

*Faculty Name: IT*  
*Qualification Name: IT*  
*Software Development*  
*and Design*  
**Formative Assessment**  
**1 Paper**

0861 100 395 | [ENQUIRY@CTUTRAINING.CO.ZA](mailto:ENQUIRY@CTUTRAINING.CO.ZA) | [CTUTRAINING.AC.ZA](http://CTUTRAINING.AC.ZA)

# Table of Contents

Formative Assessment 1 Paper .....	2
Instruction(s) to Students.....	2
Scenario Question(s)      100 Marks.....	3

# Formative Assessment 1 Paper

Faculty Name:	Information Technology
Qualification Name:	IT Software Design and Software
Module Name:	Beginner Java MY Semester 1
Module Code:	JD521
Hand Out:	22 – 07 – 2023
Hand In:	31 – 07 – 2023
Total Marks:	100
Examiner:	Mr Junior Manganyi
Resources Required:	IDE

---

Scenario Question(s)	100 Marks
----------------------	-----------

---

This Formative Assessment 1 (FA1) contributes 10% towards the final mark.

## Instruction(s) to Students

1. All assessments are due at 23:30 (local time) on the specified date.
2. Copying from any source, including other students' work, is strictly prohibited. Plagiarism will result in disciplinary action.
3. Before submitting your assessment, download the "Declaration of Authenticity" form provided from Campus Online. Sign the form and include it as part of your submission.
4. Late submissions will be accepted within a three-day grace period after the closing date. However, there will be a deduction in marks:
5. On the first day, a 5% deduction will be applied, From the second day onwards, the deduction will be 1% per day, up to a maximum deduction of 15%.
6. If you need to submit your assessment during the grace period, you must inform your facilitator.

It is your responsibility to ensure that you have access to a reliable internet connection and the necessary resources to complete and submit your assessment on time.

## Scenario Question(s)

100 Marks

Study the scenario and complete the question(s) that follow:

### CTU Banking Application

CTU Training Solutions has launched a new online bank, and you have been assigned to develop a Java application to facilitate banking transactions. The application should enable users to deposit and withdraw funds, as well as save and earn interest based on the duration and amount of their savings.

To calculate the interest earned by users' savings, the following table should be implemented:

Savings Amount Range	Savings Duration	Interest Rate
R100 to R500	1 month	0.5%
<b>R600 to R1000</b>	1 month	2%
<b>Over R1000</b>	1 month	5%

When a user deposits or withdraws funds, the application should update the account balance accordingly.

Source: Manganyi Junior., HOP (2023).

## Question 1

1.1 Create a basic Java Application that will help CTU banking clients to perform basic transactions. The Application should meet the following menu requirements:

- Display all account details
- Deposit the amount
- Save the amount
- Withdraw the amount
- Exit

When the client saves money, the table above in the scenario must be used to perform calculations.

[Total = 100 Marks]

## Marking Rubric

Category	Criteria	Points
<b>Functionality</b>	The program meets all requirements and functions correctly	30
	Program includes menu with all required options	5
	Program correctly performs deposits	5
	Program correctly performs savings	5
	Program correctly performs withdrawals	5
	Program correctly exits when selected	5
<b>Code quality</b>	The code is well-organized, easy to read, and follows best practices for Java programming	20

	Code follows naming conventions for variables and methods	5
	Code is well-organized and easy to read	5
	Code follows best practices for Java programming	5
	Code is properly indented and formatted	5
<b>Input validation</b>	The program validates user input and provides appropriate error messages	10
	Program properly validates input for deposit amounts	3
	Program properly validates input for savings amounts	3
	Program properly validates input for withdrawal amounts	3
	Program provides clear error messages for invalid input	1
<b>Output clarity</b>	The program outputs clear and concise messages to the user	10
	Program provides clear instructions for user input	2
	Program outputs clear messages for successful deposits	2
	Program outputs clear messages for successful savings	2
	Program outputs clear messages for successful withdrawals	2
	Program outputs clear exit message when selected	2
<b>Efficiency</b>	The program runs efficiently and uses appropriate data structures and algorithms	10
	Program uses appropriate data structures and algorithms	5
	Program is efficient and runs quickly	5
<b>Creativity</b>	The program includes additional features or creative solutions beyond the basic requirements	10
	Program includes additional features beyond basic requirements	5
	Program demonstrates creativity in implementation	5
<b>Documentation</b>	The program includes clear comments and documentation to aid in understanding and maintenance	10
	Code includes clear and concise comments	5
	Documentation includes explanation of program functionality	3
	Documentation includes instructions for running the program	2
<b>Total</b>		<b>100</b>

---

End of Section A