

IFPUG 4.1 PRACTICE CERTIFICATION EXAM
Student Question Sheet

EXAM 2001
PART 2 – IMPLEMENTATION RULES
MULTIPLE CHOICE

Version 1.0

INSTRUCTIONS

- Circle the single correct answer on the attached Student Answer Sheet for Part 2
- Answer all questions.
- DO NOT WRITE YOUR ANSWER ON THIS FORM

1. The Unadjusted Function Point value of an ILF with 5 RETs and 19 DETs is:

- a. 5
- b. 7
- c. 10
- d. None of the above

2. The Sales Application and Marketing Application both reference the Customer File, which is maintained by Customer Information System. The Sales Application references Customer Name, Customer Address and Customer Account Type. The Marketing Application references Customer Name, Customer Address, Current Project Id, Customer Referral Type and Customer Rating. Note, the Marketing Application's users require the Customer Address broken down for analysis and need it as:

- Street Number
- Street Name
- Suburb
- City
- State
- Postcode

State the number of DETs attributable to the Customer File from the perspective of both the Sales Application and the Marketing Application:

- a. Both Applications count the Customer File the same way ie. 11 DETs
- b. Sales Application- 11 DETs and Marketing Application - 11 DETs
- c. Sales Application- 3 DETs and Marketing Application - 10 DETs
- d. Sales Application- 10 DETs and Marketing Application - 3 DETs

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3. If you were paid \$1.00 for every Function Point you counted, and you had 3 average EIFs, 2 high ILFs, 4 low EQs and 2 high EO, how much money would you earn?:
- a. \$77.00
 - b. \$61.00
 - c. \$86.00
 - d. None of the above
4. The Report Employee Charge-Outs displays as a split screen ie it provides a table of the dates worked on each project over the last year and the total number of charged days for the Employee and a bar-graph comparing the total earned by the employee to that of other employees of similar skill level. How many EOs and EQs would be counted?
- a. 1 EO
 - b. 2 EOs
 - c. 2 EQs
 - d. 1 EO and 1 EQ
 - e. None of the above
5. Which would calculate to give the lowest Adjusted Function Point result:
- a. An Unadjusted Function Point count of 180 with a TDI of 35
 - b. An Unadjusted Function Point count of 170 with a TDI of 40
 - c. An Unadjusted Function Point count of 190 with a TDI of 32
 - d. An Unadjusted Function Point count of 290 where the TDI is yet to be determined
6. The Customer Information System is planning an enhancement. An existing EO, which references 1 FTR and displays 4 DETs is now required to read an additional FTR and display 5 DETs. What is the unadjusted Function point count for the EO after the enhancement
- a. 3
 - b. 4
 - c. 6
 - d. None of the above
7. What is the net increase in unadjusted Function Points for the Application after the enhancement?:
- a. 0
 - b. 1
 - c. 2
 - d. None of the above

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8. What is the Adjusted Function Point for the following application:
2 low complexity External Inputs, 3 average complexity External Inquiries, 1 high complexity External Inquiry, 3 high complexity External Outputs, 1 low complexity External Inquiry, 1 average complexity External Input, 1 high complexity External Input, 3 low complexity Internal Logical Files and the following ratings for the General Systems Characteristics:

Data Communications	3	On-line Update	4
Distributed Processing	2	Complex Processing	3
Performance	2	Reusability	3
Heavily Used Configuration	3	Installation Ease	2
Transaction Rates	5	Operational Ease	2
On-line Data Entry	5	Multiple Sites	1
Design for End-user Efficiency	5	Facilitate Change	3

- a. 82.16
b. 83.45
c. 89
d. 85.32
9. The 'Commission' application now provides sales reporting to users on a weekly basis. The sales representatives rather than ringing the sales office to inquire how much they earned can now make an on-line inquiry on their commission earned for that week. The on-line display contains sales and commission earned (in salesperson order) and total sales for their division. How is this on-line inquiry to be counted? :
- a. As either an External Output or External Inquiry
b. External Output
c. External Inquiry
d. None of the above
10. The sales staff are required on a daily basis to enter each sale that attracts commission. They must enter their Employee Id, the customer's name, the Product Id and the value of the sale. As they enter each sale the commission is calculated and displayed for their interest prior to saving the sales record. Assume the screen supports error/warning messaging and 'hot-keys' to specify actions. What type of elementary process is described here? :
- a. External Output
b. External Input
c. External Output and an External Input
d. Either an External Output or External Inquiry

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11. Based upon question 10, what criteria did you use to arrive at your answer? :

- a.* the data entry and update of an ILF makes it an EI but the calculated Commission value displayed also makes it an EO
- b.* The primary intent of the elementary process
- c.* Calculated totals are displayed and therefore the elementary process is an External Output
- d.* Not enough DETs cross the boundary to determine the type of elementary process

12. Based upon question 10, determine the number of DETs to be counted:

- a.* 4
- b.* 5
- c.* 6
- d.* 7

13. The Payroll Application is required to print onto Government Issued Tax Certificates so each Employee can submit one as proof of tax prepaid on earnings. The numbers of the pre-printed Certificates are stored on a reference file when they are received. At the end of the financial year all the taxation information is retrieved from each employee payroll record and printed on the certificate. The certificate number is read from the reference file and recorded against the Employee Record. How is the printing of the tax certificate to be counted? :

- a.* As either an External Output or External Inquiry
- b.* External Output
- c.* External Input
- d.* An External Input and External Output

14. Based upon question 13, How is the recording of the Certificate number DET on the Employee record dealt with? :

- a.* The elementary process does not count the Certificate Number DET
- b.* Counted as a DET on the External Input
- c.* Counted as a DET on the External Output
- d.* Counted as a DET on the External Inquiry

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15. At the end of each financial year managers are asked to review the salary of their staff who have not had a pay rise within the last year. The managers can identify potential candidates using an online transaction that displays a list of employees names whose current hourly rate is equal to or less than that for the previous financial year end. How is this list of employees' names to be counted? :

- a.* As an External Output
- b.* As an External Inquiry as no calculated fields cross the boundary
- c.* As either an External Output or External Inquiry
- d.* None of the above

16. An application provides users with the ability to create the Sales Record (Date, Division-Id, Line-Item, Sales-Value, Employee-ID) on the Sales ILF, which are entered on-line. If the 'sales-value' entered is not numeric an error message is displayed. The system calculates the amount of sales tax payable for the sale and stores it on the Sales ILF. At the completion of the data entry when the User Selects the OK button the system responds with confirmation message. In order to provide a user-friendly system, the application allows users to commit the data using one of three possible keys (enter key, PF3 and the right-hand mouse button). How many DETs are counted on the EI?

- a.* 6
- b.* 7
- c.* 8
- d.* None of the above

17. Users currently have the ability to create, modify and delete individual customer details on-line. Users have specified the need for a 'global' delete for all dormant customers ie, those not accessed for over 2 years. The User asks for an on-line function that they could select to trigger the global deletion. How would new 'global delete' be counted?

- a.* Not counted since it does not have unique processing logic from the Elementary process "delete of a single record"
- b.* Counted as another unique EI since its processing logic and control DET is different to Elementary process "delete of a single record"
- c.* Count as a DET on the EI counted for the delete on a single record
- d.* None of the above

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18. After being delivered the above 'global delete' function the User changed their mind and asked the developer to automate the process so that at the stroke of midnight the system clock would trigger the delete process. How is the new automatically triggered 'global delete' counted.

- a. Automated 'global delete' cannot be counted as an EI since there are no DETs crossing the boundary
- b. Automated 'global delete' is an External Input with a single DET
- c. Automated 'global delete' is a multiple DET External Input
- d. The count has not changed since this is an implementation issue

19. What is the TDI of the following General Systems Characteristics:

Data Communications	3	On-line Update	4
Distributed Processing	2	Complex Processing	3
Performance	2	Reusability	3
Heavily Used Configuration	3	Installation Ease	2
Transaction Rates	5	Operational Ease	2
On-line Data Entry	5	Multiple Sites	4
Design for End-user Efficiency	1	Facilitate Change	3

- a. 41
- b. 1.07
- c. 42
- d. None of the above

20. What is the Adjusted Function Point for the functions below using the Value Adjustment Factor derived from Question 19 (round up to nearest integer):

An External Input with 16 DETs and 1 FTR, an External Input with 15 DETs and 2 FTR, an External Input with 5 DETs and 3 FTR, an External Input with 4 DETs and 2 FTR

- a. 14
- b. 17
- c. 19
- d. None of the above

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21. If the following transactions were added to the above application, what would be the sum total Unadjusted Function points:

An External Input with 17 DETs and 2 FTR, an External Inquiry with 2 DETs and 2 FTR on its Input side and 16 DETs on its output side (of the 16 DETs, 1 is supplied by the input side) and, an External Output with 17 DETs and 2 FTRs

- a. 27
- b. 29
- c. 32
- d. None of the above

22. What is the Adjusted Function Point count for the following application: 15 low complexity External Inputs, 31 average complexity External Inputs, 9 high complexity External Inputs, 11 high complexity External Outputs, 7 low complexity External Inquiry, 4 average complexity External Inquiry, 12 high complexity External Inquiry, 15 low complexity Internal Logical Files and the following GSC Ratings:

Data Communications	3	On-line Update	4
Distributed Processing	3	Complex Processing	4
Performance	3	Reusability	3
Heavily Used Configuration	4	Installation Ease	3
Transaction Rates	4	Operational Ease	2
On-line Data Entry	5	Multiple Sites	1
Design for End-user Efficiency	4	Facilitate Change	2

- a. 514
- b. 560.26
- c. 566.4
- d. 565.4

23. Determine the TDI for the following equations

Unadjusted FP Count	TDI	Adjusted FP Count
200		270
200		230
100		115
10		10

- a. 70, 50, 50 and 10 Respectively
- b. 70, 50, 25 and 35 Respectively
- c. 70, 50, 50 and 35 Respectively
- d. None of the above

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24. When a Hotel application, records a new client the receptionist is required to ask the customer their preferences (ie. Non-smoking room, room position, type of morning news paper, payment method). In most cases the information is collected from the client at book in or check-in time, if the client says that they do not have any preferences then the receptionist does not select the Preferences button on the Create Customer screen to display the preference entry screen.

How many elementary processes are described here for the entry of the New Client Details? :

- a. One - Create New Client with an option to include preferences*
- b. Two - Create New Client and Input Client Preferences*
- c. One – View Client Details*
- d. None of the above*

25. Based upon question 24, State the reason for your answer:

- a. If two input processes are always sequential and dependent, then there is one elementary process and therefore one function.*
- b. Both elementary processes are user identifiable and therefore considered elementary processes*
- c. The preference details are considered separate from the user perspective therefore there are two elementary processes*
- d. A decision cannot be reached as the business work flow is not understood*

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26. The user requires the ability to:

Enter and store client room service charges

- Have the application calculate if tax is payable and the tax inclusive price
- Generate an error message and highlight the incorrect field so that the error may be corrected online

The following screen is used to record Room Service charges. Determine the type of elementary process associated with this screen:

‘Client Room Service Entry Screen’				‘Date: 99/99/99’
Client Name: <u> John Smith </u>				
Room Number: 716 __ Room Rate: \$ 340.00 __				
<u>Date of Service</u>	<u>Type</u>	<u>Price</u>	<u>Inc Tax</u>	<u>Comments</u>
01/05/2002	Laundry	\$ 23.40	\$ 27.70	Returned not ironed
01/05/2002	Breakfast	\$ 30.00	\$ 30.00	
F1=Help F2 Add Item F6=Scroll Up F7=Scroll Down F9=Save				

- a. External Inquiry
- b. External Output
- c. External Input
- d. Combination of External Input and External Output

27. Based upon question 26, state the reason for your answer:

- a. External Inquiry since the primary intent is to display room charge details
- b. External Output since derived data is calculated and presented to the user
- c. External Input since the primary intent is to maintain an ILF
- e. Combination EI and EO since there is a user requirement to input and retrieve data and to calculate and display derived data

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28. Based upon question 26, Determine the number of DETs counted for the Elementary process record client room charges:

- a. 12
- b. 10
- c. 9
- d. 8

29. Based upon question 26, The number and type of comments is used by hotel management to determine if they should offer the client a discount or some compensation if several things go wrong during their stay. When more than three comments are entered on the clients room service charges record in a single stay a status flag is automatically updated on the Managers Performance Record file with the customers name and room number. Management use this information to single out clients for special treatment. How are the DETs updated on the Managers Performance Record file counted

- a. All DETs updated on an ILF during the elementary process are counted
- b. DETs not counted since they did not cross the boundary
- c. Cannot determine
- d. Yes, with the understanding that it is a user requirement

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30. The following information is produced for every client at the end of the their stay in order to evaluate their utilisation of the Hotel services and to assist marketing in targeting them in the next campaign. A client profile type is generated from looking at their preferences and their service utilisation.

‘Client Stay Statistics’		‘Date: 99/99/99’	
Hotel Name : HYDE Park Motor Inn			
Client Name: <u>John Smith</u>			
Date from : 30/4/2002			
Date to : 10/5/2002			
Room Number: 716		Room Rate: \$ 340.00	
Manager on Day Duty : David Fythe			
<u>Type of Service</u>	<u>Number</u>	<u>Total Price</u>	<u>Number Comments</u>
Laundry	5	\$ 99.70	5
Breakfast	10	\$ 300.00	-
Minibar	5	\$ 101.00	1
<u>TOTALS</u>	<u>20</u>	<u>\$ 500.70</u>	<u>6</u>
<u>PROFILE TYPE</u>	<u>A+</u>		

Determine the type of transaction this display represents:

- a. External Output
- b. External Inquiry
- c. External Input
- d. All of the above

31. Based upon question 30, state the reason for your answer:

- a. There are no error or warning messages present therefore it cannot be an EI
- b. The report had to extract the details from an ILF so it is an EQ
- c. The report contains derived data and calculated totals and its primary intent is to present information to the user so it is an EO
- d. Combinations of input and output transactions cannot be determined

32. Based upon question 30, state the complexity of the elementary process (assume 4 FTRs):

- a. Low
- b. Average
- c. High
- d. Cannot be determined

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33. The Accounts Department receives a tape containing the Invoice transaction file from the Sales Division on a daily basis and it is processed overnight as a batch job. The transaction file contains details of Invoices for the following processing to occur in the Accounts Receivable Application - add a new invoice, change existing invoice details, cancel invoice, reverse an invoice, approve invoice for posting to General Ledger and delete Invoice. Each record on the invoice transaction file is prefixed with a 'transaction type' indicator, ie A (add invoice details), M (change invoice details) and C (cancel invoice details), R (reverse invoice) and P (post invoice) and D (Delete Invoice). Each transaction type is involved in different processing logic. How many Elementary processes are counted for the transaction file in the Accounts Receivable application?

- a. One EI since it is a single batch load to maintain data inside the boundary
- b. Three EIs - ie one for the create, one for the modify, post, and reverse and one for the cancel and delete transactions
- c. One EI for each transaction type identified to have unique processing logic and/or has unique DETs and/or FTRs
- d. None of the above - the Transaction File is only read by the Accounts Receivable Application, therefore it is an EIF

34. How do we count the 'transaction type' indicator in Question 30?

- a. The transaction type is a technical record header and as such it is ignored
- b. The transaction type is counted as a control DET on each EI identified
- c. The transaction type is counted as six DETs on the one EI we counted
- d. None of the above

35. The User has requested that if any of the transactions in Question 33 fail while being processed by the Accounts Receivable application they are stored in a Suspended Transaction file. The user has an on-line function that they can use to fix the erroneous transaction records. Once fixed the corrected transactions are then included in the next batch run? How do we count the Suspended Transaction File?

- a. EO because it is created as an output during processing of the EI
- b. ILF because it is a user recognisable group of data and requested to be maintained by the User by transactions within the application boundary
- c. EIF because it is read during the processing of the batch job
- d. It is not counted since it is a technical implementation of a function

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36. Based upon question 33, how would we count the Transaction file that is created by the Sales Application and sent to Accounts Receivable, from the Sales Applications perspective?

- a.* One EQ since there is no derived data
- b.* One External Interface File since it is a File of records sent Externally via a batch Interface and only Read by the Accounts Receivable application
- c.* It can only ever be a single EO since all transactions are written to a single tape file in a batch run
- d.* Not enough information is provided to make a definite decision

37. Based upon question 33, the Accounts Receivable application updates the Invoice details read from the transaction file on its Invoice ILF. Users are able to browse a List of the Header Summary Details of the invoices. The list at the bottom displays the total number of Invoices currently in the file. From this List screen the users have the option to select a single Invoice to view all the details stored. Determine the number and type(s) of elementary process(es) represented here:

- a.* Two Elementary processes - the List Invoice Header Details = EO and the View Invoice Details = EQ
- b.* There is only a single elementary process (EO) since the view Invoice Details is sequentially selected from the List Header Summary Details and they both have the primary intent to display Invoice details
- c.* Two Elementary processes - the List Invoice Header Details = EO and the View Invoice Details = EO
- d.* None of the above

38. Based upon question 37, state the reason for your answer for counting the List Invoice Header Details:

- a.* EO –the primary intent of the List is to present data to the user and the data presented contains a calculated total field
- b.* EI - since the primary intent is to display details without deriving data
- c.* EO - Combined with the View Details function since there is a user requirement to display stored Invoice data and the Totals field is calculated
- d.* None of the above

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39. In order for management to recognise and award sales staff for achievement, there is a requirement to produce a 'top 5' list of salespeople for the year. The Personnel Application reads the Invoice file from the Accounts Receivable Application and compares the total sales achieved by each sales staff member then ranks them in order. The report can be selected to be printed at any time in the year gives the top 5 as of the current sales on the close of business the previous day:

'Top 5 Salespeople for Quarter Ending' = 'Date: 99/99/99'

<u>Order</u>	<u>Employee Name</u>		
<i>1st</i>	<i>Gueverra</i>	<i>Nelson</i>	<i>F</i>
<i>2nd</i>	<i>Stewart</i>	<i>Alex</i>	<i>A</i>
<i>3rd</i>	<i>Simms</i>	<i>Colin</i>	<i>J</i>
<i>4th</i>	<i>Chalmers</i>	<i>Sandra</i>	<i>R</i>
<i>5th</i>	<i>Price</i>	<i>Stephen</i>	<i>P</i>

Determine the type of transaction the list represents?

- a. External Output
- b. External Inquiry
- c. External Input
- d. None of the above

40. Based upon question 39, state the number of DETs applicable to the elementary process:

- a. 1
- b. 2
- c. 3
- d. 4

41. Based upon question 39, the 'top 5 salespeople' list is produced at close of business quarterly. Does the elementary process count a DET for the automatic triggering of the list?

- a. No, because it is generated internally by the system clock and as such does not cross the boundary
- b. No, although it does cross the boundary, it is technical requirement and should not be counted
- c. Yes, it is a control DET that controls the processing of the elementary process
- d. None of the above

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42. The 'top 5 Sales people list ' can also be selected online to print the list for a particular quarter. The User can select which quarter and the printer for the report to go to (ie. Remote Printer 1 or Printer 2) Is the Printer selection counted as a DET for the Elementary Process?

- a.* No, it is technical field and not counted
- b.* Yes, it is a User recognisable control DET to control what, when or how the data is to be processed
- c.* Need more information before you can decide
- d.* None of the above

43. The 'top 5 Sales people list ' reads the Invoice Value and the Salesman ID from the Invoice file in the Accounts Receivable system. The Accounts Receivable system views the Invoice File as an ILF with 3 RETs and 20 DETs. How many RETs and DETs would be counted for the Invoice File EIF referenced by the Personnel System

- a.* 3 RETS and 20 DETS ie. same as the Invoice System since it is the same logical data group
- b.* 1 RET and 2 DETs
- c.* 3 RETs and 1 DET
- d.* None of the above

44. Nearing the end of each quarter every salesperson selects to print the 'top 5 Sales people list' every day to see if they are winning. All this activity on the Invoice File is degrading the performance of the Accounts Receivable Application. The users have requested that something be done. It was decided to take an exact copy of the latest version of the Invoice File over to the Personnel System when the overnight update run is completed. This way the users will be accessing a dormant copy with the latest Invoice data rather than the 'live' file. How is the Invoice File counted now for the Personnel Application?

- a.* ILF since the copy is maintaining the file
- b.* EIF – count has not changed since the copying of the file is a performance consideration and is transparent to the users. It is not user maintainable by users of the Personnel application it is still only read.
- c.* ILF and an EI for the copy transaction
- d.* None of the above

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45. The 'Personnel system has more than 30% of its data entry transactions which are interactive. How will this feature be scored when rating the GSCs

- a. Contributes 5 to the TDI
- b. Contributes 4 to the TDI
- c. It is not considered in the GSCs
- d. None of the above

46. The 'Personnel system was designed with as few screens as possible to accomplish a business function. Is this considered in FPA? If so where?

- a. Assessed in the GSC – Operational Ease
- b. Assessed in the GSC – Online Data Entry
- c. Assessed in the GSC – End User Efficiency
- d. None of the above

47. The 'Personnel system has a user requirement for the provision of automatic start-up, back-up and recovery process, highly automated recovery procedures and protection against data loss. Are these considered in FPA? If so where?

- a. Assessed in the GSC – Online Update
- b. Assessed in the GSC – Operational Ease
- c. A and B
- d. None of the above

48. When the 'Personnel system' was redeveloped. The project was required to convert the previous Employee file to the new Employee File. All other files did not require conversion. The user also asked to be provided with conversion and installation guides. How should this requirement be counted if at all?

- a. Count the previous Employee File as an EI in the project count
- b. Count the new Employee File as an ILF in the project count and the application count
- c. Contributes 2 to the TDI
- d. All of the above

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49. When the 'Personnel system' was enhanced the Users requested that the Staffing Report, (counted as a low EO)that lists the numbers of staff in each division be also provided to them in a graphical format. They wanted the staffing data displayed as a pie-chart so they can easily see the percentage contribution from each division to the overall company staff. The following possibilities for counting this new report were proposed by the counters, which one is correct?

- a. Do not count the new report as a unique Elementary process since it is the same data presented in a different format.
- b. Do not count the new report instead add the extra DETs to the original report and increase the complexity rating from Low to Average
- c. Count the new report as an EO since there is unique processing logic that is different to that required in the existing report.
- d. None of the above

50. The personnel system has a report that lists all employees who are current contributors to the company's superannuation scheme. It is has been counted correctly as a low EQ with 5 DETs and 3 FTRs. The Users have put in a change request to include an extra DET that will Total the number of employees and present the Total at the end of the display. The following possibilities for counting this change in the Enhancement project count were proposed by the counters, which one is correct?

- a. Count an EQ of low complexity
- b. Count an EO of average complexity
- c. Count an EQ of average complexity
- d. Do not include it since the extra DET had no impact on complexity