

Lecture 4 Assignment

1.

```
1 #include <stdio.h>
2
3 int main(void)
4 {
5     {
6     int i;
7     i = 1;
8     while (i <= 128) {
9         printf("%d ", i);
10        i *= 2;
11    }
12    return 0;
13 }
14 }
```

```
1 2 4 8 16 32 64 128
Process returned 0 (0x0)   execution time : 0.016 s
Press any key to continue.
```

2. Letter C

```
#include <stdio.h>

int main (void)
{
    int i;

    i = 1;

    //while Loop
    while (i < 10){
        printf ("\nWhile: [%d]", i);
        i++;
    }

    //do-while Loop
    do{
        printf ("\nDo-While:[%d]", i);
        i++;
    }while (i < 10);

    //for Loop
    for (i = 1; i < 10; i++){

        printf ("\nFor: [%d]", i);
    }
}
```

Sample Output:

```
"C:\Users\Perse\Documents\CMSC 21\Lecture 4\as2.exe"
While: [1]
While: [2]
While: [3]
While: [4]
While: [5]
While: [6]
While: [7]
While: [8]
While: [9]
Do-While:[10]
For: [1]
For: [2]
For: [3]
For: [4]
For: [5]
For: [6]
For: [7]
For: [8]
For: [9]
Process returned 9 (0x9)   execution time : 0.016 s
Press any key to continue.
```

3.

```
as3.c
#include <stdio.h>

int main (void)
{
    int i;

    for (i = 1; i <=128; i *=2){
        printf (" %d", i);
    }

    return 0;
}
```

Output:

```
"C:\Users\Perse\Documents\CMSC 21\Lecture 4\as3.exe"
1 2 4 8 16 32 64 128
Process returned 0 (0x0)   execution time : 0.016 s
Press any key to continue.
```

4.

```
1 //Program that computers for the power of two
2
3 #include <stdio.h>
4
5 int main (void){
6
7     //declare variables
8     int i, exponent, result;
9
10    //ask user to input values for the power of two
11    printf ("Enter exponent value: ");
12    scanf ("%d", &exponent);
13
14    //initialize values
15    i = 1;
16    result = 1;
17
18    /*2 is the base number while the
19     value the user entered will be the
20     exponent*/
21    while (i <= exponent){
22        result *= 2;
23        i++;
24    }
25
26    //display result
27    printf ("Result: %d", result);
28 }
29
30
```

Sample Output:

```
"C:\Users\Perse\Documents\CMSC 21\Lecture 4\as4.exe"
Enter value: 10
Result: 1024
Process returned 12 (0xC)    execution time : 4.454 s
Press any key to continue.
```

5.

```
as2.c as3.c as4.c as5.c
1 //Program that displays one-month calendar
2
3 #include <stdio.h>
4
5 int main (void){
6
7     //declare variables
8     int i, days, first_day;
9
10    /*ask user to input desired number of days
11     if the user inputs values less than 28
12     and greater than 31, the input will be invalid*/
13
14    printf ("Enter number of days in month: ");
15    scanf("%d", &days);
16
17    if (days <= 31 && days >= 28){
18
19        /*If the input is valid, then ask the user to
20         choose the starting day of the week*/
21
22        printf ("Enter the starting day of the week (1 = Sun, 7 = Sat): ");
23        scanf("%d", &first_day);
24
25        /*if the user inputs values less than 1
26         and greater than 7, the input will
27         be invalid*/
28
29        if (first_day < 7 && first_day > 0){
30
31            //pad the first line
32            for (i =1; i < first_day; i++){
33                printf (" ");
34            }
35
36            //for each day in the month
37            for (i = 1; i <= days; i++){
38
39                //display output
40                printf("%3d", i);
41
42                /*increment the day of the week and
43                 if the day of the week is zero
44                 then it will start a new line*/
45                if ((first_day + i -1)%7 ==0)
46                    printf("\n");
47            }
48            return 0;
49        }
50        else
51            printf("Invalid Input");
52    }
53    else
54        printf ("Invalid Input");
55 }
56
```

Sample Output:

```
"C:\Users\Perse\Documents\CMSC 21\Lecture 4\as5.exe"
Enter number of days in month: 30
Enter the starting day of the week (1 = Sun, 7 = Sat): 6
      1  2
  3  4  5  6  7  8  9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

Process returned 0 (0x0)   execution time : 24.541 s
Press any key to continue.
```

GitHub Link:

<https://github.com/purseerus/CMSC-21>