

IFPUG 4.1 PRACTICE CERTIFICATION EXAM

Student Question Sheet

EXAM 2001

PART 3 – CASE STUDY

Version 1.0

The ACME Software Group has been asked to develop an Assignment Management system for the “Girl Friday Agency” now known as GFA Inc (after the Equal Opportunities Board suggested they change their name). The new system will be called the Assignment Management System (AMS), and shall be used by the Management Team at GFA to monitor and control the placement of Temporary Administrative staff (alias “temps”) into companies whose staff are on leave or needing extra help during peak times.

Placements of “temps” can be for duration of a few hours to six months. GFA currently have around twenty of these free-lance staff on contract that they provide placements for.

AMS is currently in design phase and the specification requires a Function Point count. The principal analyst has had preliminary discussions with the GFA in order to determine their functional requirements. Currently, the following is known:

AMS Data Requirements

Assignment Information is required to be maintained for every Assignment (alias job).

<i>Assignment-Id Number</i>	<i>Assignment Type</i>
<i>Assignment-Name</i>	<i>Assignment Status</i>
<i>Job Initiation Date</i>	<i>Hourly Rate Charged</i>
<i>Client Org Name</i>	<i>Daily Rate Charged</i>
<i>Client Contact Name</i>	<i>**Contractor ID Assigned to Assignment</i>
<i>Start Date</i>	
<i>End Date</i>	

Note ** indicates a repeating field

Contractor (“temp”). This information is maintained by the Personnel System.

<i>Contractor-ID.</i>	<i>Contractor-Title</i>
<i>Contractor-Name</i>	<i>Contractor- -Start-Date</i>
<i>Contractor-Address</i>	<i>Contractor- -Terminate-Date</i>
<i>Contractor-Sex</i>	<i>Contractor- Business Number</i>
<i>Contractor-Date-of-Birth</i>	
<i>Contractor-Phone-Number.</i>	

Skills –identifies the different types of skills required for temporary administrative staff. Skills are the ability to perform tasks such as being able to use wordprocessing and spreadsheet software, basic accounting and switchboard skills etc. There is a range in pay rates for each Level of a particular skill where the Skill level is rated from 0 through to 5 depending on the years of experience and qualifications attained. Eg. Skill ID = Wordprocessing , Level 0 = never done it, Level 5 = Awarded Advanced Training Certificate in Microsoft WORD. This information is maintained by the Personnel System

<i>Skill ID</i>
<i>Skill Description</i>
<i>**Skill Level</i>
<i>** Skill Level Description</i>
<i>** Maximum Pay Rate</i>
<i>** Minimum Pay Rate</i>

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Contractor Skills identifies the skills of each contractor, their relative skill level and rate they have negotiated to be paid per hour when they use this skill. This enables the management to review the available contractors and assign them to a particular Assignment based on the Type of Assignment.

<i>Contractor ID</i>	<i>**Contractor Skill Level</i>
<i>Contractor Name</i>	<i>**Daily Rate Negotiated</i>
<i>**Skill ID</i>	

Client information is referenced when an assignment is created. This information is maintained by the Client Tracking System.

<i>Client Org Name.</i>	<i>Client-Position</i>
<i>Client-Contact-Name</i>	<i>Client Email Address</i>
<i>Client-Title</i>	<i>Client Phone Number</i>
<i>Client-Address</i>	<i>**Client Notes</i>
<i>Client-Phone-Number.</i>	

Assignment Type Information describes each the 'type' of assignment. It defines the type of skills and the skill level needed by a contractor to be assigned to the job. It also lists the Base Charge Rate typically charged for this type of job that is based on the particular combination of skills required. This information is to be maintained by AMS.

<i>Assignment Type</i>	<i>**Skill ID</i>
<i>Assignment Type Description</i>	<i>**Skill Level</i>
<i>Base Hourly Charge Rate</i>	
<i>Base Daily Charge Rate</i>	

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Assignment

Functional Requirements:

The clients contact the GFA Account Manager when they need temporary staff. The Account Manager assesses the type of assignment from the description provided to him by the client and sets up the Assignment.

The AMS system will provide a list of contractors whose skills satisfy the Assignment Type. The Account Manager reviews the potential contractors and then depending on their availability he selects one or more Contractors from those displayed to be tentatively assigned to the job.

The Account manager then, either verbally or in writing, provides a quotation to the client and the hourly and/or daily charge rate. If the client accepts the quotation the status of the Assignment is changed from *pending* to *confirmed*.

The Account Manager will review the availability of the contractors assigned to the job and make any necessary reassignments.

If the client decides against accepting the quotation then the Assignment is marked as being *cancelled*. Assignments are never deleted because the Account Manager needs to track their success rates of winning contracts they quoted for. When the Assignment is finished, the status is changed to '*completed*' and is '*closed*' when the invoice is paid. Once an Assignment is '*closed*' none of the Assignment details can be modified. Updating the status field only involves changing the Status Value, no other processing logic is involved. The status can be changed at the same time as other details or independently. Cancelling a project only changes the status field no other processing occurs. If any of the assignment data entered does not satisfy validation rules then an error message is displayed.

Screen Requirements

The Account Manager has the ability to:

- Add a New Assignment (Assignment ID is automatically allocated the next number, Client Details are extracted from the Client Tracking System. If a client is not listed on the Client Tracking System, then they are not available to be selected. Their details can be selected at a later date)
- View the assignment details so they can modify the details in an Existing Assignment (except for Assignment ID. If the Client ID is changed then the corresponding contact name is also updated)
- View Details of a Assignment (a message will display if the Assignment ID does not exist)
- Print Details of an Assignment (as viewed)

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Assignment Management System	
File Report System Admin Help Utility	
Assignment Details	
Assignments	Ass Types Calendar Contractors Clients Skills
Assignment ID: <input type="text"/>	Initiation Date: <input type="text"/>
Assignment Name: <input type="text"/>	Start Date: <input type="text"/>
Assignment Status: <input type="text"/>	End Date: <input type="text"/>
	\$ Hourly <input type="text"/>
	\$ Daily <input type="text"/>
Assignment Type: <input type="text"/>	
Client Name: <input type="text"/>	
Contact Name: <input type="text"/>	
OK	
Add	
Modify	
Print	
Error/Confirmations Messages: <input type="text"/>	

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▪ Screen Requirements

The Account Manager has the ability to:

- List all Assignments within a date range.

The screenshot displays the 'Assignment Management System' window. At the top is a title bar with the system name and standard window controls. Below this is a menu bar with 'File', 'Report', 'System Admin', 'Help', and 'Utility'. A sub-menu titled 'Assignment List' is open, showing options: 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The 'Assignments' option is selected. Below the menu is a date range filter with 'Date From:' and 'Date To:' text boxes. The main area contains a table with the following headers: 'ID', 'Assignment Name', 'Client Org Name', and 'Type'. The table has 10 empty rows. To the right of the table are 'OK' and 'Print' buttons. At the bottom of the window is a status bar labeled 'Error/Confirmations Messages:'.

ID	Assignment Name	Client Org Name	Type

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Assign Contractors to Assignment

Functional Requirements:

Once an Assignment has been created and saved on the file. The Account Manager can select to assign or remove contractors for the Assignment. The contractors assigned to an assignment can be viewed at any time by entering either Assignment ID or Assignment Name.

Any Contractors previously assigned to the Assignment are listed. If 'Add' is selected a list of all candidate Contractors and their skills suitable for the selected Assignment Type are displayed (refer *List of Contractors with Skills for Assignment Type*). The Account Manager is able to select one or more candidate Contractors from the List to be assigned to the Assignment.

The Account Manager has the ability to:

- Assign another Consultant to the assignment
- Un-assign an existing consultant
- View List of Contractors already assigned to the Assignment
- Print List of Contractors assigned to the Assignment (as viewed)

The screenshot displays the 'Assignment Management System' interface. At the top is a title bar with the system name and navigation arrows. Below it is a menu bar with 'File', 'Report', 'System Admin', 'Help', and 'Utility'. A sub-menu 'Assign Contractors to Assignment' is highlighted. Below the menu bar are tabs for 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The main content area has a light blue background. It features a form with three input fields: 'Assignment ID', 'Assignment Name', and 'Assignment Type'. Below these fields is a table with two columns: 'Assigned Contractor ID' and 'Contractor Name'. The table has five empty rows. To the right of the table is a vertical scrollbar and a set of buttons: 'OK', 'Add', 'Delete', and 'Print'. At the bottom of the interface is a status bar labeled 'Error/Confirmations Messages:'.

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The screenshot shows a web application titled "Assignment Management System". It features a menu bar with "File", "Report", "System Admin", "Help", and "Utility". Below the menu is a navigation bar with tabs for "Assignments", "Ass Types", "Calendar", "Contractors", "Clients", and "Skills". The main content area has a light blue background and contains a form with two input fields: "Assignment Type" and "Type Description". Below these fields is a table with the following headers: "Contractor ID", "Contractor Name", "Skill ID", and "Skill Level". The table has seven empty rows. To the right of the table is a vertical scrollbar. Below the table are two buttons: "OK" and "Print". At the bottom of the interface is a grey bar labeled "Error/Confirmations Messages:".

Contractor ID	Contractor Name	Skill ID	Skill Level

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Assignment Type

Functional Requirements:

GFA only provide temporary staff for certain types of assignments. The types of assignments are for roles such as eg. Personal Assistant, Receptionist, Accounts Clerk, Telephonist etc. However each type of assignment requires certain skills, eg. A Receptionist needs a higher level of personal and communications skills than someone assigned as the Accounts clerk. A Personal Assistant requires a higher level of organisational skills than does a Receptionist. Each different type of assignment has been classified and the Skills and the Level of skills assigned from the list of Skills maintained by the Personnel System. Rates charged to the clients for the 'temps' are dependent on the Assignment Type and the skill level required. When setting up a new Assignment Type or modifying an existing one, the Account Manager selects the required skills and the level from the *Skills List*.

Screen Requirements

The Account manager has the ability to

- Create a new Assignment type
- Modify the Assignment type details
- Delete an Assignment type
- View/Print details of an Assignment Type
- View/ Print a List all Assignment types

The screenshot displays the 'Assignment Management System' window. At the top is a menu bar with 'File', 'Report', 'System Admin', 'Help', and 'Utility'. Below the menu bar is a tabbed interface with tabs for 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The 'Ass Types' tab is currently selected. The main form area contains the following fields and controls:

- Assignment Type:** A text input field.
- Description:** A text input field.
- Base Hourly Rate:** A text input field.
- Base Daily Rate:** A text input field.
- Skills List:** A table with two columns: 'Skill ID' and 'Skill Level'. The table has 8 rows. To the right of the table is a vertical scrollbar with up and down arrow buttons.
- Buttons:** On the right side of the form, there are five buttons: 'OK', 'Add', 'Modify', 'Delete', and 'Print'.

At the bottom of the window, there is a status bar labeled 'Error/Confirmations Messages:'.

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The screenshot displays the 'Assignment Management System' interface. At the top is a title bar with the system name and window controls. Below it is a menu bar with 'File', 'Report', 'System Admin', 'Help', and 'Utility'. A sub-menu titled 'Assignment Types List' is open, showing tabs for 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The 'Ass Types' tab is selected, revealing a table with two columns: 'Assignment Type' and 'Assignment Description'. The table has 10 empty rows. To the right of the table is a vertical scrollbar with up and down arrows. A 'Print' button is located to the right of the table.

Assignment Type	Assignment Description

Print

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Contractor

Functional Requirements:

Users require the ability to view contractor details by either entering the contractors name and/or Contractor ID (if either does not exist, an error message is presented).

Screen Requirements:

- View Contractor Details (cannot be maintained)

The screenshot shows a web application titled "Assignment Management System". It has a menu bar with "File", "Report", "System Admin", "Help", and "Utility". Below the menu is a "Contractor Details" link. A tabbed interface shows "Assignments", "Ass Types", "Calendar", "Contractors", "Clients", and "Skills". The "Contractors" tab is active, displaying a form for contractor details. The form includes fields for Contractor ID, Contractor Name, Contractor Address (Street, Suburb, State, Postcode/zip), Title, Bus #, Date of Birth, Phone Number, Start Date, Termination Date, and gender (Female/Male). An "OK" button is on the right. An "Error/Confirmations Messages:" area is at the bottom.

Assignment Management System	
File Report System Admin Help Utility	
Contractor Details	
Assignments Ass Types Calendar Contractors Clients Skills	
<div>Contractor ID: <input type="text"/> Title: <input type="text"/></div> <div>Contractor Name <input type="text"/> Bus # <input type="text"/></div> <div>Contractor Address</div> <div>Street <input type="text"/></div> <div>Suburb <input type="text"/></div> <div>State <input type="text"/> Postcode/zip <input type="text"/></div> <div>Date of Birth <input type="text"/> Phone Number <input type="text"/></div> <div>Start Date <input type="text"/> Termination Date <input type="text"/></div> <div>Female <input type="radio"/> Male <input type="radio"/></div> <div>OK</div>	
Error/Confirmations Messages:	

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Contractor Skills

Functional Requirements:

- Users require the ability to maintain Contractor's Skills with the standard error validation and Function Key ability. Users may search by Contractor-ID and/or Contractor Name, if either does not exist, an error message is presented.
-
- Note: the field Mean Daily Rate, cannot be modified as it is not stored, it is are automatically calculated by the system each time and displayed). The 'mean daily rate' is calculated from the current list of skills and their negotiated rate.

Screen Requirements:

- Add a new Skill for a Contractor
- Modify Skill details for a Contractor, after viewing all the details (Contractor ID and Name cannot be modified)
- Delete a Skill for a Contractor, after viewing the all the details
- List the skills for a Contractor

Reporting Requirements:

CONTRACTOR SKILL reports is available to users:

- List the skills for a Contractor Report - printed report with same fields as the online view of contractors skills

The screenshot displays the 'Assignment Management System' interface. At the top is a menu bar with 'File', 'Report', 'System Admin', 'Help', and 'Utility'. Below this is a sub-menu bar with 'Contractor Skills' highlighted. The main content area has tabs for 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The 'Contractors' tab is active, showing a form for Contractor ID, Mean Daily Rate, and Contractor Name. Below this is a table with columns for Skill ID, Contractor Skill Level, and Daily Rate Negotiated. To the right of the table are buttons for 'Add', 'Modify', 'Delete', and 'Print'. At the bottom, there is a status bar with 'Error/Confirmations Messages:'.

Skill ID:	Contractor Skill Level:	Daily Rate Negotiated

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Skill

Functional Requirements:

Users require the ability to view a list of Skills and be able to select one to view the Skill details.

Screen Requirements:

- List Skills(online or printed)
- View Skill Details.

The screenshot shows the 'Assignment Management System' interface. The top menu bar includes 'File', 'Report', 'System Admin', 'Help', and 'Utility'. Below the menu, there are tabs for 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The 'Skills' tab is selected, displaying a table with two columns: 'Skill ID' and 'Skill Description'. The table has 10 empty rows. To the right of the table are 'Ok' and 'Print' buttons. A vertical scrollbar is visible on the right side of the table.

The screenshot shows the 'Assignment Management System' interface for the 'Skills Details' screen. The top menu bar includes 'File', 'Report', 'System Admin', 'Help', and 'Utility'. Below the menu, there are tabs for 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The 'Skills' tab is selected, displaying a form for skill details. The form includes fields for 'Skill ID' and 'Skill Description'. Below these fields is a table with four columns: 'Skill Levels', 'Level Description', 'Maximum Pay Rate', and 'Minimum Pay Rate'. The table has 10 empty rows. To the right of the table are 'OK' and 'Print' buttons. A vertical scrollbar is visible on the right side of the table. At the bottom of the screen, there is a status bar labeled 'Error/Confirmations Messages:'.

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Client

Functional Requirements:

Users require the ability to List Clients, ie.the Client Organisation Name and the Client Contact Name.

Screen Requirements:

- List Clients from the Personnel System

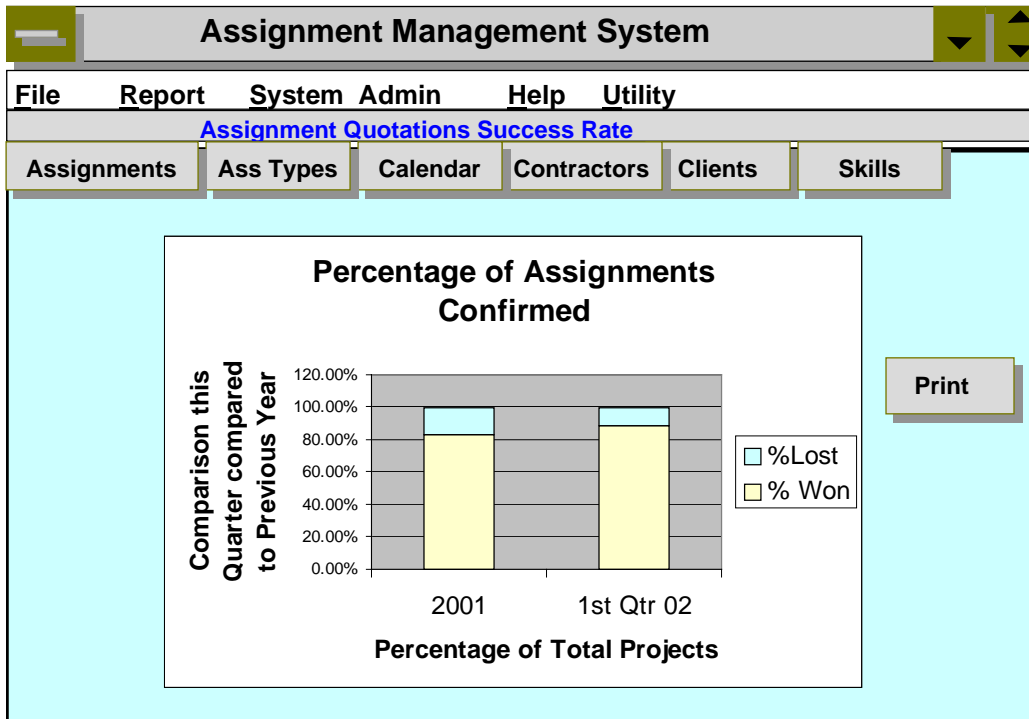
The screenshot displays the 'Assignment Management System' interface. At the top is a title bar with the system name and window controls. Below it is a menu bar with 'File', 'Report', 'System Admin', 'Help', and 'Utility'. A submenu is open under 'System Admin', showing 'Clients List' (highlighted in blue) and other options. Below the menu bar is a tabbed interface with tabs for 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The 'Clients' tab is selected, showing a table with two columns: 'Client Organisation Name' and 'Contact Name'. The table has 10 empty rows. To the right of the table is an 'OK' button. The table has a vertical scrollbar on its right side.

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Reporting Requirements:

- Assignment Quotation Success Rate Statistics report showing the percentage of Assignments won by quarter for the current year compared to the previous financial year.



Student Question Sheet

EXAM 2001

PART 3 A– CASE STUDY QUESTIONS

- 1) Based upon the available information:
 - List all data function types
 - List all transactional function types

Note: Assume the Value Adjustment factor to be 1.00

Answers must include:

- Function Name (transactional or data function type)
- Number of DETs
- Number of RETs or FTRs
- Type (EI, EO, EQ, ILF or EIF)
- Complexity (either, Low, Average or High)
- Unadjusted Function points for a function

- 2) Based upon the identified transactional function types and data function types, calculate the adjusted Development Function Points for AMS.
- 3) Supply the Development Function Point formula used to calculate the adjusted Development Function Points.

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PART 3 B– CASE STUDY QUESTIONS

- 4) It is now 6 months since you first counted AMS. AMS was successfully implemented and the Account Manager is reasonably pleased BUT would like the following changes to the implemented version of AMS:
- Introduce a report, which lists for each contractor the total number of assignments for each Assignment type within a date range. It also calculates the time the contractor has worked for GFA. The report is displayed on the screen (Figure 1) or can be printed (Figure 2).
 - Prior to deleting an Assignment Type record, the system is required to check if the Type has been allocated to an Assignment, and produce a warning message saying it cannot be deleted.
 - For the screen *List Contractors with Skills for Assignment Type* add an extra field “Star Rating” against each consultant. This “star rating” is calculated by the system based on the combination of the contractor’s skills and their skill levels that are to be used for this particular Assignment Type and how many assignments they have been assigned to and the assignment has been marked as completed.
 - The AMS system is required to have a function that allows them to put a value in a new field (client extension phone number) on the Contractors file so it can be viewed on the *Contractors Details Screen*. This is the contractors direct number for their current placement. If the users enter a non-numeric number an error message displays.
 - The recent downturn in business has caused the Account Manager to become depressed whenever he sees the *Assignment Quotation Success Rate Report* and he has asked it to be deleted from the system.

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The screenshot displays the 'Assignment Management System' interface. At the top is a menu bar with 'File', 'Report', 'System Admin', 'Help', and 'Utility'. Below the menu bar is a sub-header 'Assignment Types by Contractor'. A tabbed interface shows 'Assignments', 'Ass Types', 'Calendar', 'Contractors', 'Clients', and 'Skills'. The 'Contractors' tab is active, showing a table with columns for 'Contractor ID', 'Contractor Name', 'Time with GFA', and 'Total by Type'. The table is currently empty. A 'Print' button is visible next to the date range input fields.

Contractor ID	Contractor Name	Time with GFA	Total by Type

Figure 1

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Assignment Types by Contractor			Date dd/mm/yy
Date From	<input type="text"/>	Date To	<input type="text"/>
Contractor ID	Contractor Name	Assignment Type	
<input type="text"/>	<input type="text"/>	<input type="text"/>	
Time With GFA	<input type="text"/>	<input type="text"/>	
		<input type="text"/>	
		Total	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	
Time with GFA	<input type="text"/>	<input type="text"/>	
		<input type="text"/>	
		Total	<input type="text"/>

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Figure 2

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Based upon the available information:

- List all data function types
- List all transactional function types

Note: Assume the Value Adjustment factor to be 1.10

Answers must include:

- Function Name (transactional or data function type)
- Enhancement Type (Add, Change or Delete)
- Type (EI, EO, EQ, ILF or EIF)
- Complexity Before Enhancement (Low, Average or High)
- Complexity After Enhancement (Low, Average or High)
- Score Before Enhancement (deleted and changed functions)
- Score After Enhancement (added and changed functions)

- 5) Based upon the identified transactional function types and data function types, calculate the total unadjusted Function Points added by the Assignment.
- 6) Based upon the identified transactional function types and data function types, calculate the total unadjusted Function Points Changed (Before and After) by the Assignment.
- 7) Based upon the identified transactional function types and data function types, calculate the total unadjusted Function Points Deleted by the Assignment.
- 8) Based upon the identified transactional function types and data function types, calculate the adjusted Enhancement Function Points for AMS.
- 9) Supply the Enhancement Function Point formula used to calculate the adjusted Enhancement Function Points.