

**AUDITING 2602:
MEMORANDUM**

HOMEWORK 3

APPLICATION CONTROLS - Jackson Chapter 8

QUESTION 1 - Identify if General or Application Control – (Assignment 3 -2011) 16 Marks

1.2 Since the establishment of Cheery Holidays Limited, management has implemented the following general and application controls:

1. The booking clerks, who accept telephonic bookings from members, are frequently sent on computer training courses.
2. As Cheery Holidays Limited has a strict policy of availability at a 24 hour toll free telephone number, with booking clerks on duty to enter bookings on a centralised processing system, the company has installed uninterrupted power supply equipment.
3. On requesting a particular booking, the member quotes his membership number. The system should reject membership numbers which are not included in the master file.
4. The booking clerk confirms the details of the booking by reading the information, which has been entered, back to the member.
5. Booking clerks are forbidden to eat or drink at their workstations.
6. The management of Cheery Holidays Limited has implemented a sound management control system in which adherence to controls is regarded as very important.
7. The booking clerks are denied access to the amendment module of the members master file.
8. The booking clerks' workstations and computers are all housed in a separate room, which can only be entered with a swipe card.
9. Cheery Holidays Limited maintains three generations of backup data.
10. The printing of financial reports which contain sensitive information such as the number of new members registered and the number of bookings for each holiday resort affiliated to Cheery Holidays Limited, is restricted to the printer in the financial director's office.

REQUIRED

Indicate whether each of the ten (10) controls described in the question is a general or an application control. Furthermore; describe on (1) possible risk which is addressed by each of the ten (10) controls.

Present your answer as follows:

Identify whether it is a general or an application control (½ mark each)	Risk addressed (1 mark each)
1.	1.

QUESTION 1: ANSWER

IDENTIFY WHETHER A GENERAL OR APPLICATION CONTROL (1/2 Marks each)	RISK ADDRESSED (1 mark each)
1. General control	1. Telephonic bookings may be lost or inaccurately entered due to untrained booking clerks.
2. General control	2. Booking information may be lost due to interrupted power supply.
3. Application control	3. Bookings may be accepted from non- members.
4. Application control	3. Inaccurate or incomplete booking details may be recorded and therefore result in dissatisfied members.
5. General control	4. The safety of computer facilities may be compromised and therefore result in booking information being lost or computer equipment being damaged.
6. General control	5. If management fails to lead by example staff may not adhere to controls.
7. Application control	6. Booking clerks may be able to load or delete unauthorised information on the members' master file.
8. General control	7. Booking information may be changed or deleted by unauthorised people if access is not controlled.
9. General control	9. Operations may be disrupted if information and systems are not adequately backed up.
10. Application control	10. Sensitive information may be used by unauthorised people.

QUESTION 2 Programmed Application Controls - (Assignment 2: 2009 & 3:2011)

You are the auditor of XYZ (Pty) Limited. The company makes use of a Batch input system to process the transactions in an integrated accounting. During the performance of walk through tests on the trade receivables, inventory and sales application program for the year the following errors were detected:

1. On one invoice the VAT number of a client of the company was not entered into the system.
2. The price of an item on one of the invoices was incorrectly entered into the system as R 1 599.95. The maximum price of any item sold by XYZ (Pty) Limited is R 1 000.00

3. On one invoice, the number of items purchased was incorrectly entered as 21. The minimum number of a specific item that may be purchased is one and the maximum number is 20.
4. The customer account number field on one of the sales invoices contained alphabetic characters instead of only numeric characters.
5. On two sales invoices the customer account number contained six instead of seven digits.
6. One sales invoice was entered onto the system which caused the client's pre-authorised credit limit to be exceeded.
7. Five sales invoices were never entered into the system
8. Three sales invoices were entered twice into the system.

REQUIRED:

Describe for the above, a programmed (automated) application control which can prevent errors

ANSWER: QUESTION 2

Programed application controls

1. **Mandatory field**/misusing data checks, ie keying in will not continue until the client's value added tax number has been entered.
2. **A limit test** will determine whether data falls within certain limits.
3. **A range check** will detect when the quantity field falls outside the allowable limits, ie one to 20. "
4. **An alphanumeric condition** test can be used for characters that should be either alphabetic or numeric.
The presence of an alphabetic character in the account number field will display a fault message.
5. **A field-size-test** is used when the size of the field is pre-specified. Any other number of digits other than seven digits will display a fault message.
6. **A data approval check** can test input against a preset condition, for example the sale may not exceed the approved credit limit.
7. **Sequence tests** can be performed after sorting of the input_transactions to determine if they are in the required sequence and to detect gaps in the sequence of the invoice numbers.

Batch control tests can be performed by grouping invoices into batches and computing control totals as a by-product of data preparation. Control totals are used to detect non-processing of invoices by comparing totals with equivalent totals prepared by the user during data preparation, or with totals computed during subsequent computer input.
8. **Sequence tests** can be performed after sorting of the input transactions to ensure that they are in the required sequence and to detect-duplications in the sequence of the invoice numbers.

Batch control tests can be performed by grouping invoices into batches and computing control totals as a by-product of data preparation. Control totals are used to detect errors by comparing totals with equivalent totals prepared by the user during data preparation, or with totals computed during subsequent computer input.
9. **Reconciliation of** related subsystem balances. Financial totals from one subsystem can be compared with totals from another subsystem where the processing activity is equivalent. The difference between the amounts would indicate an error.
- 10 **A check digit** (a redundant character attached to the end of a number) can be included in the client's account number which will detect all types of data coding errors.
11. **A verification check** will validate the account number keyed in against the master file.

QUESTION 3 : Application controls: (Assignment 3: 2010)

XYZ (Pty) Limited is a wholesale company in the process of converting from a manual system to a fully computerized accounting system. The following is a list of requirements the company's tax invoices adhere to:

1. VAT numbers of all clients of the company should be shown on the invoices.
2. Sales invoices should be issued only to clients with a valid account number.
3. Product item codes consist of five alphabetical characters.
4. The minimum number of a specific item that may be purchased is one and the maximum number is 20.
5. The maximum price of any item XYZ (Pty) Limited wants to sell is R 50 .000
6. Invoices should be issued in number sequences.

REQUIRED:

- 3.1 Define the term *Application Controls*. (2)
- 3.2 Describe program checks that will ensure compliance with the above requirements regarding accuracy and completeness of on-line input of the invoice data. Present your answer as follows:

Program Check (1/2 mark each)	Description of program check (1 mark each)
1.....	1.....

ANSWER: QUESTION 3**3.1**

Application controls are controls over input, processing and output of financial information relating to a specific application, to ensure that such information is valid, accurate, and complete.

(2x1=2)

3.2 Program checks relating to the accuracy and completeness of input of the invoice data**(10)**

1. Mandatory field/missing data checks	1. Keying in of information will not continue until the client's value added tax number has been entered.
2. A check digit	2. A redundant character attached to the end of a number can be included in the client's account number which will detect all types of data coding errors.
OR A field size check	This check will detect when the item product code field does not conform to five characters.
4. Range checks	4. This check will detect when the quantity field falls outside the allowable limits (1 to 20).
5. A limit check	5. This check will detect when the price field exceeds a single limit (R50,00).
6. Sequence checks	6. This check will detect gaps or duplications in the invoice number sequence.

QUESTION 4: APPLICATION CONTROLS: (Assignment 3 - 2010)

You are the auditor of Z2 (Pty) Limited.. During the planning phase of the audit, the following internal control measures were explained to you:

The door to the office where the printers are situated is equipped with a numerical keypad mechanism which locks/unlocks the door once a valid access code is entered. Each printer is equipped with a numerical keypad mechanism. These printers are used to print salary printouts.

There are no output handling procedures at Z2(Pty) Limited to ensure that output is only distributed or displayed to authorized persons.

REQUIRED:

4.1 Describe **4 additional programmed** output controls for Z2 (pty) Limited's salary printouts.

(6)

4.2 Suggest **5 manual output** handling procedures to the management of Z2 (Pty) Limited.

(7)

ANSWERS: QUESTION 4

4,1

Programmed output control measures

1. Printouts from the salary system should only be withdrawn from the printers through the entering of an access code on the printer's keypad by authorised personnel. In addition access codes should be changed regularly.
2. A record of the access gained, as mentioned above, should automatically be kept by a computer program. The information should be compared by a security program to a pre-programmed matrix of authorised personnel.
3. Any unauthorised attempts to gain access to the printouts should be transmitted to a printer and can only be extracted with the authorisation code of the internal auditor.
4. The computer on which the salary program is installed should only be able to send output to the mentioned printer.

4.2

Output handling procedures

1. Clear report identification practices should be implemented, for example:
 - The name of the report
 - The time and the production number of the report
 - Processing period covered
 - Sequenced pages
2. Compilation of a distribution checklist which identifies all items of output and who is to receive them.
3. Recording of output in a register to control movement. The receiver of the output should be required to sign for it as evidence of receipt.
4. The print function for the printing of confidential information should be restricted to printers v/hich are under the supervision of appropriate officials.
5. Design of stationary to promote confidentiality e.g. "sealed envelope" type salary slips.
6. Shredding of all output which is not required especially by-products of confidential information printed, e.g. carbon paper.

QUESTION 5: (Assignment 2: 2009)

A & B (Pty) Limited, a retail company that has a fully computerized accounting system and a strong control environment, has implemented the following general and application controls:

1. Hiring tests are used to select those individuals most likely to succeed in an electronic data processing environment.
2. A formal recovery plan is implemented, which is based on a careful analysis of the impact of loss of resources.
3. Security checks on your identity and purpose of visit by the security guard at the gate, before you are allowed entry to the premises within which the computer facilities are housed.
4. A checklist identifies each item of output as well as the authorized recipient of each item of output.
5. When a new system is implemented, the old and new systems are run in parallel with subsequent comparison of the output from both systems.

REQUIRED:

1. Differentiate between *General controls* and *Application controls*. (3)
2. Indicate, for each of the five controls given in the question, whether it is a *General* or *Application* Control, and then indicate into which *category* of General controls or Application controls they fall. (10)

QUESTION 5: ANSWER

5.1

a) General controls are those controls pertaining to the overall computer information System (CIS) environment within which each set of application controls will function. They relate to all applications and provide a framework within which the CIS department can exercise control over the development, operation and maintenance of individual applications. They are not specific to a particular user's needs.

b) Application controls are manual and automatic procedures that relate to specific computer information accounting systems designed to meet user needs. This is a control which is put in place over the input, processing and output of data to ensure that the information produced is valid, accurate and complete.

2.
 1. General Control – Organisational structure and personnel practices
 2. General Control – Continuity of operations
 3. General Control – Access control
 4. Application Control – Output control (distribution checklist/ validity)
 5. General Control – System development control(conversion control, parallel tests)

QUESTION 6: (Assignment 3- 2010)

Rugby Memos (Pty) Limited is a company that markets and sells a range of Rugby memorabilia in the Gauteng area through sales agents. The Company was recently started. Each of the products that the company sells is distinguished by a product code (6 Characters)

The Company currently has 45 sales agents who market and sell the products of the company. The company operates out of a warehouse situated in Johannesburg. The office comprises of an accountant, 2 sales men, 2 debtors personnel, 2 creditors personnel, 3 data processing personnel, 6 storemen and four delivery personnel.

The following is a brief description of the credit sales system at the Company.:

1. The Company keeps the sales of each agent separate by issuing each sales agent with an alpha-numerical sales agent code (4 Characters). Each customer is assigned a unique debtors code (5 CHARACTERS) to facilitate invoicing and record keeping.

2. When products are sold, the details of the transaction are recorded by the sales agent on a manual credit sales order.
3. At the End of each week each sales agent submits their credit sales orders to the sales department of the Company. The sales personnel check that the correct selling prices have been charged and that the sales orders have all the required information filled in on them.
4. The sales personnel group the sales orders **into Batches** and submit these batches to the data processing personnel for processing. The data processing personnel then convert the batches into machine readable format (Batch data preparation) and then process the sales orders (Batch Data Input) . The debtors master file, the inventory master file and the sales records are all simultaneously updated,
5. The Data processing personnel then print out invoices and delivery notes for the goods that need to be delivered to the customers.
6. The delivery notes are then handed to the storeman to prepare the orders for delivery. Once the orders are prepared they are given to the delivery personnel, together with the delivery notes for delivery.

REQUIRED:

Describe the **APPLICATION CONTROLS** that you would expect to find in the Company's internal Control system that will ensure the **VALIDITY, ACCURACY, and COMPLETENESS** of the Input of the Credit sales orders within the ADP Department of the Company.

ANSWER: QUESTION 6

Application controls

1. Weekly credit sales should be batched in batches of fixed sizes and each batch should be given a unique batch number.
2. Control totals should be calculated for each batch that is prepared.
3. A batch register should be maintained in which the details of the batches are noted.
4. The details of the person who prepared the batch, the batch details, control totals, batch number and batch size, should appear on the front of the batch.
5. The screen format in the data processing department should be standardised and designed to facilitate capturing of the information from the credit sales order batches.
6. The computer should guide the data processing personnel through each step in the input process by using on screen prompting.
7. The following logical tests should be performed by the computer on the input data:
 - a) **sign test** - certain fields may only be positive and may not contain negative values.
 - b) **field size test** - to test whether each field contains the correct number of characters. The product code should contain 6 characters and the debtors code should contain 5.
 - c) **alphanumeric test** - to test whether input fields contain the correct combination of alphabetical and/or numerical characters. The sales agent code may only contain numerical characters.
 - d) **limit test** - to test whether certain input fields fall within the predetermined limits. A limit could be placed on the maximum quantity of items of a certain product that customers may order. The limit test tests whether the limit is not exceeded.
 - e) **verification check** - a test to test whether the codes which are entered are valid- The sales agents code and debtors code entered are compared to a programed list of valid codes.
 - f) **check digit** - a redundant digit calculated from the number in an identification field and attached to that number. That logical relationship between the number and the check digit is recalculated by a program instruction during data entry to make sure that no error has been made by keying in the number.

8. The computer should display an error message as soon as an error is made during the input of the data. Errors on the source documents [made during data capture on the manual orders by sales agents), should be sent back to the sales personnel who should follow it up with the sales agent and, after correction, be resubmitted for input. Mistakes made during data input should be corrected immediately and no input should continue before the mistake has been corrected.
9. The control totals on the batches should be reconciled to the computer generated control totals of the batches captured. Any differences should be followed up.
10. After the batch has been processed by the data processing personnel, it should be signed off in the batch register.

QUESTION 7: PRINT-OUTS - Distribution (Assignment 3 – 2009)

Your Client, snakes and Ladders Limited, has recently converted to a computerised system. As a result, the management of the company has established an electronic data processing department (EDP))

The manager, Mr. Cobra, informs you of the following:

1. He is extremely concerned about reports and system printouts being utilised by unauthorised personnel.
2. He wants to appoint a number of new personnel in the EDP department.

REQUIRED:

- 8.1 Describe **7 controls which** will ensure that the reports and *system printouts* are only issued to authorized officials.

ANSWER: QUESTION 7

8.1 Output controls

1. Clear written procedures regarding the handling of printouts or reports should be compiled, for example, which printouts should be made and how often should it be printed.
2. A person should be allocated to accept responsibility for the distribution of printouts.
3. Clear report identification practices should be implemented, for example:
 - The name of the report.
 - The time and the production number of the report.
 - Processing period covered.
 - Sequenced pages.
4. Compilation of a distribution checklist which identifies all items of output and indicates the authorised recipient of the output.
5. Recording of output in a distribution register to control movement. The receiver of the output should be required to sign for it as evidence of receipt.
6. The signed distribution register and the distribution checklist should be reviewed and compared on a regular basis by a senior official to detect the distribution to unauthorised officials.
7. The print function for the printing of confidential information should be restricted to printers which are under the supervision of appropriate officials.
8. The design of stationary should promote confidentiality, for example "sealed envelope" type salary slips.
9. Shredding of all output which is not required, especially by-products of confidential information printed, for example carbon paper.
9. Reports and other printouts should be safely secured and locked away to prevent it from being used by unauthorised officials.

(1/2 mark for mention of control; 1 mark for description of control (maximum 9))

QUESTION 8

- 8.1 To describe the controls that should be implemented to protect the integrity of all master file information and to ensure that only *valid*, *complete* and *accurate*, changes to master files are made. (9)

8.1 ANSWERS:

Completeness

- Sequentially numbered audit trail of master file changes is produced
- Reconciliation of changes with the register of requests for changes
- Logs and reports

Accuracy

- Reconciliation of master files with master file amendment forms & third party documentation.
- Screen aids
- Edit Checks by computer
- Validation checks

Validity of processing changes

- Authorisation of changes in writing by senior management
- Amendment forms with supporting docs
- Access controls and levels of authorisation
- Checking logs for changes to master files and comparing to authorised documentation
- Follow-up unauthorised changes
- Master files to be reviewed by management regularly. (9)

QUESTION 9 Amendments to Master file changes - (Assignment 3-2011) 15 Marks

You are the auditor of Cheery Holidays Limited, a company that administers time share bookings for a large number of holiday resorts. All holiday resorts affiliated to Cheery Holidays Limited, sell the right to the use of a unit at a resort for a week at a time.

All first time purchasers of the right to use a unit, complete an application form on which they supply their personal details and submit it to Cheery Holidays Limited. If the application is accepted, a master file amendment form is completed and entered onto the company's members' master file. The system is able to produce a number of reports however, Cheery Holidays Limited fails to make use thereof.

REQUIRED

Describe the application controls relating to the amendments to the members master file that you would expect to find at Cheery Holidays Limited. Your answer should deal only with the following control categories:

Authorisation	(3)
Access to source documentation	(3)
Independent checks	(2)
Logs and reports	(7)

QUESTION 9 : ANSWER:

9.1 Amendments to the members master file

Authorisation:

1. **Original source documentation, the application form.** received from first time purchasers should be authorised and signed by supervisory staff.

(1 ½ marks)

2. **Write access** to the members master file **should be restricted** to a person independent of the booking functions. Booking clerks should not have access. This may be achieved by creating individual user profiles. (1 ½ marks)
(2x1 ½ =3)

Access to source documentation:

3. **Unused master file amendment forms** - must be kept under lock and the key should be held by a staff member independent of the application. (1 ½ marks)
4. Source documents must be **pre-numbered** and a register must be kept of receipts and issues of blank source documents. (1 ½ marks)
(2x1=3)

Independent checks:

5. An independent person should perform a regular reconciliation between:
- the master file amendment **forms to the original source** documentation to ensure that all master file details occurred and **are authorised** (valid), as **well as accurate**. (1 ½ marks)
 - the master file (**updated with new purchasers**) to the original source documentation to ensure that all master file details occurred and are authorised (valid), as well as accurate. (1 ½ marks)

Logs and reports:

6. The following logs and reports should be produced ('A mark) by the computer, reviewed ('A mark) and followed up ('A mark) by the financial controller (a supervisor who doesn't have write access to the application):
- Audit trails** - which provide a list of master file amendment forms processed. (1 ½ marks)
 - Override reports** - which provide a list of computer controls which have been overridden by employees using supervisory or management privileges, for example if the computer control for the age of a purchaser has been set at 18 year or older, the computer will generate a report of all purchasers who have been loaded onto the master file who are not yet 18 years. (1 ½ marks)
 - Exception reports** - which provide a summary listing of any activities which fall outside the parameters which have been set for control purposes, for example, all the numbers of master file amendment forms that were missing, ie didn't form part of the number sequence of forms being captured. (1 ½ marks)
 - Activity reports** -which provide a record for all individuals having writing access to the master file, detailing the usage times and duration of usage. Activity reports detailing strange days and times of usage should be further investigated. (1 ½ marks)

QUESTION 10 – APPLICATION CONTROLS

(Assignment 2 – 2011)

You were appointed as the auditor of Stay Fit Limited, a gym situated in Johannesburg. The system of Stay Fit Limited was computerised at the end of the previous year.

The managing director, Mr Energade, approached you for advice regarding the following:

- Complaints received from members regarding faulty personal details.
- The design of the membership application forms.

In addition to the normal audit, you agree to assist Mr Energade and to report your findings.

Mr Energade provided the following system description;

1. People applying for membership have to complete their personal details, the type of membership for which they wish to apply, as well as the joining date on a membership application form.
2. The available types of memberships and their respective codes are as follows:

Membership type	Membership code
Gold membership	101
Silver membership	102
Diamond membership	103

3. After the application form has been reviewed by one of the credit controllers, it is taken to Mr Powerade, the manager of the gym, for approval.
4. A 10 numerical character membership number is assigned to each successful applicant, and Mr Powerade fill it in on the application form.
5. Each approved application form is handed to Mrs Strong, the input clerk, who captures the following information on the computer:
 - Membership number
 - Applicant's name and surname
 - Residential and work address
 - Telephone number
 - Identity number
 - Membership number
 - Membership code
 - Joining date
6. A photograph of each member is taken. The following day the member can pick up his laminated membership card.

REQUIRED

10.1

Name and describe, using an appropriate example, four (4) application controls for each of the following categories, which should be in place when Mrs Strong, the input clerk, enters data from the membership application forms into the computer

- Access controls (6)
- Screen aids (6)
- Program checks (6)

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Present your answer as follows:

Application control (½ mark each)	Description (1 mark each)
Access controls	
1.	1.
Screen aids	
1.	1.
Program checks	
1.	1.

- 10.2** Describe four (4) source-document design controls that will assist to change the design of the membership application form to prevent the capturing of faulty personal details. (6)

Question : 10.1 Answer

Application controls regarding the input of new members' details

APPLICATION CONTROL (1/2 mark each)	DESCRIPTION (1 mark each)
ACCESS CONTROLS	
Particular applications are only accessible from certain computers.	The "loading of the membership applications module" of the membership program may only be accessible from the clerk, Mrs Strong's, computer.
Physical access restriction to computers which have access to sensitive modules.	Mrs Strong's computer should be in a secure office to which only she has the keys. The office should be kept locked if she is not in the office.
Restriction of access in terms of user profiles/access tables at systems level.	At system level, Mrs Strong should be able to gain access to the particular application, ie membership program, by using her user ID.
Restriction of access in terms of user profiles/access tables at application level.	At application level, access to the specific program function, ie loading of membership applications should be restricted to Mrs Strong.
Computer time out facilities.	If Mrs Strong fails to capture membership applications for one hour (or any other time) she should not be allowed to continue until she has re-entered her username and password.
Automatic shutdown in the case of access violations.	If the computer detects that somebody, other than Mrs Strong, has gained access to the "loading of the membership applications module", the computer should immediately shut down.
User ID and nature of activity logged by the computer.	Access to the "loading of membership applications module" should be logged so that the details of the activity carried out are recorded together with the user ID responsible for that activity. The log should be reviewed by a responsible manager, Mr Powerade, to ensure that only Mrs Strong loaded membership applications on the membership program.
SCREEN AIDS	
The minimum keying in of information.	Techniques such as "drop down" lists should be implemented which simply require the user to "select and click" the membership type they require from the three options ie 101, 102, 103.
Formatting of the screen.	The screen should be formatted to receive essential data in the order it appears on the membership application form and in terms of what the application form would look like.

Screen dialogue and prompts.	The computer should instruct the clerk to complete all the required fields, such as the membership number, the applicant's name and surname, residential and work address, etc.
Mandatory fields	If one of the required fields is not completed, for example, the membership number, keying in will not continue until this particular field has been entered.
PROGRAM CHECKS	
Range check	This check should detect if the number of dependent members falls inside the allowable minimum and maximum set, ie 1-3 members.
Limit check	The membership fees should not exceed a certain amount, for example R350.
Alpha-numeric check	This check should prevent/detect if the applicant's name and surname have been entered as numeric or if the membership number have been entered as alphabetic.
Check digit	A redundant character should be attached to the end of a number, for example a check digit can be included in the membership number which will detect all types of data coding errors.
Field size check	This check should detect if the membership number does not conform to 10 characters.
Missing data check/data presence check	If one of the required fields is blank, for example the membership code, the computer should detect the blank field and display an error message.
Valid code test/validation test	The membership type options, ie 101, 102, 103, should be compared to the programmed list of valid codes in the computer's memory.
Related data test	If a membership number is keyed in, the system should test if this number has not yet been allocated to another person.

10.2 Source document design controls

- If only a limited number of specific responses are appropriate, these responses should be pre-printed so that users merely tick the appropriate response.
- The title must clearly indicate the purpose of the document.
- Boxes can be used to prevent/identify field size errors, for example 10 boxes for the membership number.
- Order of field placement on documents should follow the order of keying in required by the membership application module.