

WORKPLACE ASSIGNMENT

National Certificate in Information Technology: **Systems Development NQF 5 – SAQA ID 48872**

Today's Date

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First Name

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Gender

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Time/Duration:

TOTAL MARKS: 154

PASS MARK: **70%**

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CORE UNIT STANDARDS

US TYPE	SAQA ID	UNIT STANDARD TITLE	NQF LEVEL	CREDITS
Core	115358	Apply information gathering techniques for computer system development	L5	7
Core	115391	Demonstrate an understanding of the principles of the internet and the world-wide-web	L4	3
Core	114049	Demonstrate an understanding of Computer Database Management Systems	L5	7

General Instructions:

- *First familiarize yourself with the content of this exercise by browsing all the instructions below.*
- *Don't leave questions unanswered or skip any instructions (Follow questions and instructions sequentially.)*
- *Please be advised that you have x10 working days to complete this assessment in*
- *Follow all exercise instructions carefully.*
- *Relax and enjoy.*
- *This assessment covers unit standards 115358 with a credit value of 7, unit standard 115391 with a credit value of 3 and unit standard 114049 with a credit value of 7.*

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PRACTICAL AND KNOWLEDGE QUESTIONNAIRE

Mark Allocation: 30

US TYPE	SAQA ID	UNIT STANDARD TITLE	NOF LEVEL	CREDITS
Core	115358	Apply information gathering techniques for computer system development	L5	7

1. Name and describe the different information gathering methods? (4)

Questionnaires- it is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Interview- it is a verbal conversation between two or more individuals where questions are asked and answers are given with the objective of collecting information.

Document Review- It is where a party sorts and analyzes the documents and the data they possess so as to find useful information in the documents. Observation- It is the process of closely monitoring a behavior or - occurrences and gather information based on what is happening as you observe. Case Study- often involves observing what happens to, or reconstructing 'the case history' of a single participant or group of individuals.

2. Name a benefit and drawback of each method. (8)

4

METHOD	BENEFIT	DRAWBACK
Questionnaires	Easy to compare and analyze.	Wording can bias the client's response.
Observation	Can adapt to events as they occur.	Can be difficult to interpret seen behaviours and categorize behaviours.
Interview	Can get full range and depth of information	Can take up much time and hard to analyze and compare.
Document Review	Can get comprehensive and historic-information.	Information can be incomplete and it takes much time.
Case Studies	Powerful means to portray program to outsiders	It is time consuming to collect, organize and describe.

2. Name at least two (2) Interactive Techniques (2)

-
- 1. Picture Prompt
-
- 2. Think Break
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3. Complete the below table regarding the difference between Open and Closed question types. Please state whether the criteria would be any of the below: (7)

- High
- Low
- Little
- Easy
- Much
- Difficult

Open-ended	Criteria	Closed
Low	Reliability of data	Low
Low	Efficient use of time	High
Low	Precision of data	High
High	Breath and depth	Little
Much	Skills / preparation needed	Little 
Difficult	Easy analysis of data	Easy
High	Facilitate communication	Low

4. Traditional information gathering method used to seek facts, opinions, feelings, informal procedures, goals etc. is call interviews. **True/ False** (Circle the correct answer) (1)

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5. Name 2 guidelines of conducting interviews. (2)

1. Interviews cannot include personal questions about family, religion, age or finances, questions must be chosen carefully.
 2. Prepare the interview carefully and there should be no interruptions during the interview.
-
-

Practical Task

Choose any person in your workplace environment and conduct the below interview, ensure that you record all responses on the document provided below:

Task 1

INTERVIEW QUESTIONNAIRE

Purpose: Provision of Inventory Information

- A. When was the last time you thought seriously about your decision-making process?
- B. Who are the trouble makers in your organisation, the ones who will show the most resistance to changes in the system that I have proposed?
- C. Are there any decisions you need more information about to make them?
- D. Do you have any major problems with the current development computer control system?
- E. Tell me a little about the output you'd like to see?

Please ensure that the outcome of the above interview has been documented.

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Outcomes for Task 1 (5)

As per the learners recording

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Task 2

Rewrite each of the above interview questions to be more effective in eliciting information. (Please see you do this on the page marked Task 2).

Please ensure the below:

- That you avoid leading questions
 - Avoid double barrel questions
 - Arrange questions in a logical sequence

Outcomes for Task 1 (9)

As per the learners recording

1. Describe key decisions you are responsible for.
 2. How well do your employees accept changes in the system?
 3. Is the current system providing you with enough information to help you make decisions?
 4. Do you have any problems with your current system?
 5. What kind of output would you like to see? What type of format is preferred? (It would be good to have a current form on hand for discussion)

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Question - Which of the below are Interview Structures? Please circle the correct answer/s (1)

- Pyramid Structure
- Funnel Structure
- Diamond Structure

Practical / Scenario based Questioning

Question - Determine and name the structure of the below interview. (2)

This is a Diamond Structure interview- The interview questions start with a specific question and ends with a general -
question which does not require a specific answer.

Interview Questionnaire

1. How long have you been in this position?
2. What are your key responsibilities?
3. What reports do you receive?
4. How do you view the goals of your department?
5. How would you describe your decision making process?
6. How can that process best be supported?
7. How frequently do you make those decisions?
8. Who is consulted when you make a decision?
9. What is the one decision you make that is essential to departmental functioning?
10. Do you use the web to provide information to clients?
11. Is this form complete?
12. What makes you feel that way?

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Question - The traditional information gathering method used to conduct surveys and also useful for exploratory studies and for aiding other information gathering techniques are Questionnaires. **True** / False. (Circle the correct answer) (1)

Question - Name 3 guidelines for using Questionnaires. (3)

-
1. Must be sensitive to the length of the questionnaire and questions must be relevant.....
 2. Use simple wording to ensure understanding to the person completing the questionnaire.....
 3. Avoid personal questions and embarrassing questions such as 'How old are you?'.
.....
.....

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Practical

Systematically critique/criticize the questionnaire below, please add your critique/criticism in the space provided below: (5)

QUESTIONNAIRE FOR ALL MANAGERS OF HEALTH SPAS
URGENTFILL OUT IMMEDIATELY AND RETURN PERSONALLY TO YOUR DIVISION MANAGER. YOUR NEXT PAYCHECK WILL BE WITHHELD UNTIL IT IS CONFIRMED THAT YOU HAVE TURNED THIS IN.

In 10 words or fewer, what complaints have you lodged about the current computer system in the last six months to a year? Are there others who feel the same way in your outlet as you do? Who? List their names and positions.

- 1.
- 2.
- 3.
- 4.
- 5.
- 7.

Terri
Please help
me improve this
form.
Tennys

What is the biggest problem you have when communicating your information requirements to headquarters? Describe it briefly.

How much computer downtime did you experience last year?

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 -

Is there any computer equipment you never use?

Description Serial Number

Do you want it removed? Agree Neutral Disagree

In your opinion, what's next as far as computers and Global Health Spas are concerned?

Thanks for filling this out. • • • • • • • • • •

1. Blackmail, threatening and no respect is conveyed in this questionnaire, for example, its says No pay check until the questionnaires - is submitted.
2. Questionnaires must be anonymous but the questionnaire instructs to be submitted personally.
3. The questionnaire is too personal and the questions are not relevant.
4. The questionnaire involves implying negative assumed perspectives about other employees.
5. The questionnaire is not properly structured, the questions are just random and not enough space provided for answers.

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Question - Joint Application Development, the method that focuses on development jointly with the users in a group setting, and seeks to encourage collaboration and team work is called Joint Application Development.

True / False Circle the correct answer. (1)

Question - Name 2 guidelines for implementing Joint Application Development. (2)

-
1. Ensure good communication skills and someone taking note of what is happening, eg progress, problems encountered.
.....
2. Agree on plans and scheduling of tasks.....

Question - Name one benefit and one drawback of JAD. (2)

-
1. BENEFIT- Improves development time, that is, much faster development.
.....
2. DRAWBACK- Time commitment- it requires significant amount of time commitment.
.....

Question - Please complete the table below regarding JAD. Indicate whether the methods are Obtrusive or Non Obtrusive. (3)

Method	Obtrusive or Non Obtrusive
Sampling	Non Obtrusive
Observation	Non Obtrusive
Document Analysis	Non Obtrusive

Question - Name 2 guidelines of Sampling. (2)

-
1. Determine the data to be collected or described.
.....
2. Determine the population to be sampled.
.....

Question - Name the seven STROBE elements. (7)

-
1. Office location. 2. Placement of the decision maker's desk. 3. Stationary office equipment. 4. Props. 5. External objects.
.....
6. Office lighting and colour. 7. Clothing.
.....

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Question - The method that focuses on examining formal and informal documents used in the organisation in order to understand existing processes and policies as well as to identify current practices. Document analysis can be carried out on quantitative documents or qualitative documents. True / False Circle the correct answer. (1)

Complete the below table regarding quantitative documents or qualitative documents. (2)

Add 2 of your own points to the table:

Quantitative documents	Qualitative documents.
Reports of decision-making	Emails
Performance reports	Memorandums
Records	Process Manuals
Data capture forms	Policy Handbooks

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RESEARCH PROJECT

Mark Allocation: 51

US TYPE	SAQA ID	UNIT STANDARD TITLE	NQF LEVEL	CREDITS
Core	115391	Demonstrate and understanding of the principles of the Internet and the world-wide-web	L4	3

Question 1 – Explain the principles and the World Wide Web. Please ensure that your explanations covers the following aspects; origins and history of the internet; major applications of the internet; history and development of the world-wide-web (20)

In 1966, MIT researcher Lawrence G. Roberts had developed a plan for "ARPANET", a computer network designed to withstand power outages, even if a few of the computers were inactive. The first ARPANET-link was made on October 29, 1969, between the University of California and the Stanford Research Institute. Only two letters were sent before the system crashed, but that was all the encouragement the computer researchers needed. In 1969, Defence Department researchers in the Advanced Research Projects Agency (ARPA) used this direct connection network model to connect four computers—one each at the University of California at-Los Angeles, SRI International, the University of California at Santa Barbara, and the University of Utah—into a network called the ARPANET. The ARPANET was the earliest of the networks that eventually combined to become what we now call the Internet. Throughout the 1970s and 1980s, many researchers in the academic community connected to the ARPANET-and contributed to the technological developments that increased its speed and efficiency. The World -Wide Web was invented by English scientist Tim Berners-Lee in 1989. He wrote the first web browser in 1990-while employed at CERN in Switzerland. It has become known simply as the Web. Berners-Lee called his system -of hyperlinked HTML documents the World Wide Web. The Web caught on quickly in the scientific research community, -but few people outside that community had software that could read the HTML documents. In 1994-Berners-Lee founded the world wide web Consortium (W3C) to help further develop ease of use and-accessibility of the web, and made it a standard that the web should be available to the public for free-and with no patent. The world wide web, or WWW, was created as a method to navigate the now extensive system of connected computers. Tim Berners-Lee, a contractor with the European Organization-for Nuclear Research (CERN), developed a rudimentary hypertext program called ENQUIRE-The program was designed to make information readily available to users, and to allow a user to explore-relationships between different pages (i.e. clicking to get to a different section of a website). By 1990,-with the help of Robert Cailliau, Berners-Lee developed the skeletal outline of the internet, including a-web browser and web server.

The WWW major applications include Email, Voip, Social Media and many more. These applications are-in the www.

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Question 2 – Who is the founder of the World Wide Web? (1)

Sir Timothy John Berners-Lee (simply known as Tim Berners-Lee)

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Question 3 – What is major technologies used on the internet today. (5)

- 1. Electronic Mail (email).....
 - 2. VoIP (Voice over Internet Protocol).....
 - 3. IM or Instant Message.....
 - 4. Websites (e-Commerce,Online Auction).....
 - 5. Social Media (Social Networks like Facebook etc).....
-
.....
.....

Question 4 – What is the use of these applications in business today? (5)

Email- Used for communication purposes, sending messages and attachments and arranging meetings.

VoIP-Used to communicate by making calls or leaving voice messages via the internet.

Social Media-Business uses Social media to reach their customers, making them aware of their services,- changing of ideas, and reading or uploading announcements and news, eg Facebook.

Websites-They make known of their business through providing information on Websites and can also conduct the business online, for example Auctions and E-Commerce.

Instant Messaging- Used to send short messages or Notifications to clients and employees.

.....
.....
.....
.....

Question 5 – How can the World Wide Web be applied in an intranet and extranet scenario? (10)

The term intranet describes an internet that does not extend beyond the organization that created it.... this can be WWW that only exists in the organizations that involves only computers that are within the organization to connect to each other, that is through a private network and can be applied by - by allowing users of your site access to the internet. Employees and others within your business will - access via the company's intranet. Visitors from outside of the company can connect via an extranet. Extranets- are extended to include specific entities outside the boundaries of the organization, such as -

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business partners, customers, or suppliers. As the Web became more widely used, many organisations began using the Internet, the public network on which the Web operates, as part of their extranets (and, in some cases, intranets).

Question 6 – Explain in detail the use of the latest internet applications (e.g. Web based email, Instant Messaging and VoIP technologies). (10)

Email- the Electronic Mail service allows you to send messages via the internet, it allows a sender to include attachments such as word attachments, as well as images. Emails also allow a user to send meeting requests, manage your calendar, and appointments, one application that allows you to perform things is Microsoft Outlook. Instant Messaging- or IM is an online chatting service that allows users to send or transmit text messages in realtime over the internet. Beyond simple text-based instant messages, most IM software can now allow users to share files and photos, broadcast their thoughts to friends through voice and video chat. They can also play and battle in games.

Voip-Voice over Internet Protocol (VoIP) technology lets you use the Internet to make and receive telephone calls. VoIP is available in a wide range of services. Some basic, free VoIP services require all parties to be at their computers to make or receive calls. Others let you call from a traditional telephone handset or even a cell phone to any other phone. The benefits of voip may include - Reduce travel and training costs, thanks to web and video conferencing. Have one phone number ring simultaneously on multiple devices, helping employees stay connected to each other and to customers.

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RESEARCH PROJECT

Mark Allocation: 33

US TYPE	SAQA ID	UNIT STANDARD TITLE	NQF LEVEL	CREDITS
Core	114049	Demonstrate an understanding of Computer Database Management Systems	L5	7

Question 1: What is a database management system? (2)

It is a system software for creating and managing databases. The DBMS provides users and programmers with a systematic way to manipulate data. This program lets users keep, sort, update, retrieve and modify their records in a single database; for example they can keep and update profiles in a client base.

Question 2: Name x3 different types of DBMS's, their uses and characteristics. (9)

1. Relational Database Management Systems - This DBMS has the characteristic of normalizing the data which is usually stored in tables ideal for stand alone applications, holding software configuration and native format storage models. Network BDMS- The Network model-structure is based on records and sets and most of these databases use SQL for manipulation of their data

Question 3: Describe commonly implemented features of commercial database management systems. *Please ensure that you elaborate on the purpose of each of the features* (10)

Data Structuring- all the information in a digital repository is organized into a clear hierarchical structure with records, tables or objects. The information will be organized in a catalogue, for easy access to retrieve-update and delete information. Database Customization-Default and necessary elements such as records, tables, or objects compose a database's structure, there can be created custom elements that meet specific needs of users. Data Retrieval-DBMS database management system accepts data input from users and stores it. Users can access the database later on to retrieve their records as a file, printed, or viewed on the screen. Multi-User Access-DBMS provides multiple users access to all types of information stored in one and the same data store and there is also a security feature that prevents some users from viewing and/or modifying certain data types.

Question 4: Describe data management issues and how it is addressed by a DBMS. Please ensure that your description identifies the problem they represent and includes examples. (10)

Limit on scalability-DBMS allow users to access the data in the database simultaneously, meaning they can have access at the same time, regardless of the number of users accessing.

Data Recovery/Loss-DBMS has a feature that recovers the data in case of the system crashing and restore the data. There are two techniques that the DBMS uses to recover the data, which are, Log Based Recovery and Recovery with Concurrent Transactions

Data Security- Normal data management may not be secure but the DBMS allows user authentication through passwords-

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It also provides a system of permissions to restrict user access to certain data resources. Data Redundancy, Inconsistency - the accuracy, consistent and relevant data is a sign of data integrity. With help of DBMS, companies can foster the- integrity of their business records, because changes to the data only have to be made in one place. DBMS solutions- also prevent errors and data losses. Increased Data Volume-DBMS can handle high volume of data and still maintain - data integrity and consistency, easy access to the data regardless of its high volume, can access specific data.

Data Management Auditability- Auditing is a facility of the DBMS that enables DBAs to track the use of database resources and authority. When auditing is enabled the DBMS will produce an audit trail of database operations. Each audited database operation produces an audit trail of information including what database object was impacted, who performed the operation, and when.

Question 5: Give an example of a DBMS end-user tool and the limitations thereof. (2)

Microsoft SQL Server 2008,2004

- MS SQL Server limits you to 1024 columns per table. The number of tables and of rows per table is only limited to 200 MB.
 - Each MS SQL database transaction log is limited to 100MB in size.

The End

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