



# Sadiq Public School

Do the right, fear no man

**Subject: Computer Science**

**Class: C2**

**Saturday, 16<sup>th</sup> Nov., 2024**

**Lesson:** Nested If-Else Statements in Pseudo Code

**Inquiry:** In our previous lesson we learned about the if-else condition which is based on a one condition. What you think if we want to check more than one conditions then how can we do this? Here is the solution.

**Information:**

1. Nested if-else statements are a type of decision-making construct where one `if` or `else` block contains another `if` or `else` block. This allows us to make decisions within decisions, which is particularly useful for solving complex problems that require multiple levels of conditions.

**General Structure of Nested If-Else in Pseudo Code**

```
IF condition1 THEN
```

```
    // Block of code to execute if condition1 is true
```

```
    IF condition2 THEN
```

```
        // Block of code to execute if condition2 is also true
```

```
    ELSE
```

```
        // Block of code to execute if condition2 is false
```

```
    ENDIF
```

```
ELSE
```

```
    // Block of code to execute if condition1 is false
```

```
    IF condition3 THEN
```

```
        // Block of code to execute if condition3 is true
```

```
    ELSE
```

```
        // Block of code to execute if condition3 is false
```

```
    ENDIF
```

```
ENDIF
```

**Example:** Determine the grade of a student based on their marks.

```
INPUT marks
```

```

IF marks >= 90 THEN
    OUTPUT "Grade: A"
ELSE
    IF marks >= 75 THEN
        OUTPUT "Grade: B"
    ELSE
        IF marks >= 60 THEN
            OUTPUT "Grade: C"
        ELSE
            IF marks >= 50 THEN
                OUTPUT "Grade: D"
            ELSE
                OUTPUT "Grade: F"
            ENDIF
        ENDIF
    ENDIF
ENDIF
ENDIF
ENDIF
ENDIF
ENDIF
END

```

### Explanation of the Example

- i. The program starts by taking the student's marks as input.
  - ii. The first `IF` checks if the marks are greater than or equal to 90. If true, it outputs "Grade: A".
  - iii. If not, it goes to the `ELSE` block and checks if the marks are greater than or equal to 75 for "Grade: B".
  - iv. This process continues through nested `IF-ELSE` blocks, checking for grades "C", "D", or "F".
2. Read your text book about the above topic. (Page no. 266-267)
  3. Please watch the following YouTube video about the topic.

[Computer Science 2210 Paper 2 Pseudocode Part 3 SELECTION If Statements - YouTube](#)

### Synthesising/Absorbing the Information:

Study your lesson thoroughly and make your notes.

## Practising:

### 1. Eligibility for Admission

Write a pseudo code to determine if a student is eligible for admission based on the following conditions:

- If marks in mathematics  $\geq 70$  AND marks in science  $\geq 60$ , the student is eligible.
- If only one condition is met, the student is conditionally eligible.
- If neither condition is met, the student is not eligible.

### 2. Employee Bonus Calculation

Write a pseudo code to calculate an employee's bonus based on their years of service and performance rating:

- If years of service  $> 10$ :
  - If performance rating  $> 4.5$ , bonus = 20% of salary.
  - Else, bonus = 15% of salary.
- If years of service  $\leq 10$ :
  - If performance rating  $> 4.5$ , bonus = 10% of salary.
  - Else, bonus = 5% of salary.

### 3. Number Classification

Write a pseudo code to classify a given number as positive, negative, or zero. Additionally, if the number is positive, check if it is even or odd.

### 4. Discount Calculator

Write a pseudo code to calculate the discount on a product based on the following rules:

- If the purchase amount is greater than 5000:
  - If the customer is a regular member, apply a 20% discount.
  - Otherwise, apply a 15% discount.
- If the purchase amount is 5000 or less:
  - If the customer is a regular member, apply a 10% discount.
  - Otherwise, no discount.

### 5. Temperature Classification

Write a pseudo code to classify a temperature as follows:

- If temperature  $> 40$ : "Very Hot"

- If  $30 \leq \text{temperature} \leq 40$ : "Hot"
- If  $20 \leq \text{temperature} < 30$ : "Warm"
- If  $10 \leq \text{temperature} < 20$ : "Cool"
- If  $\text{temperature} < 10$ : "Cold"

**Feedback:** Write the answers of all questions on notebook take the pictures of pages and email to your teacher. You can also type the answers in your email message rather than taking the pictures and then send to your teacher. Just type the questions number and answer, no need to type the questions.

*Please if you have any question about the above topic, any word you didn't understand, anything all, please send an email to your teacher and he/she will reply as soon as possible.*

Class	Teachers' Names	Teachers' Abbreviations	Teachers' Email Addresses	Instructions
C2A	Adnan Hameed Qureshi	AHQ	Adnanhameedqureshi@gmail.com	C2A students will send their home assignments to their subject teacher (AHQ) for checking and getting feedback.
C2B	Adnan Hameed Qureshi	AHQ	Adnanhameedqureshi@gmail.com	C2B students will send their home assignments to their subject teacher (AHQ) for checking and getting feedback.
C2C	Moazzam Iqbal	MI	Moazzam_iqbal@hotmail.com	C2C students will send their home assignments to their subject teacher (MI) for checking and getting feedback.
C2D	Moazzam Iqbal	MI	Moazzam_iqbal@hotmail.com	C2D students will send their home assignments to their subject teacher (MI) for checking and getting feedback.
C2E	Moazzam Iqbal	MI	Moazzam_iqbal@hotmail.com	C2E students will send their home assignments to their subject teacher (MI) for checking and getting feedback.
C2GA	Seema Dawood	SSD	seema_ssd_sadiq@protonmail.com	C2GA students will send their home assignments to their subject teacher (SSD) for checking and getting feedback.
C2GB	Seema Dawood	SSD	seema_ssd_sadiq@protonmail.com	C2GB students will send their home assignments to their subject teacher (SDD) for checking and getting feedback.