flows, an Oracle Policy Modeling project often consists of additional functionality such as:

- Generated documents
- Commentary (help text)
- Customizations
- Functionality specifically added to assist testing (for example, additional rules, screens or public names).
- Functionality specifically added to guide the user experience (for example, validation rules).

If your project includes any of these you will need to create a section in your design document explaining what is required for that specific area of functionality. Depending on the complexity of the functionality, the design for each area of additional functionality may require a paragraph, a whole chapter or even a separate specific design document detailing the approach.

Design Example 1

Commentary (help text)

Commentary will be provided for every base level attribute. Each commentary page will be created in the form <public name>.html to clearly identify which base level attribute the commentary page relates to.

Each commentary page will use the commentary.css stylesheet.

Each commentary page will include the following information:

- Attribute question text
- Why the question is being asked
- Meaning of specific words (if required)
- Examples of how to answer the question
- Links to additional information

This information will be primarily sourced from the ABC Policy Manual.

Design Example 2

Generated Documents

Once a decision has been reached, the deciding officer would usually complete either a HRC2 form or a HRC3 form. These documents will be automatically produced by the application.

These forms will be available on the summary screen once the interview has been concluded. That is, once it is known whether or not the claimant is eligible. A link to the HRC2 form will appear if the claimant is eligible, otherwise a link to the HRC3 form will appear.

Once clicking on this link, the deciding officer will be asked whether or not they want to open this file in a web browser (the deciding officer can view the document and save it using this method) or to save the document to the local machine.

The forms will, as far as possible, match the style, content and layout of the existing HRC2 and HRC3 forms. Where the forms include information not otherwise collected in the interview, an additional screen will be inserted at the end of the interview to collect this information (see the section on Screen Order / Procedural Goals / Flows earlier in this design document).

6.1 SOURCE MATERIAL FOR ADDITIONAL FUNCTIONALITY

Remember to list any source material used to create the additional functionality in the Source Material section of your design. If the source material for your additional functionality is different to the source material for the main body of your rules, it may be helpful to document this.

CHAPTER 7. PERSPECTIVE, TENSE, ENTITIES AND RELATIONSHIPS

Once you have identified all of your rules and requirements, you need to make some decisions about how the rules will be authored. Specifically, there are decisions you need to make upfront that will affect rule structure and attribute wording.

7.1 PRIMARY PERSPECTIVE

When writing your rules and wording your attributes, you usually need to be aware of who the end user of the system will be. For example, if you are building a system to assess eligibility for a payment, you could refer to the person applying for the payment as "the applicant", "the person" or "you". If you nominated "the person" as the primary perspective in your design, your rules might look like this:

```
The person is eligible for payment if
    The person is sick or
    The person is poor
```

If you nominated "the applicant" as your primary perspective in your design, your rules may look like this:

```
The applicant is eligible for payment if
    The applicant is sick or
    The applicant is poor
```

Note that that the primary perspective does not need to be a person, nor does it need to be an entity (usually the primary perspective is used in Global attributes only). The primary perspective is simply a reflection of who, or what, the policy model is primarily written about.

Design Example 1

Primary Perspective

The Floods Assistance policy model will be written from the perspective of "the applicant" (for example "the applicant is eligible for Flood Assistance").

The Floods Assistance policy model will not require any entities or relationships.

Design Example 2

Primary Perspective

The Rent Assistance Calculator will determine the outcome for a household. As such, the rules will primarily be written from the perspective of "the household".

7.2 TENSE

Whether attributes are worded in the past tense ("has been"), present tense ("is") or future tense ("will be") depends on the context of your rules and how the rules will be used.

In terms of design, it is more important to consider the point in time your policy model will be used than the tense of your source material, which is often written in a more generic style.

For example, consider the following rule:

> "An applicant is considered to have met the health test if the applicant has passed an approved medical examination."

If the policy model is being used by an assessor, the question may be asked as:

> "Has the applicant passed an approved medical examination?" (past tense)

However, if the policy model is being used by an applicant who has not yet had the examination, the attribute may need to be adapted into present or future tense, for example:

> "Are you willing to take a medical examination by an approved examiner?" (present tense)

Documenting in your design how the policy model is likely to be used and using this information to give general guidance about attribute tense can help to bring consistency to your policy model attributes and help to create a policy model appropriate for the audience.

If the policy model is likely to be used by users at different points in time, it is generally helpful to keep the attribute tense as neutral as possible and to address this issue later in your design.

Design Example 1

Tense

The Floods Assistance policy model will be used by a person who has already suffered personal injury or property loss from flood damage but who has not yet made an application for assistance. Policy model attributes should be worded in the appropriate tense with this in mind.

Design Example 2

Tense

The Rent Assistance Calculator will generally be written in present tense (for example "the household is a single parent household").

7.3 ENTITIES AND RELATIONSHIPS

In order for the rule developer to know how to phrase and structure the rules, and for testing and data integration purposes (to know which attributes can have multiple values), your design needs to specify the entities and relationships you expect to appear in the completed policy model (i.e. a basic data model).

For more information on how to identify entities and relationships in your source material, refer to the OPM Help.

7.3.1 DOCUMENTING ENTITIES AND RELATIONSHIPS

Describe your entities and relationships by whatever means will make the most sense to the readers of your design document, including:

- A description of each entity and relationship.
- A table of entities and relationships.
- A diagram (such as a high level data model).

Using a combination of these techniques to describe your entities and relationships can also be helpful.

Design Example 1

Entities and Relationships

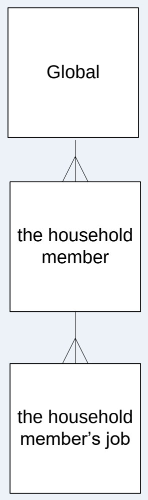
The Floods Assistance policy model will not require any entities or relationships.

Design Example 2

Entities

The Rent Assistance Calculator will require an entity for "the household member" (note that "the household" is Global). There may be many household members. The entity “the household member” will be contained by Global.

The Rent Assistance Calculator will also have an entity for “the household member's job”. Each household member may have multiple jobs. The entity “the household member’s job” will be contained by the entity “the household member”.



Containment Relationships

From	**To**	**Type**	**Text**	**Reverse Text**
Global	the household member	one-to-many	the household members	(none)
the household member	the household member's job	one-to-many	the household member's jobs	the household member

CHAPTER 8. DESIGN CONSTRAINTS

8.1 IDENTIFYING DESIGN CONSTRAINTS

Design constraints are anything that influences the options you have available to you when building a policy model. They can include:

- **The user**. The level of education, subject matter knowledge and familiarity the end user has with similar systems, may affect the complexity, outcomes, look or procedural flow of the policy model. For example, if you are modeling complex tax law, you may need to simplify the language of base level attributes if you are expecting a person without tax law knowledge to use the policy model.
- **An existing data model.** If your system is integrating with an existing data model, you may find that the policy model needs to include more, or fewer, attributes than you originally intended. For example, if your source material contains two pages of rules describing what constitutes a valid document, and the existing data model simply supplies two pieces of data to prove this, then you may not be able to model the detail in your source rules.
- **Skill-sets.** The skills and experience your team bring may allow you different levels of creativity in your policy model design.
- **Information.** The information you have available to you at the start of the project is usually the information on which you base your design. When you know you are likely to receive additional information (such as a missing component or updated rules for the following year) your design needs to be flexible enough to accommodate this.
- **Timeframe.** Once you have finished your design you may find that it is simply not possible to complete everything within the required timeframe. If your design cannot be achieved within the desired timeframe, you may need to revisit your design to see where you can improve efficiency in your design or remove non-essential components.

Every project is different. It is important to ask yourself on every project "**What is influencing my design?**" and "**How do I need to accommodate this?**"

8.2 DOCUMENTING DESIGN CONSTRAINTS

Documenting your design constraints serves to:

1. Clarify for yourself what factors you need to consider when building your design.
2. Verify with your team/stakeholders that the constraints exist.
3. Indicate that you have considered these constraints.
4. Explain why your design has taken a particular approach.
5. Inform and educate anyone who needs to apply and/or adapt your design.

Design Example 1

Design constraints

As the system is a pilot at this stage, it is constrained in its development time. This means that it will not be highly customized from the default Oracle Web Determinations functionality.

Design Example 2

Design constraints

Constraint	Effect
Limited development time	The policy model will be built in components, allowing some components to be delayed to a later release if required.
Existing data model / data collection	The policy model will only be modeled to the extent possible given the level of information available in the existing data model. This may mean some sections of the source material cannot be modeled.
Users are expected to complete the interview in less than 2 minutes	The policy model will be constructed with streaming questions and some questions will be defaulted and only able to be changed at the end of the interview, in an effort to reduce the length of a policy model interview.

8.3 DESIGNING WITHIN CONSTRAINTS

While constraints can be confronting at first, often they can result in some creative design outcomes. They may prevent you from designing the policy model in the way you originally envisaged, but often there is more than one approach that can be taken to achieve the same result.

Once you have identified your design constraints, consider whether the approach to building your policy model is still valid and, if not, consider whether an alternative approach can be taken to achieve the same result. In considering this, remember you are not limited to built-in or default functionality; you may need policy model customizations and/or custom properties to achieve the desired result.

Finally, if it is not possible to design a policy model which meets all of the requirements within the constraints, it is better to speak up and address this than to continue on to development only to discover that the policy model cannot be completed. It may be that some of the requirements or constraints can be removed in order to satisfy your project objectives.

CHAPTER 9. DESIGN COMPONENTS

At this point in the design process, you should have a good overview of what needs to go into the policy model to produce a complete system. Once you have this high-level overview, you will generally need to break this down into smaller, more manageable components so that:

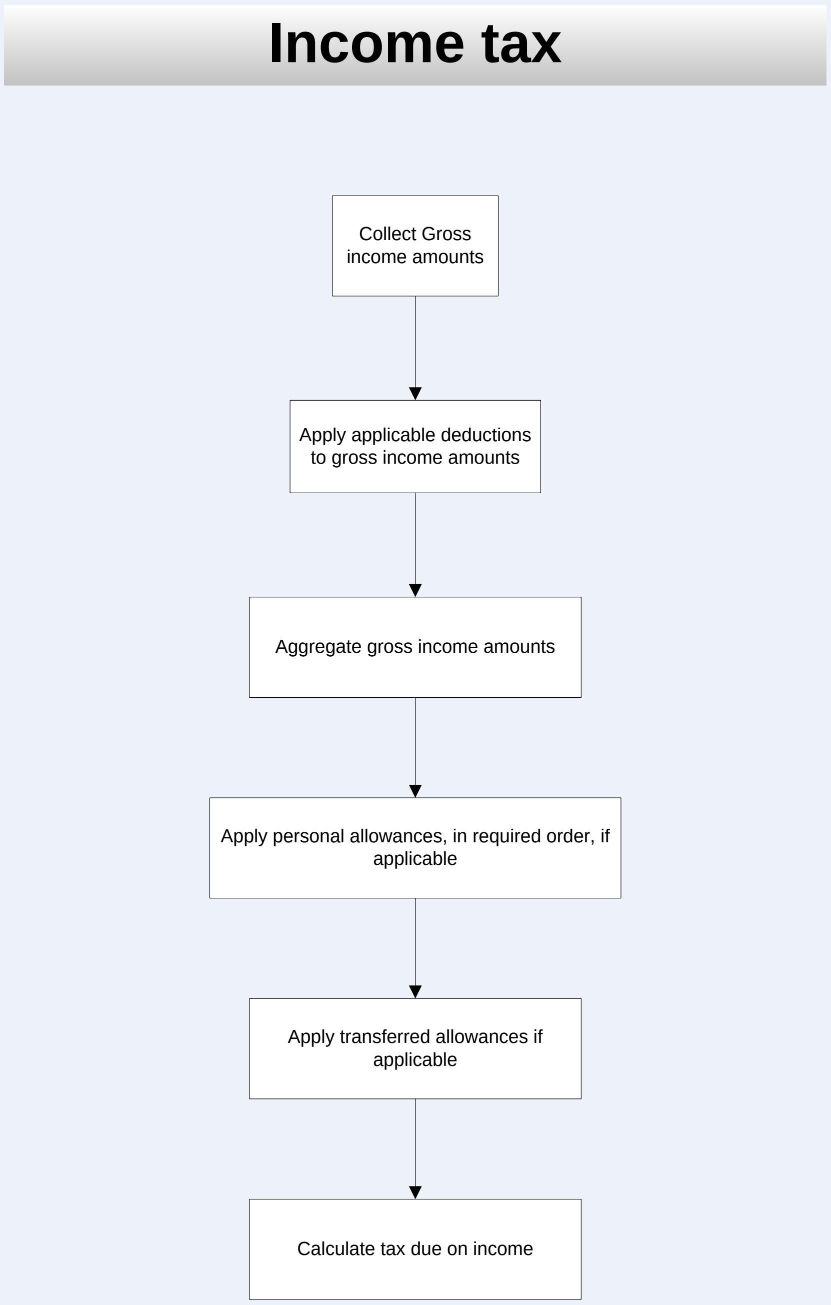
- The design includes a general skeleton of the completed solution.
- The work can be split among the development team.
- The work can be prioritized.
- The policy model can be created and tested incrementally.
- Areas requiring specific detailed design can be addressed individually (this is covered in more detail in the next section).

Breaking your design down into smaller components also allows you as the designer to consider each aspect of your design on a more micro level, allowing you to think through every aspect of the design to ensure you have not missed any important considerations and consider whether your overall solution is workable.

Design Example 1

Calculating Income Tax

The following diagram represents the discrete components of the Income Tax calculation.


Income tax
Collect Gross income amounts
Apply applicable deductions to gross income amounts
Aggregate gross income amounts
Apply personal allowances, in required order, if applicable
Apply transferred allowances if applicable
Calculate tax due on income

Design Example 2

Procedural Rule Components

The main procedural goal can be broken down into a series of components:

The current accommodation stage is complete

This sub-goal collects information relating to the client’s current accommodation including:

- The client’s existing type of accommodation
- The risk of homelessness and details of this risk
- The nature of any current leases
- Whether the client is the sole member of the household
- The duration of any time in crisis accommodation if applicable
- The client’s mailing address details

The current client circumstances stage is complete

This sub-goal collects information relating to the client’s current circumstances including high level facts used to determine what areas require further investigation as a part of needs investigation. This information includes whether the client:

- Suffers from a medical condition
- Has a disability
- Is a victim of crime/domestic violence
- Is expecting a child

CHAPTER 10. DETAILED DESIGN

Once you have created the basic building blocks and foundation principles guiding your design, the last area you need to consider is whether you have provided sufficient detail for your design to be followed. In some areas, you may need to add more detail.

10.1 WHEN TO CREATE DETAIL

While it can be helpful to go into detail in some areas of the policy model design, going into detail in every area can be overly time-consuming and lead to large, unreadable design documents that become impossible to maintain. A good design will find a balance, creating a detailed design in areas where detail is required and leaving open areas which are fairly self-explanatory. As a general rule, you will need to create a detailed design where:

1. There are multiple ways of modeling a particular area and the approach taken will impact the overall functionality or quality of the policy model.
2. You had to put considerable thought into how a particular requirement can be addressed.
3. Your design's complexity is such that a person looking at the policy model afresh would not easily understand how the policy model is functioning.
4. You have included any custom functionality that is specific to your policy model.

You may find it helpful to think through each component identified in the section above separately to test whether any aspect of that component requires a detailed design. Two examples of additional detailed design follow.

Design Example 1

Detailed Design

Working Week

Where the applicant's normal working week can include weekends, this information will be collected as a series of checkboxes on a single screen requiring the user to select the days of the week on which the applicant is usually engaged in paid employment. Monday-Friday would be checked by default so for most applicants, the user can simply progress past the screen. This method of data collection would allow for saved data to be later analyzed in order to determine how many applicants work a 6 or 7 day week.

Where the applicant's normal working week does not need to be considered, this information will not be collected.

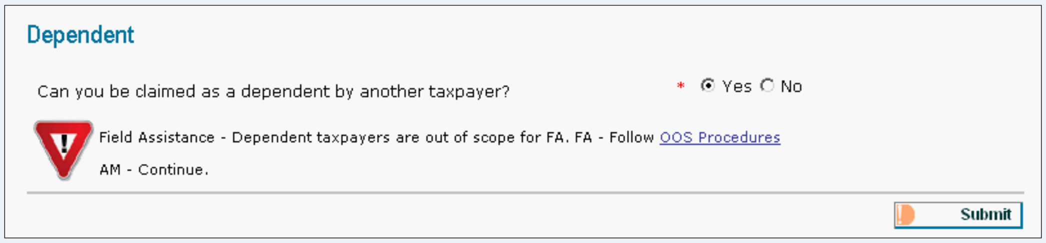
Design Example 2

Areas Requiring Specific Attention

Stop Messages

Stop messages will need to be displayed midway through the interview on a question screen so that users can determine whether they have sufficient privileges to continue on to the next question. As the user's permissions are not available to the policy model, the policy model will notify the user that a stop point has been reached and trust the user to manually terminate the interview if required.

These stop messages need to contain the appropriate image and hyperlink to relevant materials so cannot be achieved using a standard warning rule. Instead, combination of warning rules (to stop the interview) and labels (to display the text) will be used.


Dependent

Can you be claimed as a dependent by another taxpayer? * [✓ Yes] No

Field Assistance - Dependent taxpayers are out of scope for FA. FA - Follow OOS Procedures

AM - Continue.

There are therefore 3 steps to creating a stop message:

1. Prove a visibility attribute for each stop message

2. Use the visibility attribute to generate a warning

3. Use the visibility attribute to display a stop message label on each relevant question screen.

Each of these steps is explained in more detail below… (*additional detail omitted from example*).

10.2 RULE TEMPLATES AND PRECEDENTS

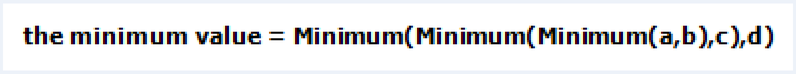
Providing examples of rules in your detailed design can be a good way to ensure consistency across similar rule types. A **Rule Template** is simply a rule structure that other rule developers can copy when modeling similar rules. When a complete, workable rule is provided as an example, it is usually called a **Rule Precedent**. Regardless of which you use, creating examples of key rules in the design can be an excellent way of conveying your intention in detail.

Design Example 1

Rule Templates

Minimum

The calculations in this policy model often require the minimum of 3 or 4 variables to be determined. Rather than creating a separate rule for each minimum function, the following approach should be used to determine the minimum of multiple variables:

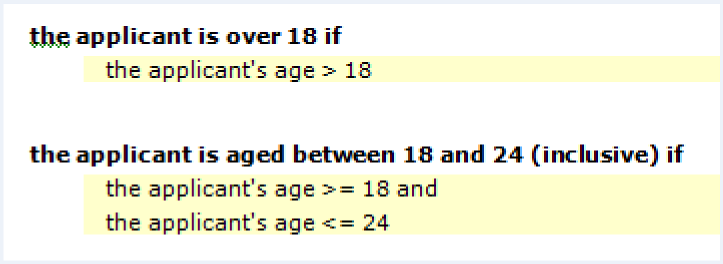


```
the minimum value = Minimum(Minimum(Minimum(a,b),c),d)
```

Design Example 2

Rule Precedents

Age Rules



```
the applicant is over 18 if
        the applicant's age > 18

the applicant is aged between 18 and 24 (inclusive) if
        the applicant's age >= 18 and
        the applicant's age <= 24
```

CHAPTER 11. OTHER DESIGN DOCUMENTS

11.1 USER INTERFACE DESIGN

If you are creating the screens for your policy model, you will also need to create a basic design for how these screens are going to look. The level of detail required for this User Interface Design will vary, depending on the importance of your user interface requirements. In some instances, a few words at the end of your design document will be sufficient, in other cases a separate user interface design will need to be created and agreed to before your project can commence.

11.1.1 WHAT TO INCLUDE

Your user interface design may include:

- A listing of the contents of key screens, such as the summary screen.
- The order in which screens should appear on the Data Review Screen.
- Advice on when to use substitution text in screen headings, labels etc.
- Advice on what heading styles to use.
- Advice on when to use capitalization in screen headings, labels, question text, drop-down list entries.
- Advice on visibility attributes.
- Advice for additional links on the summary screen or question screens.
- Advice on how to collect multiple monetary amounts.
- Advice on how to collect a list of items.
- Advice on how and when to collect uncertain answers.
- Advice on the content and location of any commentary.
- Example screenshots.
- Examples of commonly-used screen structures.
- Example html (such as how to insert html tags in free from question text to make a word bold).
- Explanations of any custom screen functionality.

The examples provided below show only extracts of a complete user interface design.

Design Example 1

Screen Contents

Summary Screen

At the start of an inquiry the summary screen will show:

- Welcome label - a label indicating the name and version of the application
- Link to investigate the amount of payment

At the completion of an inquiry the summary screen will show:

- Eligibility for payment
- The total amount of payment due (if eligible)
- A warning indicating if the calculation period spans a rate update (to appear if the specific warning is required)
- Document heading
- Link to generate an application form

Personal Screen

The Personal screen will be used to collect information about the user designed to tailor the interview. For example, questions can be asked using the customer’s name "Is James a student?". At this stage, it is likely that the screen will collect the following information:

- Investigation Date
- Client Name
- Client Gender
- Client Address
- Client Age

Design Example 2

Question Screen Design

Screen Names

Screen names are important to convey meaning on question screens and make sense of the data review screen. Screen names should:

- be written in sentence case, with proper nouns capitalized (e.g. ‘Prior employment in Smithville)

- use variable substitution if it will add meaning for the user.

Wherever a question screen is specifically about a member of the household, the screen name should end in “for %relevant_person_details%” (the relevant person) or “for %relevant_other_person_details%” (the relevant other person). This provides consistent information to the user to identify easily who the questions are about, e.g. “Billy (customer, 51 years)”, “Jane (partner, 50 years)”, “Mary (dependant, 15 years)”, “Jack (non-dependant 73 years)”. Question screens about the household in general should not use substitution in the screen name.

Question Screen Layout

Generally, each screen should contain a maximum of four questions. However, more questions per screen are acceptable where the questions are simple and take less than one line (e.g. Title, First Name, Last Name, Date of Birth, Address), or if a screen collects a group of related questions which will all be defaulted (e.g. asking about a set of uncommon exceptions).

Question Screen Headings

The customized application will use the screen name as the first heading on the screen. Additional headings are an important mechanism for conveying meaning about the screen. Variable substitution, for example, %client_details%, may be used in headings. The following heading levels are to be used:

- Heading 1 for major headings (e.g. "Period of Service of %client_details%")
- Heading 2 for short labels (e.g. "If so...")
- Heading 3 for long labels (e.g. where the screen is asking a question split into a common start and different ends)
- Heading 4 for sentences of explanatory text

Mandatory Input Controls

By default all questions should be mandatory, unless there is compelling reason to allow uncertainty.

Default Values

All input controls should contain default values if a sensible default value exists. Statements should be defaulted to yes or no depending on which is the more likely answer. Number and money variables should be defaulted to zero. Text and date variables should be left blank unless a sensible default value exists.

11.2 PHYSICAL POLICY MODEL STRUCTURE

Within Oracle Policy Modeling rules, you can organize and structure your documents in whatever way makes it easiest to structure your work. However, design guidance in this area can be most useful where:

- The project contains a large number of rule documents

- Multiple rule developers are working on the project
- Multiple rule developers are likely to be adding documents
- Some documents need to be re-used across another project
- Multiple policy models are expected to have similar structures.

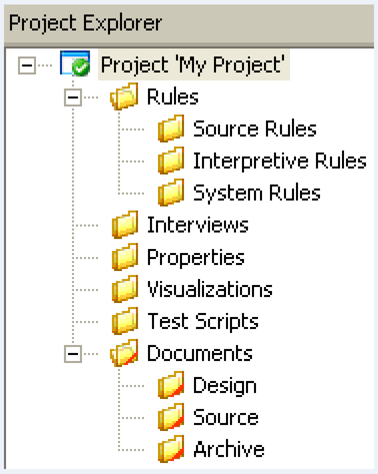
Creating a predictable, organized file structure will allow other rule developers to more quickly and easily find the documents they are looking for.

Similarly, you may also want to give guidance on how to structure individual rule documents.

Design Example 1

Physical Policy Model Structure

The folders within the policy model project will be constructed as follows:



Rules – contains all rule documents that are part of the build, including:

Source Rules – rules that originated from the source material.

Interpretive Rules – rules that add to the meaning or understanding of the source material. For example, rules that prove age from date of birth.

System Rules – rules that control the flow or display of questions and summary screen items. This includes:

Visibility rules

Screenflow rules

Drop-down list rules

Warning and Error event rules (including Validation rules)

Interviews – contains a single screens file and any screen flows.

Properties – contains a single properties file.

Visualizations – contains any visual browser files created for the project (optional).

Test Scripts – contains all test scripts and test cases created for the project.

Documents – contains all document that are not part of the build and do not rely on policy model data. For example:

> **Design** – contains all documents that describe the design or structure of the policy model (including any analysis of the source material).
>
> **Source** – contains the source material i.e. the information from which the policy model was built. This should include older versions of the source rules if the policy model has been updated over time.
>
> **Archive** – contains any rules or rule documents which no longer form part of the policy model but for one reason or another are helpful to keep for reference.

Refer to the ***Policy Model Naming Conventions*** document for more information on how to name each of the documents within these folders.

Design Example 2

Document Structure

All Word rule documents should contain headings which layout the structure of the document. This makes it much faster for rule developers after you to work with and understand the document, and will assist anyone printing the document to put the rules in context.

As a general guide:

- **OPM – Heading 1** style should be used once only at the top of the document stating the type of rules.
- **OPM – Heading 2** style should be used once only, below the first heading to state the source of the rules (if applicable).
- **OPM – Heading 3** and other heading styles can then be used to divide the information into logical groupings. The **OPM – Rule Name** style can also be used to mark individual rules as having particular importance or significance, such as the top-level goal.

11.3 POLICY MODEL NAMING CONVENTIONS

Policy model naming conventions assist policy authors to use consistent wording across the policy model. Typically, policy model naming conventions primarily provide advice on how to word attributes and public names, but can also include advice on the wording of:

- Document names
- Folder names
- Screen names
- Test cases

Design Example 1

Naming Conventions

Generally:

- Variables should refer to the unit of measurement unless they relate to the entire tax year or a standard concept (e.g. age is assumed to be counted in years).
- Full text is generally preferred over acronyms and abbreviations (with some exceptions noted below).
- Variables should usually be prefixed with "the" (e.g. "the tax year" rather than "tax year").

Entity-Level Attributes

All entity-level attributes are to contain the entity name even if the attribute is not used in rules.

Calculations from Worksheets

Where variables are taken from a step in a policy manual worksheet the variable should state the policy manual name, the worksheet number and the Step number. For example "the amount in the Child Tax Credit Worksheet 1 Step 4".

Abbreviations

Abbreviations should be avoided in this policy model. For example you should use "Head of Household" rather than "HOH".

Public Names

Attributes requiring public names should be named using a short description of the attribute text, omitting words such as "the", "of" etc, and including only words that uniquely identify the attribute. For example, "the person’s gross income from the trade or business of farming" could have the public name "income_farm" (assuming no other attributes related to farm income).

It is helpful to put the more generic word at the start of the public name and any specific words at the end of the public name, to make it easier to sort attributes by name. Hence "income_farm" is preferred over "farm_income" (assuming multiple attributes refer to income).

Public names on entity-level attributes should begin with "entity_". For example "child_age", "contribution_type").

All public names for visibility attributes should begin with "visibility_".

All public names related to income should begin with "income_".

All public names related to deductions should begin with "deduction_".

All public names related to totals should begin "total_".

Design Example 2

Acceptable attribute naming conventions for legislation

Convention	Description	Examples
Default structural logic	<legislation abbreviation> [s. / sch] <provision number> applies	SSCBA s.130(1)(c)(ii) applies
Basic structural logic	<primary perspective> [satisfies / is excluded by] <legislation abbreviation> [s. / sch] <provision number> and <provision number>	the claimant is excluded by SSCBA s.130(1)(c)(ii) the claimant satisfies SSCBA s.1(a) and (b)
Structural logic with sub-requirement description	<primary perspective> [satisfies/is excluded by] the <requirement description> requirement(s) in <legislation abbreviation> [s. / sch] <provision number>	the claimant's profits satisfy the tax requirements in SSCBA s.18 sch D(1)(a)(i) and (ii)
Structural logic with entities	<primary perspective> [satisfies / is excluded by] <legislation abbreviation> [s. / sch] <provision number> in respect of <entity>	the claimant satisfies SSCBA s.2(1)(a) in respect of the relevant other person
Variables	Either: an explicit description excluding the clause number; or a description of the calculation that populates the variable.	the partnered maximum basic rate the sum of SSCBA s.132(1)(a) and (b)

11.4 UPDATING POLICY MODEL NAMING CONVENTIONS

The policy model naming conventions are one of the areas of design most likely to change as the project develops, simply because more similarities are found between attributes in the policy model as the attributes are created, and therefore more decisions are being made about how to word the attributes and their public names.

For this reason, policy model naming conventions are often stored in a separate document. Regardless of where your naming conventions are recorded, be sure to keep the document up to date as new naming conventions are developed.

CHAPTER 12. CONCLUSIONS

The guidelines in this document have provided you with the foundation for building a design document. Remember that a good design will go beyond this – documenting all key aspects of the policy model solution, detailing areas that require further analysis and being adapted and updated as requirements change.

12.1 REVIEWING THE DESIGN

The first step once your design is completed is to have it reviewed. It may seem daunting at first to have your work scrutinized, but it will be far more embarrassing, and costly, if a significant change is needed once the policy model is partially-completed. Good reviewers will also identify where further clarification is needed and/or show you a better approach.

12.2 ADDING TO THE DESIGN

Do not be afraid to add to your design as you discover clarification is needed on a more detailed level. Often an area of ambiguity is not discovered until after development begins. Creating a change log at the start of the document can help others quickly identify areas that have been added since they last reviewed the document.

12.3 CHANGING THE DESIGN

If your design takes a change in direction, it is helpful to record the approach taken before and after the design change, particularly if stakeholders have agreed to the original design or where the decision to change the design may be reversed later. You can keep a record of the changes by:

- Creating a new version of the design document with higher version number
- Creating a change log at the start of the design document
- Creating an appendix at the end of the design document which includes the original text of the design

The important point is not to be afraid to make changes to your design document if you are changing the policy model. It is better to keep the design document as an accurate reflection of the policy model than to keep it in its original pristine state!

12.4 LEARNING FROM THE DESIGN

Once you have completed the rule project, pause to consider whether there is anything you could have done differently during the design stages so that you can build on your experience for next time.

USEFUL LINKS

Online Help Guides

- Oracle Intelligent Advisor Documentation Library: https://documentation.custhelp.com/euf/assets/devdocs/unversioned/IntelligentAdvisor/Default.htm

General Information

- Oracle Intelligent Advisor on the Oracle web site: https://www.oracle.com/cx/service/intelligent-advisor/

Forums

- Oracle Intelligent Advisor – General Discussion: https://community.oracle.com/tech/apps-infra/categories/intelligent_advisor_-_general_discussion
- Oracle Intelligent Advisor for B2C Service: https://cloudcustomerconnect.oracle.com/resources/742fffc5fa/summary (requires Oracle account login)