THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

136/2

COMPUTER SCIENCE 2
(PRACTICAL)

(For Both Schools and Private Candidates)

Time: 3 Hours **Friday, 05th May 2017 a.m.**

Instructions

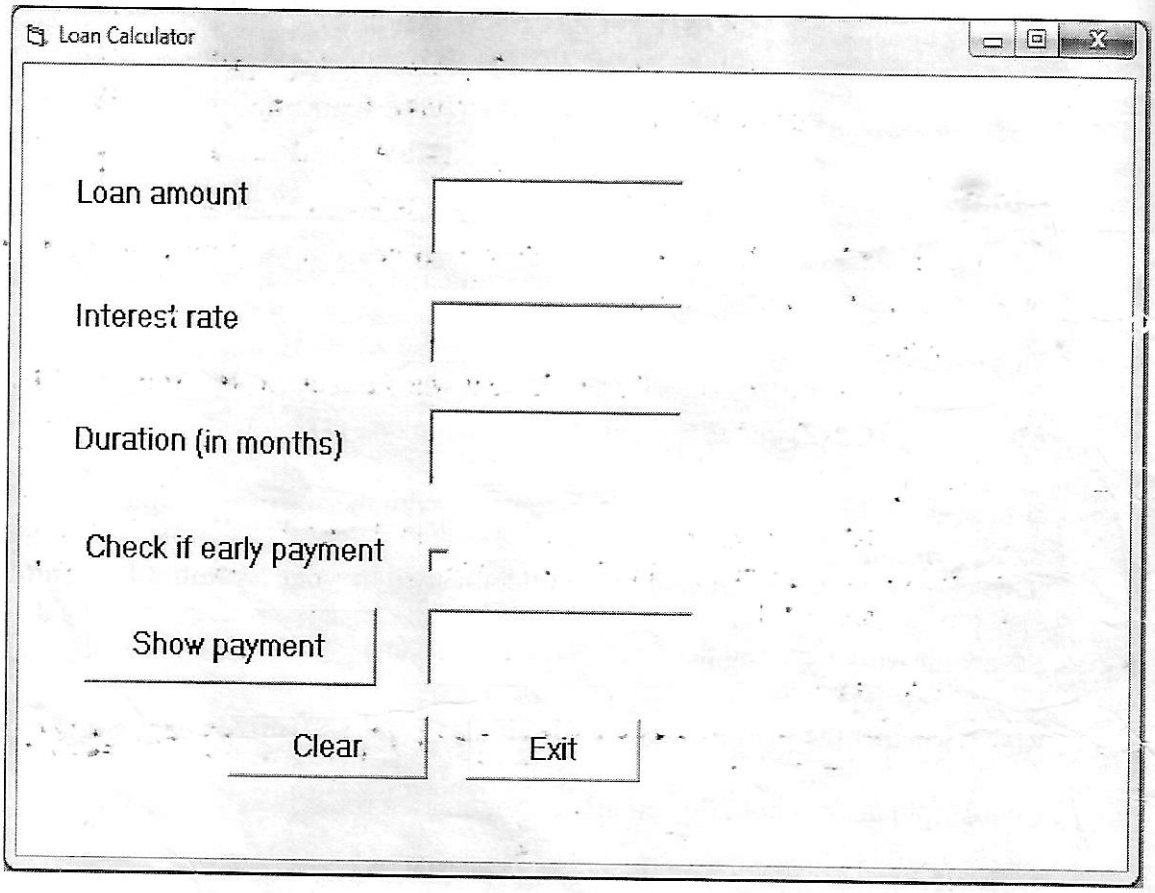
1. This paper consists of **three (3)** questions.
2. Answer any **two (2)** questions including question **one (1)**.
3. Submit printed codes and screenshots together with the softcopy of your work(s).
4. Save your work on the desktop in the folder named by your **Examination Number**.
5. Save your work by using the 1997-2003 version of the MS Office software you are using.
6. Check whether the **printed** work(s) are similar to the **softcopy** saved in the folder.
7. Cellular phones are **not** allowed in the examination room.
8. Type your **Examination Number** on every page of your softcopy work(s).

1. (a) Construct a C++ program which takes a character as an input from the keyboard and converts it into capital letter if it is a small letter and viceversa. A program should check the validity of the entered character and display a massage "The entered character is not an alphabetical letter" if the input is not a letter.

(b) Use "For loop", "While loop" and "Do...while loop" to create a C++ program that prints prime numbers up to 31. (HINT: The outputs should be printed on the same screen).

(25 marks)

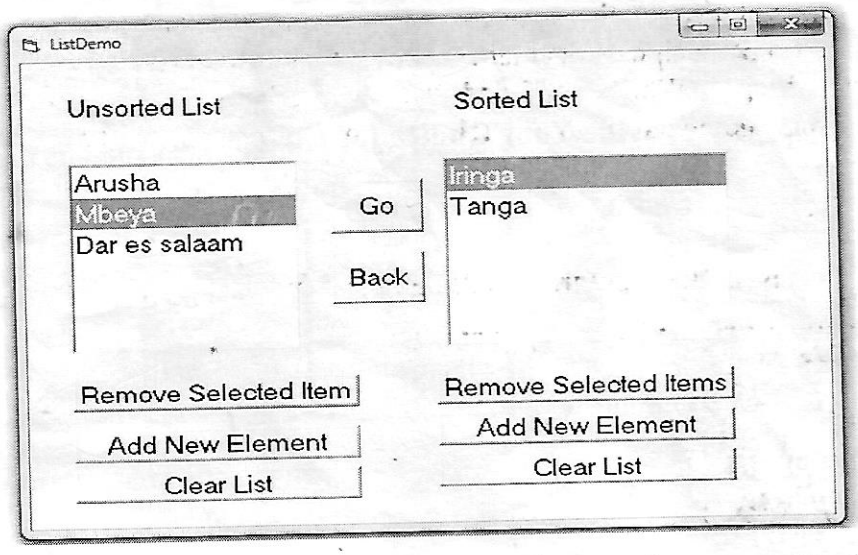
2. (a) (i) Use Visual Basic program to design the user interface as given below:



(ii) Construct Visual Basic codes which will enable a user to calculate monthly payment after entering the loan amount, interest rate and duration. A program should display the amount required to be paid on the text box after clicking command button "Show Payment".

HINT: Use following formula to calculate monthly payment:
Monthly Payment=Pmt(InterestRate, Duration, LoanAmount, 0, Due)
Note: Due is assigned to 0 if the checkbox is checked OK otherwise it is assigned to 1.

(b) (i) Use Visual Basic program to create the interface as represented below:



(ii) Create Visual Basic codes which will activate each command in the interface created in part (b) (i) above.

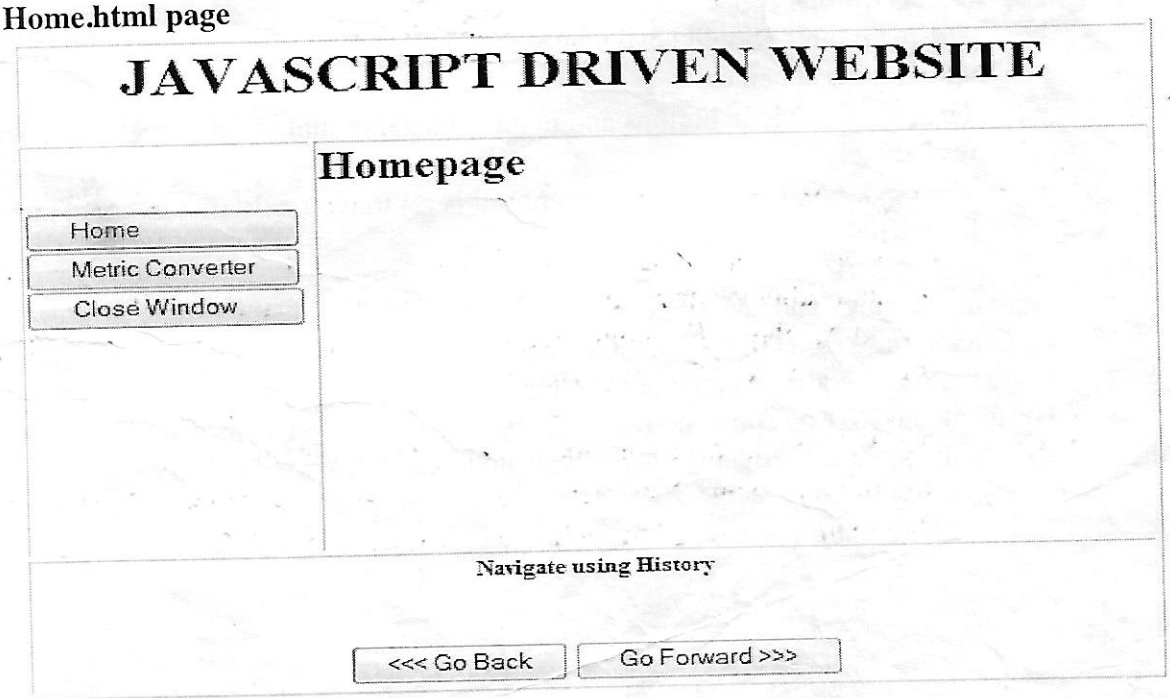
Note:

- Use input box to add new element when a user clicks "Add New Element" command button.

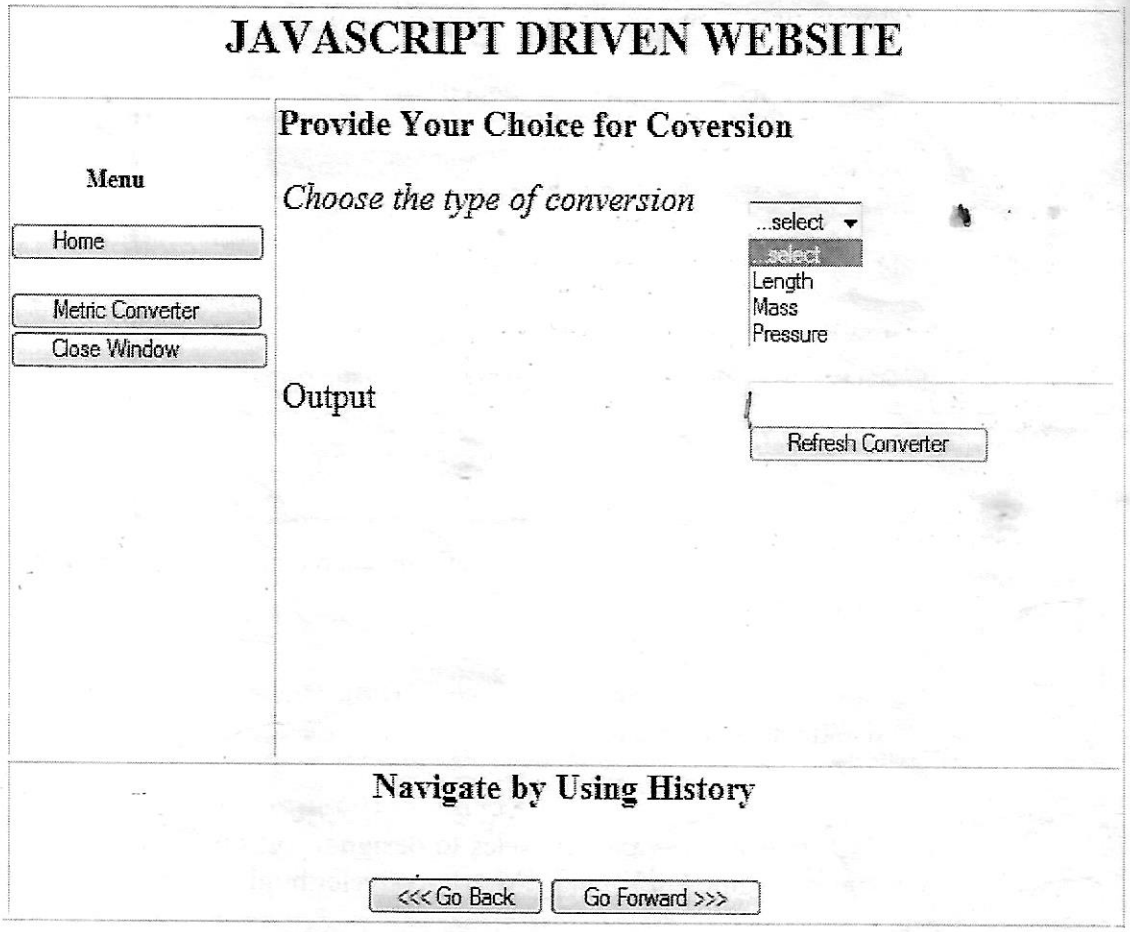
(25 marks)

3. (a) Use basic HTML tags and JavaScript codes to design a website which consists of two webpages namely "Home.html" and "Metric-conveter.html". The screenshot of the webpages are as follows:

Home.html page



Metric-conveter.html



Pages Descriptions

- The main table should have width=800, height=600, cell padding=2, border=1 and aligned at center.
- The width of Menu buttons and main content column should be 150 and 650 respectively.
- The input box in metric-converter.html is set to read only (the user can only read from it).

(b) Activate "Home" and "Metric Converter" links in the buttons menu by using JavaScript on Click mouse event. The links must open a linked page on the same window.

(c) Use JavaScript codes to activate the Close Window button.

(d) By using JavaScript codes activate the "Go Back" and "Go forward" buttons so that they will enable user to navigate the website through Browser History.

(e) Use JavaScript codes and dialog boxes to activate the Metric-converter.html page so that it can convert the measurements given in Table1. The output should be displayed in the input box shown on the metric-converter.html page.

Table 1:

Measurement	**Converting From/To**	
Length	Miles	Kilometers
Mass	Pounds	Kilograms
Pressure	Bars	Atmospheres

Hint:

1 Mile=1.61 Kilometers
1 Kilogram= 2.2 Pounds
1 Atmosphere= 1.0133 Bars

(25 marks)