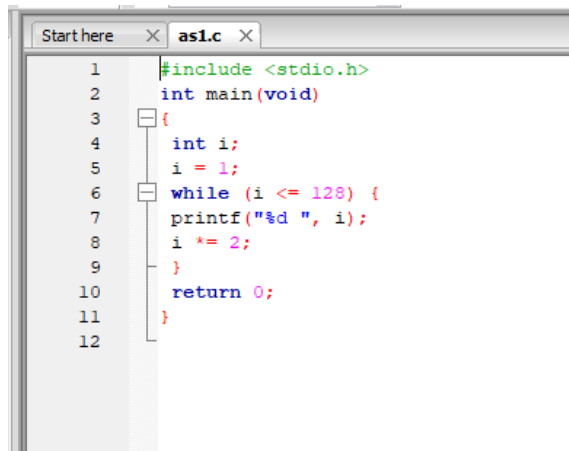


Lecture 4 Assignment

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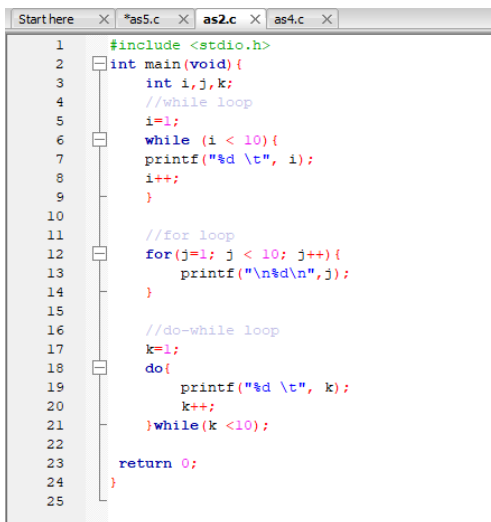
CMSC 21-1

1. The output for the program is: **1 2 4 8 16 32 64 128**



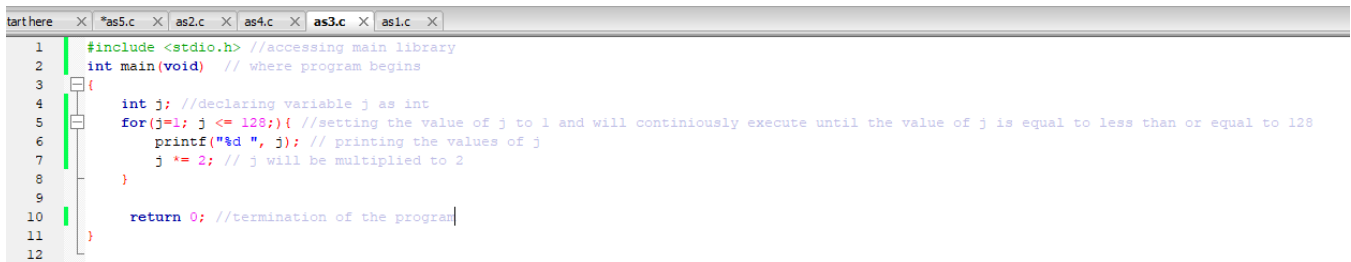
```
1  #include <stdio.h>
2  int main(void)
3  {
4      int i;
5      i = 1;
6      while (i <= 128) {
7          printf("%d ", i);
8          i *= 2;
9      }
10     return 0;
11 }
12
```

2. None. They all have the same outputs even though we've used the while, for, and do-while loop. This is because all of them are functionally equivalent as long as they will have the same body.



```
1  #include <stdio.h>
2  int main(void){
3      int i,j,k;
4      //while loop
5      i=1;
6      while (i < 10){
7          printf("%d \t", i);
8          i++;
9      }
10
11     //for loop
12     for(j=1; j < 10; j++){
13         printf("\n%d\n",j);
14     }
15
16     //do-while loop
17     k=1;
18     do{
19         printf("%d \t", k);
20         k++;
21     }while(k <10);
22
23     return 0;
24 }
25
```

- 3.



```
1  #include <stdio.h> //accessing main library
2  int main(void) // where program begins
3  {
4      int j; //declaring variable j as int
5      for(j=1; j <= 128;){ //setting the value of j to 1 and will continuously execute until the value of j is equal to less than or equal to 128
6          printf("%d ", j); // printing the values of j
7          j *= 2; // j will be multiplied to 2
8      }
9
10     return 0; //termination of the program
11 }
12
```

4.

```

Starthere x as5.c x as2.c x as4.c x
1  #include <stdio.h> //accessing the library
2  int main(void){ //where the program begins
3      int i,a; //declaring variables before using
4      a=1; //setting the value of a to 1
5
6      //giving the title and user's guide for the program
7      printf("TABLE OF POWERS OF TWO \n");
8      printf("\n n \t 2 to the n ");
9      printf("\n --- \t ----- ");
10
11     for(i=0; i <= 10; i++){ //the loop will continuously execute until the value of i is 10
12         if (i == 0) // if the value of i is 0, the answer will be 1
13             a = 1;
14         else //if not, the value of a will be multiplied by itself
15             a *= 2;
16
17         printf("\n %d \t %d", i, a); //printing the values of i with their power of 2
18     }
19
20     return 0; //termination of the program
21
22 }
23

```

5.

```

Starthere x as5.c x as2.c x
1  #include <stdio.h> //accessing the main library
2  int main(){ //start of the main program
3      int i,day,monthday,j=1; // declaring variables as int
4
5      printf("Enter number of days in a month: \n"); //user's guide to input number of days in a month
6      scanf("%d",&monthday); //answer will be stored in monthday
7
8      printf("Enter the number for the first day of the month: \n"); //user's guide to input first day of the month
9      printf("0.Sunday\n1.Monday\n2.Tuesday\n3.Wednesday\n4.Thursday\n5.Friday\n6.Saturday\n"); //choices of answers
10     scanf("%d",&day); //answer will be stored in day
11
12     for(i = day; i > 0; i-- ) //to have space before the user's input for "day"
13     { // if the user entered 0, it means that there will be no space before it
14         printf("\t"); // if 1, then there will be a space before it and so on
15     }
16
17     while(j <= monthday) //will execute as long as j is less than or equal to monthday
18     {
19         if(day % 7 == 0){ // to make the calendar to have seven days per week
20             printf("\n"); // every line will only have 7 spaces/numbers
21         }
22
23         printf("%d \t",j); // will print the value of j starting from 1 until the user's input in monthday
24         j++; //incrementing values of j
25         day++; //incrementing values of day to execute the 7 numbers per line or per week in the calendar
26     }
27     return 0; //termination of the program
28 }
29

```

6.