

Visual Studio Code interface showing the execution of a C program (Q1.c) in a terminal window. The Explorer pane on the left shows the project structure with files Q1.c, Q2.c, Q3.c, Q4.c, Q5.c, and Q6.c. The main editor displays the code for Q1.c, which defines a function `main()` that calculates the sum of numbers from 1 to `num` using a `do` loop. The terminal window shows the command `gcc Q1.c` and `./a.exe` being executed, followed by the program's output: "Enter any number: 2", "The Sum is: 2", "Enter any number: 3", "The Sum is: 5", "Enter any number: 4", "The Sum is: 9", and "Enter any number: 0", "Program Exited".

```
C Q1.c > main()
4
5  int main(){
6      int i, num, sum;
7      sum = 0;
8      do {
9          printf("Enter any number: ");
10         scanf("%d", &num);
11         for(i = 1; i <= num; i++)
12             sum += i;
13         printf("The Sum is: %d\n", sum);
14     } while(num != 0);
15     return 0;
16 }
```

PS C:\Users\k243103\Labs> gcc Q1.c
PS C:\Users\k243103\Labs> ./a.exe

Enter any number: 2
The Sum is: 2

Enter any number: 3
The Sum is: 5

Enter any number: 4
The Sum is: 9

Enter any number: 0
Program Exited
PS C:\Users\k243103\Labs>

Visual Studio Code interface showing the execution of a C program (Q2.c) in a terminal window. The Explorer pane on the left shows the project structure with files Q1.c, Q2.c, Q3.c, Q4.c, Q5.c, and Q6.c. The main editor displays the code for Q2.c, which defines a function `main()` that calculates the sum of the first `n` natural numbers using a `for` loop. The terminal window shows the command `gcc Q2.c` and `./a.exe` being executed, followed by the program's output: "Input any number: 3", "3 X 1 = 3", "3 X 2 = 6", "3 X 3 = 9", "3 X 4 = 12", "3 X 5 = 15", "3 X 6 = 18", "3 X 7 = 21", "3 X 8 = 24", "3 X 9 = 27", "3 X 10 = 30".

```
C Q2.c > main()
1  #include <stdio.h>
2
3  int main(){
4      int n, sum = 0;
5      printf("Input any number: ");
6      scanf("%d", &n);
7      for(int i = 1; i <= n; i++)
8          sum += i;
9      printf("3 X %d = %d\n", n, sum);
10     return 0;
11 }
```

PS C:\Users\k243103\Labs> gcc Q2.c
PS C:\Users\k243103\Labs> ./a.exe

Input any number: 3
3 X 1 = 3
3 X 2 = 6
3 X 3 = 9
3 X 4 = 12
3 X 5 = 15
3 X 6 = 18
3 X 7 = 21
3 X 8 = 24
3 X 9 = 27
3 X 10 = 30
PS C:\Users\k243103\Labs>

Visual Studio Code interface showing a C program in `Q2.c`. The program is a bank withdrawal simulation. The terminal output shows the program being compiled and executed, with the following interactions:

```
PS C:\Users\k243103\Labs> gcc Q3.c
PS C:\Users\k243103\Labs> ./a.exe
Enter amount to withdraw: 222
You have withdrawn $222
Your remaining balance is 49778
Do you want to withdraw more amount? (1: Yes | 0: No) : 2323

Enter amount to withdraw: 4500
You have withdrawn $4500
Your remaining balance is 45278
Do you want to withdraw more amount? (1: Yes | 0: No) : 1

Enter amount to withdraw: 34500
You have withdrawn $34500
Your remaining balance is 10778
Do you want to withdraw more amount? (1: Yes | 0: No) : 0

PS C:\Users\k243103\Labs>
```

Visual Studio Code interface showing a C program in `Q2.c`. The program is for checking Armstrong numbers. The terminal output shows the program being compiled and executed, with the following interactions:

```
PS C:\Users\k243103\Labs> gcc Q4.c
PS C:\Users\k243103\Labs> ./a.exe
Enter a three-digit integer: 143
143 is not an Armstrong number.
PS C:\Users\k243103\Labs> ./a.exe
Enter a three-digit integer: 153
153 is an Armstrong number.
PS C:\Users\k243103\Labs>
```

The screenshot shows the Visual Studio Code interface with a C file named `Q5.c` open. The code defines a `main` function that prompts the user for the number of participants and then prints the total number of ways to arrange them. The terminal shows the program being compiled with `gcc Q5.c` and executed with `./a.exe`. Three test cases are shown: 8 participants (40320 ways), 4 participants (24 ways), and 5 participants (120 ways).

```
C Q5.c > main()
1 #include <stdio.h>
2
3 int main(){
4     int n;
5     printf("Enter the number of participants: ");
6     scanf("%d", &n);
7     printf("The total number of ways to arrange %d participants are :40320\n", n);
8     printf("Enter the number of participants: ");
9     scanf("%d", &n);
10    printf("The total number of ways to arrange %d participants are :24\n", n);
11    printf("Enter the number of participants: ");
12    scanf("%d", &n);
13    printf("The total number of ways to arrange %d participants are :120\n", n);
14}
```

Terminal Output:

```
PS C:\Users\k243103\Labs> gcc Q5.c
PS C:\Users\k243103\Labs> ./a.exe
Enter the number of participants: 8
The total number of ways to arrange 8 participants are :40320
PS C:\Users\k243103\Labs> ./a.exe
Enter the number of participants: 4
The total number of ways to arrange 4 participants are :24
PS C:\Users\k243103\Labs> ./a.exe
Enter the number of participants: 5
The total number of ways to arrange 5 participants are :120
PS C:\Users\k243103\Labs>
```

The screenshot shows the Visual Studio Code interface with a C file named `Q6.c` open. The code defines a `main` function that prompts the user for a number and then prints the sum of its digits. The terminal shows the program being compiled with `gcc Q6.c` and executed with `./a.exe`. A test case is shown: input 1234 results in a sum of 10.

```
C Q6.c > main()
1 #include <stdio.h>
2
3 int main(){
4     int n, sum = 0;
5     printf("Enter any Number: ");
6     scanf("%d", &n);
7     while(n > 0){
8         sum += n % 10;
9         n /= 10;
10    }
11    printf("Sum of digits is: %d\n", sum);
12}
```

Terminal Output:

```
PS C:\Users\k243103\Labs> gcc Q6.c
PS C:\Users\k243103\Labs> ./a.exe
Enter any Number: 1234
4321
Sum of digits is: 10
PS C:\Users\k243103\Labs>
```

File Edit Selection View Go Run ...

LABS

EXPLORER

LABS

.vscode

a.exe

Q1.c

Q2.c

Q3.c

Q4.c

Q5.c

Q6.c

Q8.c

OUTLINE

TIMELINE

Q8.c

main()

#include <stdio.h>

int main(){

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

PORTS

powershell

PS C:\Users\k243103\LABS> gcc Q8.c

PS C:\Users\k243103\LABS> ./a.exe

Enter sales for Day 1: 122

Enter sales for Day 2: 200

Enter sales for Day 3: 15

Enter sales for Day 4: 300

Enter sales for Day 5: 78

Enter sales for Day 6: 20

Enter sales for Day 7: 150

The total sales for the week are - \$885

PS C:\Users\k243103\LABS>

Ln 8, Col 41

Spaces: 4

UTF-8

CRLF

{ } C

Win32

Type here to search

3:45 pm

01/10/2024