



**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**ICT TECHNICIAN**

**KNQF LEVEL 5**

**PROGRAMME ISCED CODE: 061 2454A**

## MANAGE COMPUTERIZED DATABASE SYSTEMS

**UNIT CODE:**0612 451 08A

### UNIT DESCRIPTION

This unit covers the competencies required to manage computerized database systems. It involves designing computerized database, creating computerized database, manipulating computerized database, testing computerized database and maintaining computerized database.

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace functions	These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicized terms are elaborated in the range)</i>
1. Perform website Application user need analysis	1.1 Website user requirements are identified as per the user needs.
	1.2 Website user requirements specifications process is documented as per the user needs.
	1.3 Website user requirement specifications are reviewed as per user need report.
2. Design website application	2.1 <b><i>Website application design tools</i></b> are selected as per user needs.
	2.2 <b><i>Website application design methods</i></b> are implemented as per the user needs.
	2.3 <b><i>Website application visual hierarchy</i></b> is developed as per the user needs.
	2.4 Website application site map is created as per the user needs.

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These describe the key outcomes which make up workplace functions	These are assessable statements which specify the required level of performance for each of the elements  <i>(Bold and italicized terms are elaborated in the range)</i>
3. Develop website application	3.1 Front-end web pages are created as per website application design.
	3.2 Website backend is created as per website application design.
	3.3 Website application is integrated to the backend as per workplace procedure.
4. Host the website application	4.1 Website application hosting platform is selected as per host requirements.
	4.2 Server environment is setup as per host requirements.
	4.3 Website application files are uploaded as per host requirements.
	4.4 Website server is configured as per host requirements.
5. Test the website application	5.1 Website application test plan is developed as per the workplace procedures.
	5.2 <b><i>Website application testing techniques</i></b> are selected as per the workplace procedures.
	5.3 Website application is tested as per workplace procedures.
	5.4 Test report is developed as per workplace procedures.
6. Maintain the website application.	6.1 Website is monitored as per workplace procedures.
	6.2 Monitoring report is developed as per workplace procedures.
	6.3 Website application bugs are fixed as per monitoring report.
	6.4 Website application is updated as per the workplace procedures.
	6.5 Website is backed up in accordance with workplace procedures.

## **RANGE**

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

<b>Variable</b>	<b>Range</b>
1. Database models may include but are not limited to:	<ul style="list-style-type: none"><li>• Network</li><li>• Hierarchical</li><li>• Relational</li><li>• Object oriented</li></ul>
2. Database objects may include but are not limited to:	<ul style="list-style-type: none"><li>• Forms</li><li>• Tables</li><li>• Reports</li><li>• Queries</li><li>• Macros</li></ul>
3. Data relationships may include but are not limited to:	<ul style="list-style-type: none"><li>• One to one</li><li>• One to many</li><li>• Many to many</li></ul>

## **REQUIRED KNOWLEDGE AND SKILLS**

This section describes the knowledge and skills required for this unit of competency.

### **Required Knowledge**

The individual needs to demonstrate knowledge of:

- System analysis and design
- Documentation processes
- Computer and devices settings
- Cyber security threats and measures
- Technology trends in computerized database
- Techniques of distribution and monetizing of computerized database.
- Troubleshooting techniques

- Types of Maintenance techniques
- Data protection laws

### Required skills

The individual needs to demonstrate the following skills:

- Report Writing
- Data collection
- Analytical skills
- Problem solving skills
- Communication skills
- Time management
- Critical thinking

### EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1.Developed computerized <i>database models</i> as per user needs.</li> <li>1.2.Designed computerized database as per user requirements.</li> <li>1.3.Developed computerized database as per the computer database design.</li> <li>1.4.Populated computerized database as per the workplace procedure.</li> <li>1.5.Retrieved data as per the workplace requirement.</li> <li>1.6.Tested computerized database as per the work requirement.</li> <li>1.7.Optimized computerized database as per the user requirements.</li> </ul>
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2. Resource implications	<p>The following resources should be provided:</p> <p>2.1 Appropriately simulated environment where assessment can take place.</p> <p>2.2 Access to relevant work environment</p> <p>2.3 Resources relevant to the proposed activities or tasks</p>
3. Methods of assessment	<p>Competency may be assessed through:</p> <p>3.1 Practical</p> <p>3.2 Projects</p> <p>3.3 Third Party Reports</p> <p>3.4 Portfolio of evidence</p> <p>3.5 Written tests</p>
4. Context of assessment	<p>Competency may be assessed in a workplace or in a simulated workplace</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace job role is recommended.</p>