

# Data Structures using C

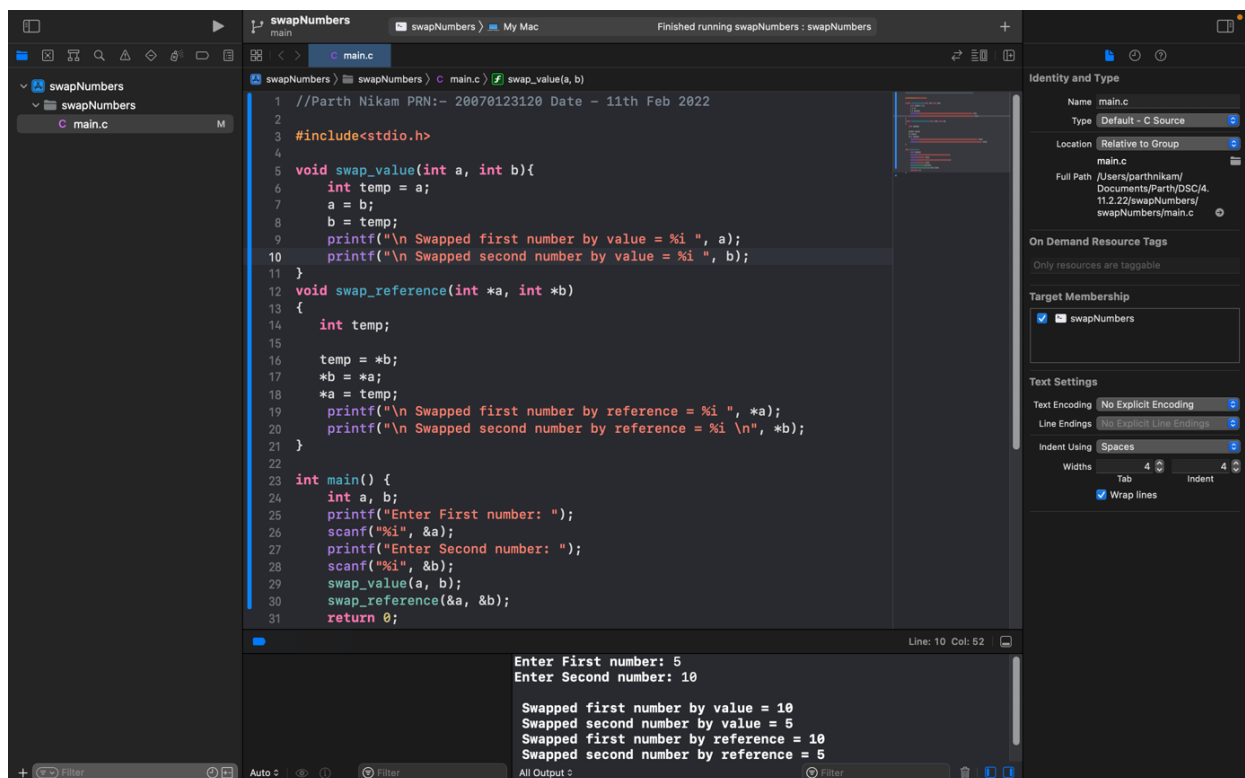
4<sup>th</sup> Feb 2022

Parth Nikam  
20070123120  
E&TC – B3

Aim: - Practice control systems, for loop, sum of m and n, vowelCheck, while loop etc.

Objective: - To perform the given tasks.

Screenshot: -



The screenshot shows a Visual Studio Code editor with a C program named 'swapNumbers'. The program is in a file named 'main.c' and contains the following code:

```
1 //Parth Nikam PRN:- 20070123120 Date ~ 11th Feb 2022
2
3 #include<stdio.h>
4
5 void swap_value(int a, int b){
6     int temp = a;
7     a = b;
8     b = temp;
9     printf("\n Swapped first number by value = %i ", a);
10    printf("\n Swapped second number by value = %i ", b);
11 }
12 void swap_reference(int *a, int *b)
13 {
14     int temp;
15
16     temp = *b;
17     *b = *a;
18     *a = temp;
19     printf("\n Swapped first number by reference = %i ", *a);
20     printf("\n Swapped second number by reference = %i \n", *b);
21 }
22
23 int main() {
24     int a, b;
25     printf("Enter First number: ");
26     scanf("%i", &a);
27     printf("Enter Second number: ");
28     scanf("%i", &b);
29     swap_value(a, b);
30     swap_reference(&a, &b);
31     return 0;
32 }
```

The output of the program is displayed in the bottom panel:

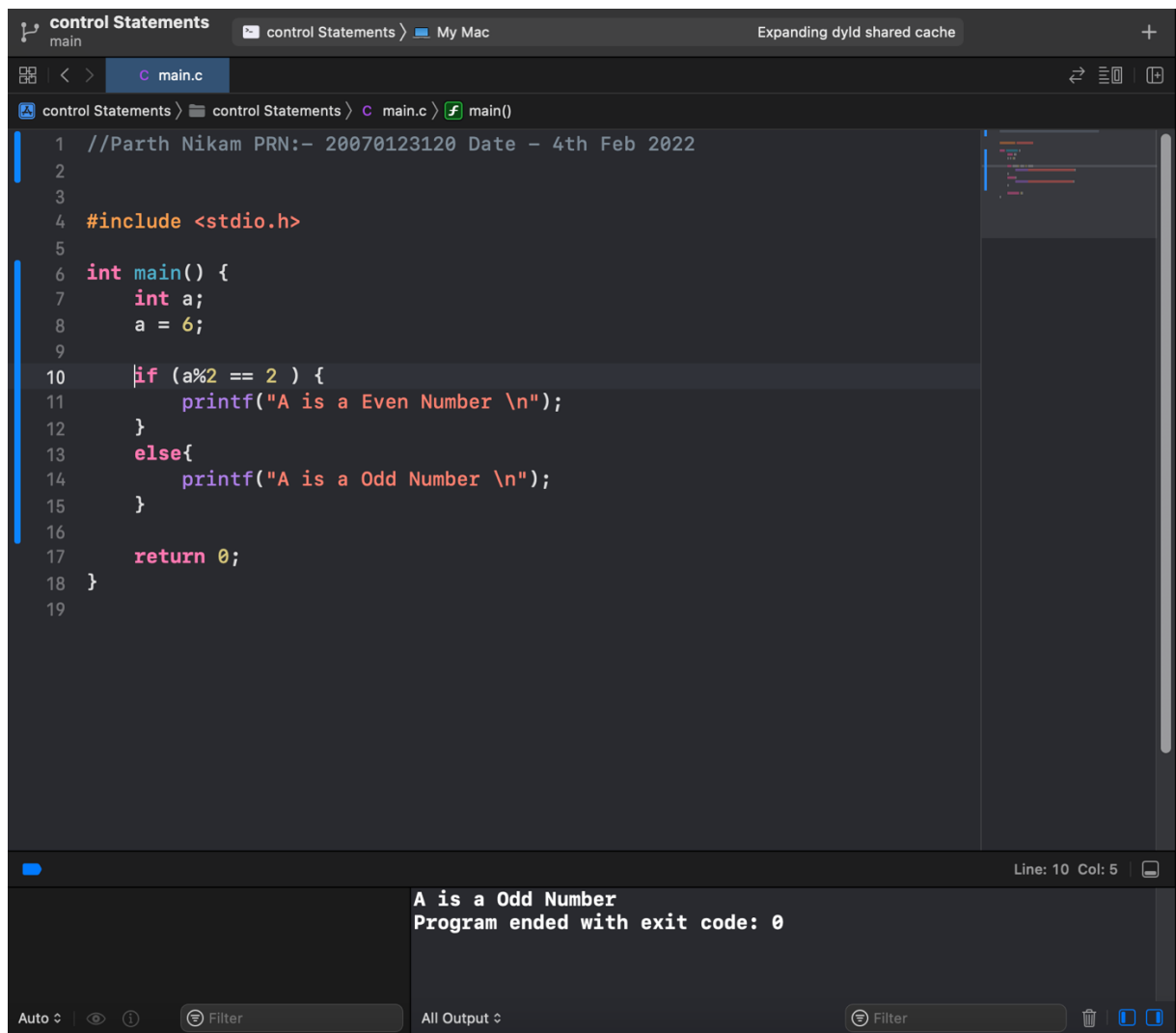
```
Enter First number: 5
Enter Second number: 10

Swapped first number by value = 10
Swapped second number by value = 5
Swapped first number by reference = 10
Swapped second number by reference = 5
```

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4<sup>th</sup> Feb 2022

Parth Nikam  
20070123120  
E&TC – B3



```
control Statements
main
control Statements > My Mac
Expanding dyld shared cache
main.c
control Statements > control Statements > main.c > main()
1 //Parth Nikam PRN:- 20070123120 Date - 4th Feb 2022
2
3
4 #include <stdio.h>
5
6 int main() {
7     int a;
8     a = 6;
9
10    if (a%2 == 2 ) {
11        printf("A is a Even Number \n");
12    }
13    else{
14        printf("A is a Odd Number \n");
15    }
16
17    return 0;
18 }
19
Line: 10 Col: 5
A is a Odd Number
Program ended with exit code: 0
Auto Filter All Output Filter
```

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The image shows a code editor window with a C program and its execution output. The code is a vowel checker that prompts the user to enter a character. If the character is 'A' or 'a', it prints "The enter character is a Vowel". Otherwise, it prints "The entered character is not a vowel". The program ends with an exit code of 0.

```
1 //Parth Nikam PRN:- 20070123120 Date - 4th Feb 2022
2
3
4 #include <stdio.h>
5
6 int main() {
7
8     char ch;
9     printf("Enter a Character \n");
10    scanf("%c",&ch);
11
12    switch (ch) {
13        case 'A':
14        case 'a':
15        printf("The enter character is a Vowel \n %c",ch);
16        break;
17
18        default:
19            printf("The entered character is not a vowel %c",ch);
20    }
21
22    return 0;
23 }
24
```

Enter a Character  
A  
The enter character is a Vowel  
AProgram ended with exit code: 0

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```
1 //Parth Nikam PRN:- 20070123120 Date - 4th Feb 2022
2
3
4 #include <stdio.h>
5
6 int main() {
7
8     int i = 1;
9     while (i<=10) {
10         printf("\n %i",i);
11         i += 1;
12     }
13     return 0;
14 }
15
```

```
1
2
3
4
5
6
7
8
9
10
Program ended with exit code: 0
```

```
1 //Parth Nikam PRN:- 20070123120 Date - 4th Feb 2022
2
3
4 #include <stdio.h>
5
6 int main() {
7
8     int i = 1;
9     do{
10         printf("\n %i", i);
11         i+=1;
12     }
13     while (i<=10);
14     return 0;
15 }
16
17
18
```

```
1
2
3
4
5
6
7
8
9
10
Program ended with exit code: 0
```

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```
1 //Parth Nikam PRN:- 20070123120 Date - 4th Feb 2022
2
3
4 #include <stdio.h>
5
6 int main() {
7
8     int i, n;
9     printf("\n Enter the value of n :");
10    scanf("%d", &n);
11    for (i=1; i<=n; i++)
12        printf("\n %d", i);
13
14 }
15
16
17
```

Enter the value of n : 6

1  
2  
3  
4  
5  
6Program ended with exit code: 0

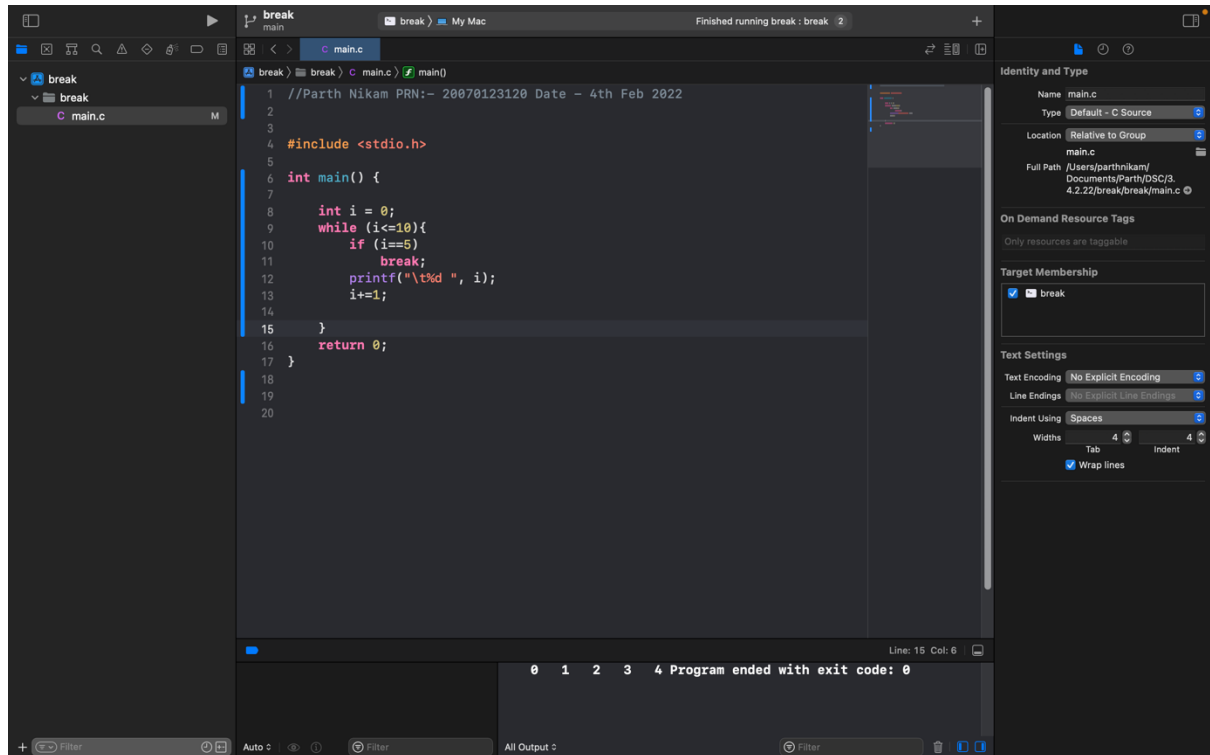
```
1 //Parth Nikam PRN:- 20070123120 Date - 4th Feb 2022
2
3
4 #include <stdio.h>
5
6 int main() {
7
8     int i;
9     for (i=0; i<=10; i++){
10         if (i==5)
11             continue;
12         printf("\t%d ", i);
13     }
14     return 0;
15 }
16
17
18
```

0 1 2 3 4 6 7 8 9 10 Program ended with exit code: 0

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```
1 //Parth Nikam PRN:- 20070123120 Date - 4th Feb 2022
2
3
4 #include <stdio.h>
5
6 int main() {
7
8     int i = 0;
9     while (i<=10){
10         if (i==5)
11             break;
12         printf("\t%d ", i);
13         i+=1;
14     }
15 }
16 return 0;
17 }
18
19
20
```

0 1 2 3 4 Program ended with exit code: 0

Result: - The given tasks were performed successfully.