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Training

ANSAwise - Exercise Briefings: Intelligent Network Freephone [Bellcore]

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Abstract

These are the briefing notes for the intelligent network freephone system exercise for Bellcore.

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1 Intelligent Network Freephone Exercise Participant Briefing

1.1 Introduction to the Problem

1.1.1 What is an IN Freephone service?

An IN Freephone service is similar to a basic telephone service, where

1. the called number is an abstract number
2. the abstract number is translated to a real network address by the Service Control Point (SCP)
3. the service subscriber pays for the call, rather than the end user who makes the call

Except for translating an abstract number to a real network address, the SCP is also responsible for the

- billing
- charging
- managing

of the service subscribers.

1.2 Requirements of the Exercise

The purpose of the exercise is to model an IN-based freephone network, integrated call control, billing, and charging.

The exercise is subdivided into the following components.

1.2.1 Describe the service architecture

1. Define the
 - (i) entities involved in the service
 - (ii) their relationships
 - (iii) the functions of each entity

1.2.2 Discuss the service provision

Focus on what the service provider must offer

1. managing subscribers
2. translating abstract numbers
3. billing
4. charging

1.2.3 Decompose the service provider

Decompose the service provider object into several smaller entities and describe their functions and relationships.

1.2.4 Dynamic behaviour

Describe the dynamic behaviour of the system, particularly

1. describe a typical call procedure, stating which entities are involved and which actions are taken at each step
2. describe the charging process
3. describe the subscribing process

2 Intelligent Network Freephone Exercise Participant Summary

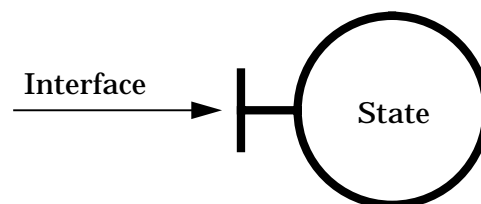
From this exercise, one should get an understanding, or at least the basic feel, of using the object-based approach to modelling an application system.

2.1 Concepts illustrated

Specific concepts that the exercise is designed to illustrate are

2.1.1 Object state and object interface

The distinction should be clear between the state of an object, which is, loosely, the data stored inside that object, and the interface through which that state/data is accessed and modified.



2.1.2 Static and dynamic object behaviour

The static behaviour of an object can be thought of as the way the object functions in itself. Its dynamic behaviour consists of the way it interacts with other components of the system, such as when it blocks or when it raises an exception.

2.1.3 Object aggregation and association

Association describes the situation when objects have some mutual relation to each other. Aggregation is the more special concept of there being an object which consists of the other objects, which are then said to form an aggregate object.

2.2 Ideal solution components

An ideal solution to the exercise as set should include work on the following components.

2.2.1 Architecture

A clear description of the architecture of the freephone service, including the main entities and their functions

1. end users
2. service providers (SCPs)
3. service subscribers

2.2.2 Functional decomposition

The SCP should be decomposed into smaller objects, namely those offering the functionality of

1. accounting
2. subscribing
3. translating

2.2.3 Interface decomposition

Each of the functional objects forming the SCP should include a clear description of their interface.

(Question: Is the SCP an aggregate object?)

2.2.4 Calling process

A clear description of the calling process, including

1. number translation
2. billing

3 Intelligent Network Freephone Exercise Instructor Briefing

This is the exercise as presented to the students.

3.1 Introduction to the Problem

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of the service subscribers.

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The exercise is subdivided into the following components.

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1. Define the
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 - (iii) the functions of each entity

3.2.2 Discuss the service provision

Focus on what the service provider must offer

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2. translating abstract numbers

3. billing
4. charging

3.2.3 Decompose the service provider

Decompose the service provider object into several smaller entities and describe their functions and relationships.

3.2.4 Dynamic behaviour

Describe the dynamic behaviour of the system, particularly

1. describe a typical call procedure, stating which entities are involved and which actions are taken at each step
2. describe the charging process
3. describe the subscribing process

The following is the post-exercise summary as presented to the students

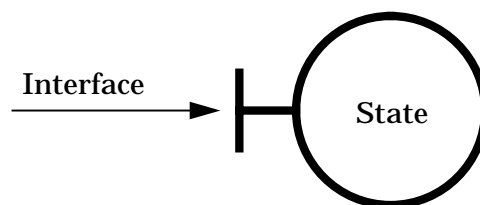
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1. number translation
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