Assignment (5)

1. **Write a C program to print a rectangle of stars using nested loops**

```c
#include <stdio.h>

int main() {
    int rows, cols, i, j;

    // Get the number of rows and columns from the user
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    printf("Enter the number of columns: ");
    scanf("%d", &cols);

    // Input validation: Ensure rows and cols are positive
    if (rows <= 0 || cols <= 0) {
        printf("Rows and columns must be positive integers.\n");
        return 1; // Return an error code
    }

    // Use nested loops to print the rectangle of stars
    for (i = 1; i <= rows; i++) {
        for (j = 1; j <= cols; j++) {
            printf("*"); // Print a star without a newline
        }
        printf("\n"); // Move to the next line after each row is printed
    }

    return 0; // Indicate successful execution
}
```

2. **What does the 'break' statement do inside the loop?**

   a) Pauses the loop

   b) Terminates the loop immediately

   c) Skips to the next iteration

   d) Exits the program

3. **What does the 'continue' statement do inside the loop?**

   a) To stop the loop

   b) To skip the rest of the current loop iteration and continue with the next one

   c) To repeat the loop from the beginning

   d) To pause the loop execution

4. **What will be the output of the following C code snippet?**

```c
for (int i = 10; i >= 0; i -= 2) {
    printf("%d ", i);
}
```

a) 10 8 6 4 2 0
b) 10 9 8 7 6 5 4 3 2 1 0
c) 9 7 5 3 1
d) No output

5. **What is the correct way to write a nested 'for' loop in C?**

a) for (int i = 0; i < n; i++) { for (int j = 0; j < m; j++) { } }
b) for (int i = 0; i < n; i++), for (int j = 0; j < m; j++) { }
c) for (int i = 0, j = 0; i < n, j < m; i++, j++) { }
d) for int i = 0; i < n; i++ { for int j = 0; j < m; j++ { } }

Name: Esmail Sameh Abdo
D6
2024036792