Logic Building Assignment : 20

Complete below code snippets it contains only service provider function.

Write entry point function to call below helper functions separately.

Create separate visual Studio project for each problem statement separately.

Each project should contains below things

- **File which contains entry point function**
- **File which contains helper function**
- **File which works as header file**

```
#include<stdio.h>
#include<stdlib.h>

#define TRUE 1
#define FALSE 0

typedef int BOOL;

//
// Every below pattern function accepts base address of array
// and number of elements from user
//

// 1. Write a program which print below pattern as

////////////////////////////////////////
//
//  Innput :   89  67  45  45  78
//           5
//
//  Output
//           89  67  45  45  78
//           89  67  45  45  78
```

```
//          89  67  45  45  78
//          89  67  45  45  78
//          89  67  45  45  78
//
////////////////////////////////////////

void Pattern1(int arr[], int iSize)
{
   // Logic
}

// 2. Write a program which print below pattern as

////////////////////////////////////////
//
//  Innput :   89  67  45  11  78
//          5
//
//  Output
//          89  67  45  11  78
//          78  11  45  67  89
//          89  67  45  11  78
//          78  11  45  67  89
//          89  67  45  11  78
//
////////////////////////////////////////

void Pattern2(int arr[], int iSize)
{
   // Logic
}

 // 3. Write a program which print below pattern as

////////////////////////////////////////
//
//  Innput :   89  67  45  11  78
//          5
//
//  Output
```

```
//          89  67  45  11  78
//          89  67  45  11
//          89  67  45
//          89  67
//          89
//
//////////////////////////////////////////

void Pattern3(int arr[], int iSize)
{
   // Logic
}

// 4. Write a program which print below pattern as

//////////////////////////////////////////
//
//  Innput :   89  67  45  11  78
//          5
//
//  Output
//          89
//          89  67
//          89  67  45
//          89  67  45  11
//          89  67  45  11  78
//
//////////////////////////////////////////

void Pattern4(int arr[], int iSize)
{
   // Logic
}

// 5. Write a program which print below pattern as

//////////////////////////////////////////
//
//  Innput :   89  67  45  11  78
//          5
```

```
//
//  Output
//          89  67  45  11  78
//          89  0   0   0   78
//          89  0   0   0   78
//          89  0   0   0   78
//          89  67  45  11  78
//

////////////////////////////////////////

void Pattern5(int arr[], int iSize)
{
   // Logic
}

////////////////////////////////////////

int main()
{
   BOOL Running = TRUE;
   int *ptr = NULL;

   int iLength = 0,i = 0,iChoice = 0;

   printf("\n-- Marvellous Innfosystems : Array Pattern Printing Application --\n\n");

   printf("Enter number of Elements : \t");
   scanf("%d",&iLength);

   ptr = (int *)malloc(iLength * sizeof(int));
   if(NULL == ptr)
   {
      printf("Error in memory allocation\n");
      return -1;
   }
   for(i = 0; i< iLength; i++)
   {
      printf("Enter elemennt no : %d\t",i+1);
      scanf("%d",&ptr[i]);
```

```
    }
    while(Running)
    {
        printf("\nEnter your choice\n");
        scanf("%d",&iChoice);

        switch(iChoice)
        {
            case 1:
                Pattern1(ptr,iLength);
                break;

            case 2:
                Pattern2(ptr,iLength);
                break;

            case 3:
                Pattern3(ptr,iLength);
                break;

            case 4:
                Pattern4(ptr,iLength);
                break;

            case 5:
                Pattern5(ptr,iLength);
                break;

            case 0:
                Running = FALSE;
                break;

            default:
                printf("Wrong choice\n");
                break;
        }
    }
    printf("\nTerminating Pattern prinnting Application....\n");
    return 0;
}
```