PRACTICAL N0-07

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ROLL NO: 74

```
#include <stdio.h>
void right_triangle_numbers(int n);
void pyramid_stars(int n);
void pyramid_alphabets(int n);
void diamond_same_numbers(int n);
int main()
{
   int choice, n;
   while (1) {
      printf("\n========== PATTERN MENU ==========\n");
      printf("1. Right Angled Triangle with Same Numbers\n");
      printf("2. Pyramid with *\n");
      printf("3. Pyramid with Alphabets\n");
      printf("4. Diamond with Same Numbers\n");
      printf("5. Exit\n");
      printf("Enter your choice (1-5): ");
      scanf("%d", &choice);
      if (choice == 5) {
         printf("\nExiting... Thank you!\n");
         break;
      }
      if (choice < 1 || choice > 5) {
         printf("\nInvalid choice! Please try again.\n");
         continue;
```

```
        }
        printf("Enter number of rows: ");
        scanf("%d", &n);
        switch (choice)
        {
            case 1:
                right_triangle_numbers(n);
                break;
            case 2:
                pyramid_stars(n);
                break;
            case 3:
                pyramid_alphabets(n);
                break;
            case 4:
                diamond_same_numbers(n);
                break;
        }
    }

    return 0;
}
void right_triangle_numbers(int n) {
    int i, j;
    for (i = 1; i <= n; i++) {
        for (j = 1; j <= i; j++) {
            printf("%d", i);
```

```
        }
        printf("\n");
    }
}
void pyramid_stars(int n) {
    int i, j, space;
    for (i = 1; i <= n; i++) {
        for (space = i; space < n; space++) {
            printf(" ");
        }
        for (j = 1; j <= (2 * i - 1); j++) {
            printf("*");
        }
        printf("\n");
    }
}
void pyramid_alphabets(int n) {
    int i, j, space;
    char ch;
    for (i = 1; i <= n; i++) {
        for (space = i; space < n; space++) {
            printf(" ");
        }
        ch = 'A';
        for (j = 1; j <= i; j++) {
            printf("%c", ch);
            ch++;
```

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        }
        ch -= 2;
        for (j = 1; j < i; j++) {
            printf("%c", ch);
            ch--;
        }
        printf("\n");
    }
}
void diamond_same_numbers(int n) {
    int i, j, space;
    for (i = 1; i <= n; i++) {
        for (space = i; space < n; space++) {
            printf(" ");
        }
        for (j = 1; j <= (2 * i - 1); j++) {
            printf("%d", i);
        }
        printf("\n");
    }
    for (i = n - 1; i >= 1; i--) {
        for (space = n; space > i; space--) {
            printf(" ");
        }
        for (j = 1; j <= (2 * i - 1); j++) {
            printf("%d", i);
        }
```

```
        printf("\n");
    }
}
```

OUTPUT:

```
========== PATTERN MENU ==========
1. Right Angled Triangle with Same Numbers
2. Pyramid with *
3. Pyramid with Alphabets
4. Diamond with Same Numbers
5. Exit
Enter your choice (1-5): 1
Enter number of rows: 3
1
22
333

========== PATTERN MENU ==========
1. Right Angled Triangle with Same Numbers
2. Pyramid with *
3. Pyramid with Alphabets
4. Diamond with Same Numbers
5. Exit
Enter your choice (1-5): 2
Enter number of rows: 3
  *
 ***
*****
```

========== PATTERN MENU ==========

1. Right Angled Triangle with Same Numbers

2. Pyramid with *

3. Pyramid with Alphabets

4. Diamond with Same Numbers

5. Exit

Enter your choice (1-5): 3

Enter number of rows: 3

  A

 ABA

ABCBA

========== PATTERN MENU ==========

1. Right Angled Triangle with Same Numbers

2. Pyramid with *

3. Pyramid with Alphabets

4. Diamond with Same Numbers

5. Exit

Enter your choice (1-5): 4

Enter number of rows: 3

  1

 222

33333

 222

  1

========== PATTERN MENU ==========

1. Right Angled Triangle with Same Numbers
2. Pyramid with *
3. Pyramid with Alphabets
4. Diamond with Same Numbers
5. Exit

Enter your choice (1-5): 5

Exiting... Thank you!

=== Code Execution Successful ===