East West University

Department of Computer science and Engineering

Course Code: CSE103- Structured Programming (LAB)

Section No: 03

Lab Assignment: 04

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Lab4Task1_080.c

```c
#include<stdio.h>

int main()
{
    int i, n;

    printf("Enter the size of the array: ");
    scanf("%d", &n);

    int squares[n];

    for(i=0; i<n; i++){
        squares[i] = i*i;
    }

    for(i=0; i<n; i++){
        printf("%d ", squares[i]);
    }
    return 0;
}
```

```
"D:\EWU Books And Files\10th Semester\CSE 103\Lab4\Lab4Task1_080.exe"
9 1444 1521 1600 1681 1764 1849 1936 2025 2116 2209 2304 2401 2500 2601
 2704 2809 2916 3025 3136 3249 3364 3481 3600 3721 3844 3969 4096 4225
4356 4489 4624 4761 4900 5041 5184 5329 5476 5625 5776 5929 6084 6241 6
400 6561 6724 6889 7056 7225 7396 7569 7744 7921 8100 8281 8464 8649 88
36 9025 9216 9409 9604 9801 10000
Process returned 0 (0x0)   execution time : 2.895 s
Press any key to continue.
```

Lab4Task2_080.c

```c
#include <stdio.h>
int main() {
    int num = 1;

    for (int i = 1; i <= 5; i++) {
        for (int j = 1; j <= i; j++) {
            printf("%d ", num);
            num++;
        }
        printf("\n");
    }
    return 0;
}
```

```
"D:\EWU Books And Files\10th Semester\CSE 103\Lab4\Lab4Task2_080.exe"
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

Process returned 0 (0x0)   execution time : 0.990 s
Press any key to continue.
```

Lab4Task3_080.c

```c
#include <stdio.h>
int main() {
    int n;

    printf("Enter the number of lines: ");
    scanf("%d", &n);

    for (int i = 1; i <= n; i++) {
        for (int j = 1; j <= n; j++) {
            if (j <= n-i) {
                printf(" ");
            } else {
                printf("*");
            }
        }
        printf("\n");
    }
    return 0;
}
```

```
"D:\EWU Books And Files\10th Semester\CSE 103\Lab4\Lab4Task3_080.exe"
Enter the number of lines: 4
   *
  **
 ***
****

Process returned 0 (0x0)   execution time : 2.167 s
Press any key to continue.
```

Lab4Task4_080.c

```c
#include <stdio.h>
int main() {
    int n;
    int total = 0;

    printf("Enter number of subjects: ");
    scanf("%d", &n);

    int marks[n];

    for (int i = 0; i < n; i++) {
        printf("Enter marks for Subject %d: ", i+1);
        scanf("%d", &marks[i]);
        total += marks[i];
    }

    printf("\nReport Card\n-------------\n");
    for (int i = 0; i < n; i++) {
        printf("Subject %d: %d\n", i+1, marks[i]);
    }
    printf("-------------\nTotal: %d\n", total);

    return 0;
}
```

```
"D:\EWU Books And Files\10th Semester\CSE 103\Lab4\Lab4Task4_080.exe"
Enter number of subjects: 3
Enter marks for Subject 1: 70
Enter marks for Subject 2: 80
Enter marks for Subject 3: 90

Report Card
-------------
Subject 1: 70
Subject 2: 80
Subject 3: 90
-------------
Total: 240

Process returned 0 (0x0)   execution time : 9.539 s
Press any key to continue.
```

Lab4Task5_080.c

```c
#include <stdio.h>

int main() {
    int n;
    float total = 0.0;

    printf("Enter number of products: ");
    scanf("%d", &n);

    float price[n], quantity[n], product_total[n];

    for (int i = 0; i < n; i++) {
        printf("Enter price and quantity of product %d: ", i+1);
        scanf("%f %f", &price[i], &quantity[i]);
        product_total[i] = price[i] * quantity[i];
        total += product_total[i];
    }

    printf("\nMoney Receipt\n----------------\n");
    for (int i = 0; i < n; i++) {
        printf("Product %d: %.1f\n", i+1, product_total[i]);
    }
    printf("----------------\nTotal: %.1f\n", total);

    return 0;
}
```

```
"D:\EWU Books And Files\10th Semester\CSE 103\Lab4\Lab4Task5_080.exe"
Enter number of products: 3
Enter price and quantity of product 1: 300.0
3
Enter price and quantity of product 2: 200.5
2
Enter price and quantity of product 3: 100.0
1

Money Receipt
----------------
Product 1: 900.0
Product 2: 401.0
Product 3: 100.0
----------------
Total: 1401.0

Process returned 0 (0x0)   execution time : 452.341 s
Press any key to continue.
```

Lab4Task6_080.c

```c
#include <stdio.h>
#include <string.h>

int main() {
    char str[100];
    int len;

    printf("Enter a string: ");
    scanf("%s", str);

    len = strlen(str);

    printf("Reverse of the string: ");
    for (int i = len - 1; i >= 0; i--) {
        printf("%c", str[i]);
    }
    printf("\n");

    return 0;
}
```

```
"D:\EWU Books And Files\10th Semester\CSE 103\Lab4\Lab4Task6_080.exe"
Enter a string: hasan
Reverse of the string: nasah

Process returned 0 (0x0)   execution time : 7.319 s
Press any key to continue.
```

Lab4Task7_080.c

```c
#include <stdio.h>

int main() {
    int temperature[5][7] = {
        {30, 29, 31, 32, 29, 28, 33},
        {35, 30, 23, 27, 21, 30, 37},
        {28, 31, 25, 26, 24, 29, 32},
        {33, 27, 26, 28, 29, 24, 29},
        {26, 26, 28, 26, 20, 27, 31}
    };

    float cityAvg[5];
    for (int i = 0; i < 5; i++) {
        int sum = 0;
        for (int j = 0; j < 7; j++) {
            sum += temperature[i][j];
        }
        cityAvg[i] = (float) sum / 7;
    }

    printf("Average temperature of each city:\n");
    for (int i = 0; i < 5; i++) {
        printf("City %d: %.2f\n", i+1, cityAvg[i]);
    }
    printf("\n");

    float dayAvg[7];
    for (int j = 0; j < 7; j++) {
        int sum = 0;
        for (int i = 0; i < 5; i++) {
            sum += temperature[i][j];
        }
        dayAvg[j] = (float) sum / 5;
    }

    printf("Average temperature of each day:\n");
    for (int j = 0; j < 7; j++) {
        printf("Day %d: %.2f\n", j+1, dayAvg[j]);
```

Lab4Task7_080.c

```c
    }

    printf("Average temperature of each day:\n");
    for (int j = 0; j < 7; j++) {
        printf("Day %d: %.2f\n", j+1, dayAvg[j]);
    }
    printf("\n");

    float maxCityAvg = cityAvg[0];
    int maxCityIndex = 0;
    for (int i = 1; i < 5; i++) {
        if (cityAvg[i] > maxCityAvg) {
            maxCityAvg = cityAvg[i];
            maxCityIndex = i;
        }
    }
    printf("Maximum average temperature among all cities: %.2f (City %d)\n", maxCityAvg, maxCityIndex+1);

    float minCityAvg = cityAvg[0];
    int minCityIndex = 0;
    for (int i = 1; i < 5; i++) {
        if (cityAvg[i] < minCityAvg) {
            minCityAvg = cityAvg[i];
            minCityIndex = i;
        }
    }
    printf("Minimum average temperature among all cities: %.2f (City %d)\n", minCityAvg, minCityIndex+1);

    float maxDayAvg = dayAvg[0];
    int maxDayIndex = 0;
    for (int j = 1; j < 7; j++) {
        if (dayAvg[j] > maxDayAvg) {
            maxDayAvg = dayAvg[j];
            maxDayIndex = j;
        }
    }
    printf("Maximum average temperature among all days: %.2f (Day %d)\n", maxDayAvg, maxDayIndex+1);
```

*Lab4Task7_080.c

```c
    float minDayAvg = dayAvg[0];
    int minDayIndex = 0;
    for (int j = 1; j < 7; j++) {
        if (dayAvg[j] < minDayAvg) {
            minDayAvg = dayAvg[j];
            minDayIndex = j;
        }
    }
    printf("Minimum average temperature among all days: %.2f (Day %d)\n", minDayAvg, minDayIndex+1);
    int highestTemp = temperature[0][0];
    int highestCityIndex = 0;
    int highestDayIndex = 0;
    for (int i = 0; i < 5; i++) {
        for (int j = 0; j < 7; j++) {
            if (temperature[i][j] > highestTemp) {
                highestTemp = temperature[i][j];
                highestCityIndex = i;
                highestDayIndex = j;
            }
        }
    }
    printf("Highest temperature among all cities on all days: %d (City %d, Day %d)\n", highestTemp, highestCityIndex+1, highestDayIndex+1);
    int lowestTemp = temperature[0][0];
    int lowestCityIndex = 0;
    int lowestDayIndex = 0;
    for (int i = 0; i < 5; i++) {
        for (int j = 0; j < 7; j++) {
            if (temperature[i][j] < lowestTemp) {
                lowestTemp = temperature[i][j];
                lowestCityIndex = i;
                lowestDayIndex = j;
            }
        }
    }
    printf("Lowest temperature among all cities on all days: %d (City %d, Day %d)\n", lowestTemp, lowestCityIndex+1, lowestDayIndex+1);
    return 0;
}
```

```
hestCityIndex = 0;
hestDayIn
t i = 0;
 (int j
 if (tem
     hig
     hig
     hig
 }

"Highest
estTemp
estCityI
estDayIn
t i = 0;
 (int j
 if (tem
     low
     low
     low
 }
```

```
"D:\EWU Books And Files\10th Semester\CSE 103\Lab4\Lab4Task7_080.exe"
Average temperature of each city:
City 1: 30.29
City 2: 29.00
City 3: 27.86
City 4: 28.00
City 5: 26.29

Average temperature of each day:
Day 1: 30.40
Day 2: 28.60
Day 3: 26.60
Day 4: 27.80
Day 5: 24.60
Day 6: 27.60
Day 7: 32.40

Maximum average temperature among all cities: 30.29 (City 1)
Minimum average temperature among all cities: 26.29 (City 5)
Maximum average temperature among all days: 32.40 (Day 7)
Minimum average temperature among all days: 24.60 (Day 5)
Highest temperature among all cities on all days: 37 (City 2, Day 7)
Lowest temperature among all cities on all days: 20 (City 5, Day 5)

Process returned 0 (0x0)   execution time : 1.470 s
Press any key to continue.
```