

061006T4ICT
ICT TECHNICIAN LEVEL 6
IT/OS/ICT/CR/10/6
DEVELOP COMPUTER PROGRAM
NOV/DEC 2023



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

PRACTICAL ASSESSMENT

INSTRUCTIONS TO THE ASSESSOR

1. Allocate **THREE HOURS** to the candidate to perform the practical task.
2. You are required to mark the practical as the candidate perform the tasks
3. You are required to take video clips at critical points
4. Ensure the candidate has a name tag and registration code at the back and front

OBSERVATION CHECKLIST

Candidate's name & Registration No.			
Assessor's name & Reg. code			
Unit(s) of Competency	DEVELOP COMPUTER PROGRAM		
Venue of Assessment			
Date of assessment			
<i>(Indicate the marks available and marks obtained respectively. Award marks appropriately as guided for in the items for evaluation indicated. Give a brief comment where necessary)</i>			
Items to be evaluated:	Marks allocated	Marks obtained	Comments
1. Developed C program structure // Preprocessor Directives #include <stdio.h> // Include standard input/output library // Function Prototypes (if applicable) // Global Variables (if needed) int main() { // Variable Declarations // Input // Processing // Output return 0; // Return 0 to indicate	16		

<p>successful execution</p> <pre> } </pre> <p><i>(Award 2 marks for procedure correctly mentioned=16marks)</i></p>			
<p>2. Developed user Input</p> <pre> #include <stdio.h> (1mk) int main() { (1mk) int num_values, i; (1mk) double sum = 0.0; (1mk) printf("Enter the number of values: "); (2mks) scanf("%d", &num_values); (2mks) </pre> <p><i>(Award marks for each correct procedure followed =8 marks)</i></p>	8		
<p>3. Declared Array.</p> <pre> if (num_values <= 0) { IF Statement-(1mk) Program Iteration loop-(4mks) printf("Invalid input. Please enter a positive number of values.\n"); // Error message (2mks) return 1; // Exit the program with an error code. Error code display message(1mk) double values[num_values];// (2mks) </pre> <p><i>(Award marks as allocated for each correct procedure=10 marks)</i></p>	10		

<p>4. Developed the input loop</p> <pre> for (i = 0; i < num_values; i++) { (2mks) printf("Enter value %d: ", i + 1); (2mks) scanf("%lf", &values[i]); (2mks) sum += values[i]; (2mks) } </pre> <p><i>(Award 2 marks for procedure followed in creating the program=8 marks)</i></p>	8		
<p>5. Wrote a code for calculation.</p> <pre> if (num_values > 0) { IF Statement-(1mk) Program Iteration loop-(3mks) double average = sum / num_values; (2mks) printf ("The average is: %lf\n", average); } (2mks) </pre> <p><i>(Award marks as allocated for each correct procedure =8 marks)</i></p>	8		
<p>6. Carried out error handling.</p> <ul style="list-style-type: none"> ✓ Identified possible errors ✓ Defined error codes ✓ Returned error codes ✓ Checked return values ✓ Customized error messages ✓ Logged Errors ✓ Graceful program termination ✓ Carried out validation and testing <p><i>(Award 2 marks for each correct procedure</i></p>	16		

<i>followed=16 marks)</i>			
<p>7. Displayed the Output.</p> <p style="text-align: center;">Enter the number of values: 4</p> <p style="text-align: center;">Enter value 1: 10</p> <p style="text-align: center;">Enter value 2: 15</p> <p style="text-align: center;">Enter value 3: 20</p> <p style="text-align: center;">Enter value 4: 25</p> <p style="text-align: center;">The average is: 17.500000</p> <p style="text-align: center;"><i>(Award 1 mark for procedure followed in creating the program=6 marks)</i></p>	6		
<p>8. Tested the developed program.</p> <ul style="list-style-type: none"> ✓ Compiled the program ✓ Executed the program ✓ Carried normal input testing ✓ Carried boundary testing ✓ Carried invalid input testing ✓ Performed user interaction testing <p style="text-align: center;"><i>(Award 2 marks for each correct task performed =12 marks)</i></p>	12		
<p>9. Performed documentation</p> <ul style="list-style-type: none"> ✓ Comments /* <li style="padding-left: 20px;">* This is a multi-line comment <li style="padding-left: 20px;">* It can span multiple lines. */ ✓ Function and module headers /* <li style="padding-left: 20px;">* Function: calculateAverage <li style="padding-left: 20px;">* ----- 	8		

<pre> * Calculate the average of an array of numbers. * * arr: An array of numbers. * size: The number of elements in the array. * * Returns: The calculated average. */ double calculateAverage(double arr[], int size) { // Function code here } </pre> <p>✓ Variable Comments int num_students; // Number of students in the class</p> <p>✓ Code structure comments // Main loop to process student records for (int i = 0; i < num_students; i++) { // Code for processing each student }</p> <p><i>(Award 2 marks for each correct documentation written=8 marks)</i></p>			
<p>10. Performed final touches</p> <ul style="list-style-type: none"> ✓ Code formatting ✓ Variable and function names declarations ✓ Optimization <p><i>(Award 2 marks for each correct task performed =6 marks)</i></p>	<p>6</p>		

<p>11. Printed the output</p> <p>Enter the number of values: 4</p> <p>Enter value 1: 10</p> <p>Enter value 2: 15</p> <p>Enter value 3: 20</p> <p>Enter value 4: 25</p> <p>The average is: 17.500000</p> <p><i>(Award 2 marks or 0 mark for correct print out followed=2 marks)</i></p>	<p>2</p>		
<p>TOTAL</p>	<p>100</p>		
<p>ASSESSMENT OUTCOMES</p>			
<p>The candidate was found to be:</p> <p style="padding-left: 40px;">Competent <input type="checkbox"/> Not yet competent <input type="checkbox"/></p> <p><i>(Please tick as appropriate)</i></p> <p><i>(The candidate is competent if s/he gets 50% or higher)</i></p>			
<p>Feedback from candidate:</p>			
<p>Feedback to candidate:</p>			
<p>Candidate's signature:</p>	<p>Date:</p>		
<p>Assessor's signature:</p>	<p>Date:</p>		