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

136/2

COMPUTER SCIENCE 2

(For Both School and Private Candidates)

Time: 3 Hours **Year: 2024**

Instructions

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

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1. The Nobel Academy School (NAS) pays its employees based on the following criteria: Each employee is enabled with additional of 20% of the basic salary for House Allowance (HA), 15% for Lunch Allowance (LA) and 5% for Transport Allowance (TA). However, 10% of basic salary is deducted from each employee's salary for Social Security (SOSE) fund contribution. Fifteen per cent (15%) of the gross salary is deducted as Pay as You Earn (PAYE) if the employee's gross salary is more than 200,000 but less or equal to 500,000. If the employee's gross salary is more than 500,000 but less than or equal to 1,000,000, then 20% of the employee's gross salary is deducted as PAYE. Otherwise, thirty per cent (30%) is deducted.

   (a) Use C++ programming language to develop a program which prompts a user to enter 100 employees' names. The program should display each employee's Name, Basic Salary, House Allowance (HA), Lunch Allowance (LA), Transport Allowance (TA), Social Security (SOSE) fund, Gross Salary, Pay as You Earn (PAYE) and Net Salary.

   (b) Test your program for three employees and print a screen shot.
   HINT:
   - Gross Salary=Basic Salary +HA+LA+TA
   - Net Salary= Gross Salary-PAYE-SOSE
   - Organize your program in three functions; **PataData()** for capturing employees details, **KokotoaMshahara()** for calculating the salary and **PrintSlip()** for displaying employees salary.

2. (a) The National Electro Commission (NEC) is facing difficulties in updating the voters` book including new voters. However, the work plan is done manually which hinders citizens to register online. Currently, the director has decided to establish online form to solve this problem. Use HTML codes to design a registration form as given in Figure 1.

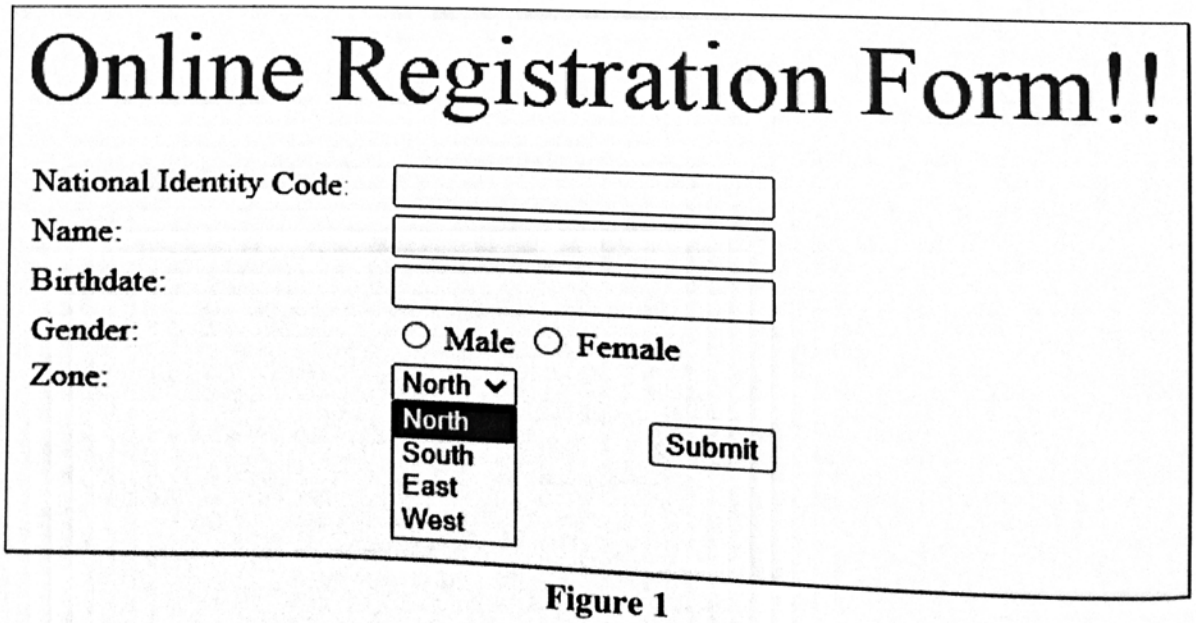


Figure 1

Form descriptions:

- The font color and size of the heading "Online Registration Form" should be blue and 14 respectively.
- The input type of the textbox for National Identity Code should be password.

(b) Use JavaScript to activate the form created in Figure 1 in order to display the following messages in the message box;

- "Fill all blanks" if any text box is not filled.
- "You are not Tanzanian" if the entered National Identity Code is **not** 02551961.
- "Your age should be above 18" if the difference between entered year at the birthdate textbox and election year 2025 is less than 18.
- "Conglatulation! You have registered successful" if all details are filled as required. A form should also display "Your Voting Identification Code is T.xxxyyy" where xxx is the National Identity Code and yyy is the entered birthdate.

HINT: (Message should be displayed when a user clicks a Submit button).

3. Students' academic records at Mapambano high school which were stored in paper based format were burnt due to fire accident few weeks ago. As a result, the Headmaster recommended the deployment of a Computerized School Management System which will manage students' academic results as well as school events (Figure 2). You have been asked to develop a Visual Basic program which will accept student personal and academic particulars. The program then computes total, average, grade performance and display list of student particulars in a grid view (Figure 3). Study Figure 2 carefully and answer the questions that follow;

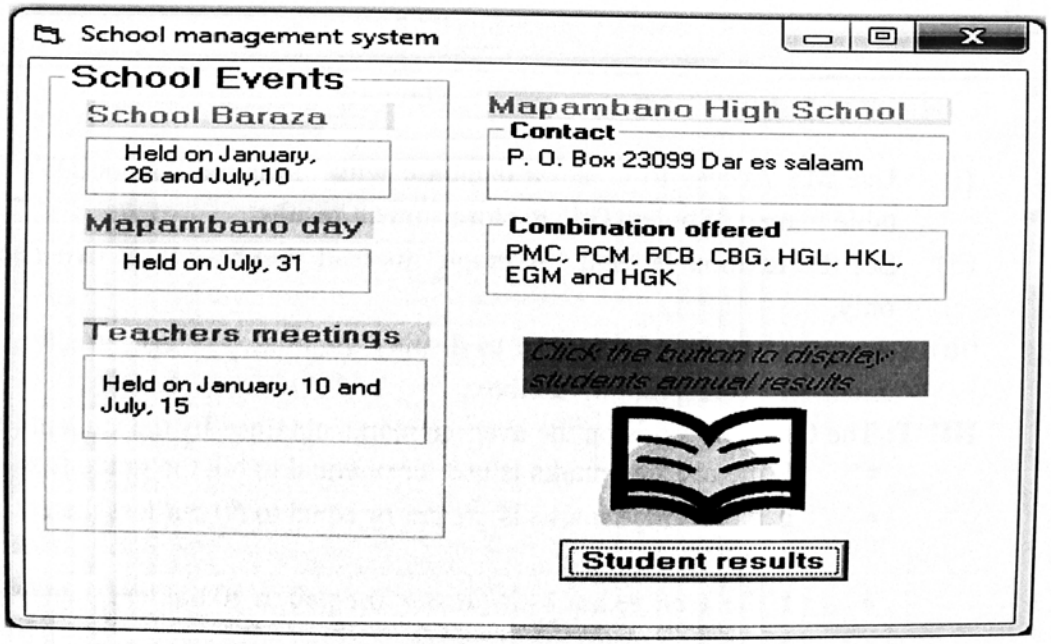
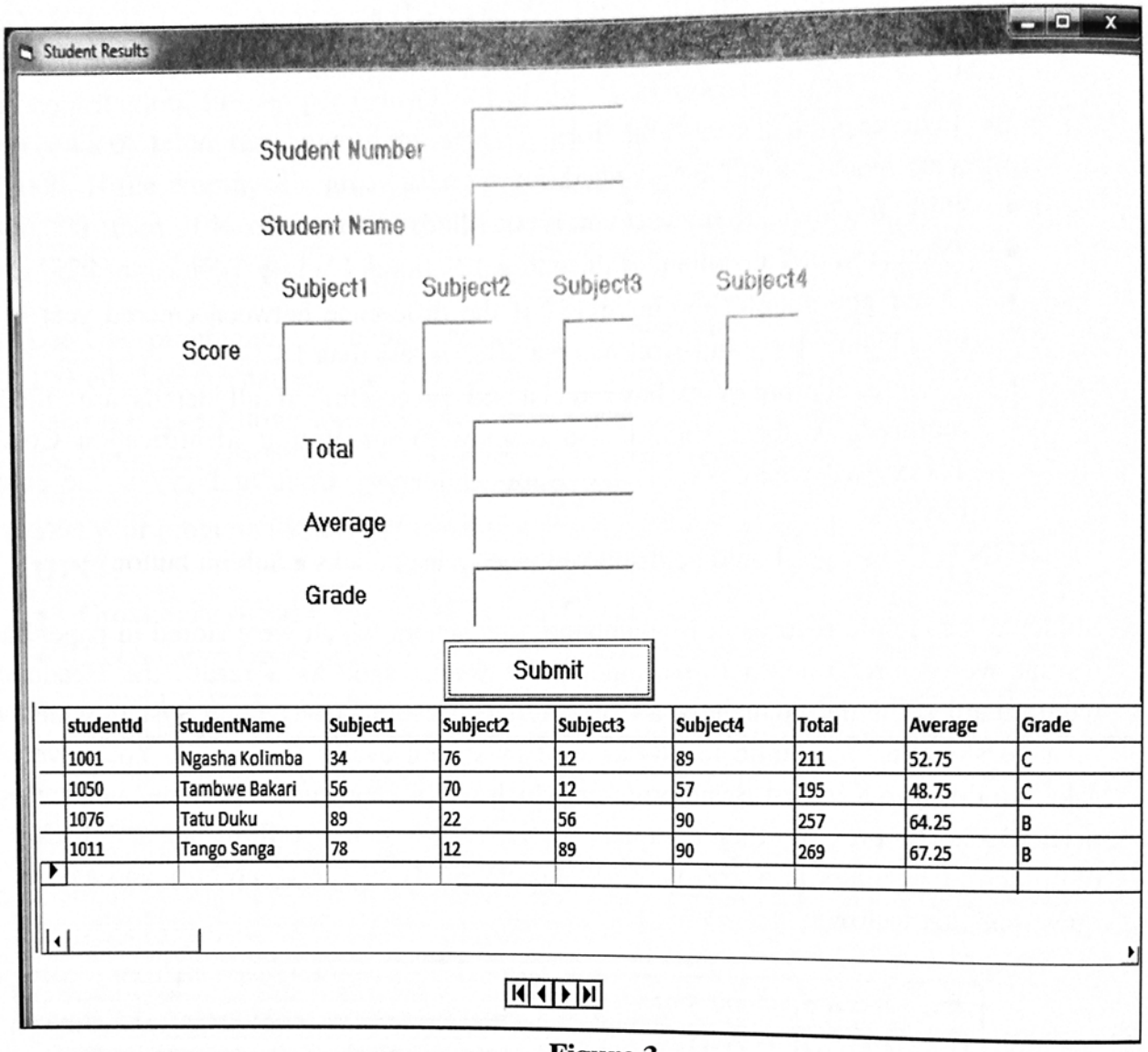


Figure 2

(a) Create an interface form depicted in Figure 2.

(b) Create another two interface forms depicted in Figures 3 and 4.



studentId	studentName	Subject1	Subject2	Subject3	Subject4	Total	Average	Grade
1001	Ngasha Kolimba	34	76	12	89	211	52.75	C
1050	Tambwe Bakari	56	70	12	57	195	48.75	C
1076	Tatu Duku	89	22	56	90	257	64.25	B
1011	Tango Sanga	78	12	89	90	269	67.25	B

Figure 3

(i) Use MS Access to create a database with the name "SchoolDb" then add the table named "StudentTbl" to store student results.

(ii) Set the textbox labeled "Average" to read numbers with two decimal places only.

(iii) Automate an Interface Form to display the total, average, grade when the user clicks the corresponding textbox.

HINT: The Grade depends on the average marks obtained by the students as follows:

- If the average marks is greater or equal to 80, the grade is A
- If the average marks is greater or equal to 60 but less than 80, the grade is B
- If the average marks is greater or equal to 40 but less than 60, the grade is C

- If the average marks is greater or equal to 20 but less than 40, the grade is D
- Otherwise the grade is F.

(c) Activate the button "Student results" in Figure 2 so that when a user clicks on it, it opens a message box to ask whether a user is a teacher or student.

(i) If a user is a teacher, it opens the Form given in Figure 3 which will help a teacher to manage student`s results.

(ii) If a user is a student, it opens the form given in Figure 4. Activate "Search" button so as to enable a student to search the grade scored by entering student number and clicking search button.

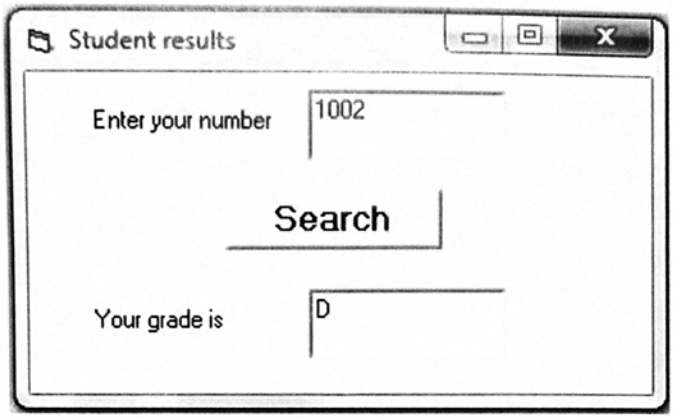


Figure 4