LAB 3

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Group ‘A’

Question 1

In a subject, the grading criterion is as follows:

GRADES AND MARKS RANGE

A+ >=90
A 80 to 89
B+ 70 to 79
B 60 to 69
C+ 50 to 59
C 40 to 49
D 30 to 39
F <30

WAP which takes your marks as input and then displays your grades as per the rule above.

Code:

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

   printf("Enter score: ");
   scanf("%d",&score);

   if(score>100)

      printf("Should not exceed greater than 100!\n" );

   else{

   switch( score / 10 )
    {

   case 10:

   case 9:
       printf("Grade: A+\n");
       break;

   case 8:
       printf("Grade: A\n");
       break;
```

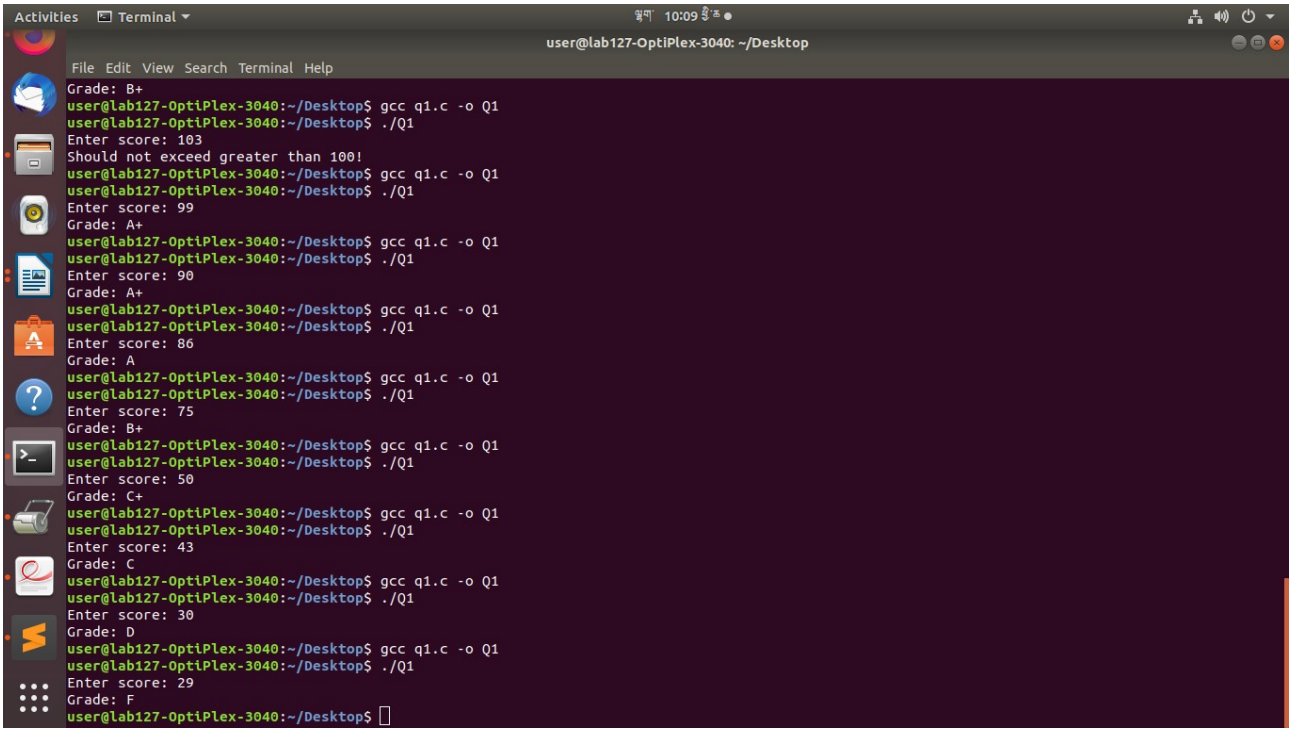
```
    case 7:
        printf("Grade: B+\n");
        break;

    case 6:
        printf("Grade: B\n");
        break;

    case 5:
        printf("Grade: C+\n");
        break;

    case 4:
        printf("Grade: C\n");
        break;

    case 3:
        printf("Grade: D\n");
        break;

    default:
        printf("Grade: F\n");
        break;

     }

    }

     return 0;
}
```

q1.c q2.c q3.c

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

    printf("Enter score: ");
    scanf("%d",&score);

    if(score>100)

        printf("Should not exceed greater than 100!\n" );

    else{

    switch( score / 10 )
     {

    case 10:

    case 9:
         printf("Grade: A+\n");
         break;

    case 8:
         printf("Grade: A\n");
         break;

    case 7:
         printf("Grade: B+\n");
         break;

    case 6:
         printf("Grade: B\n");
         break;
```

```c
    case 5:
         printf("Grade: C+\n");
         break;

    case 4:
         printf("Grade: C\n");
         break;

    case 3:
         printf("Grade: D\n");
         break;

    default:
         printf("Grade: F\n");
         break;

     }

    }

     return 0;
}
```

Output:



Question 2

Write a C program to check whether input alphabet is a vowel or not.

Code:

```
#include <stdio.h>

int main()
{
   char ch;

   /* Input char from user */
   printf("Enter any alphabet: ");
   scanf("%c", &ch);

   /* Switch ch value */
   switch(ch)
   {
      case 'a':
      case 'e':
```

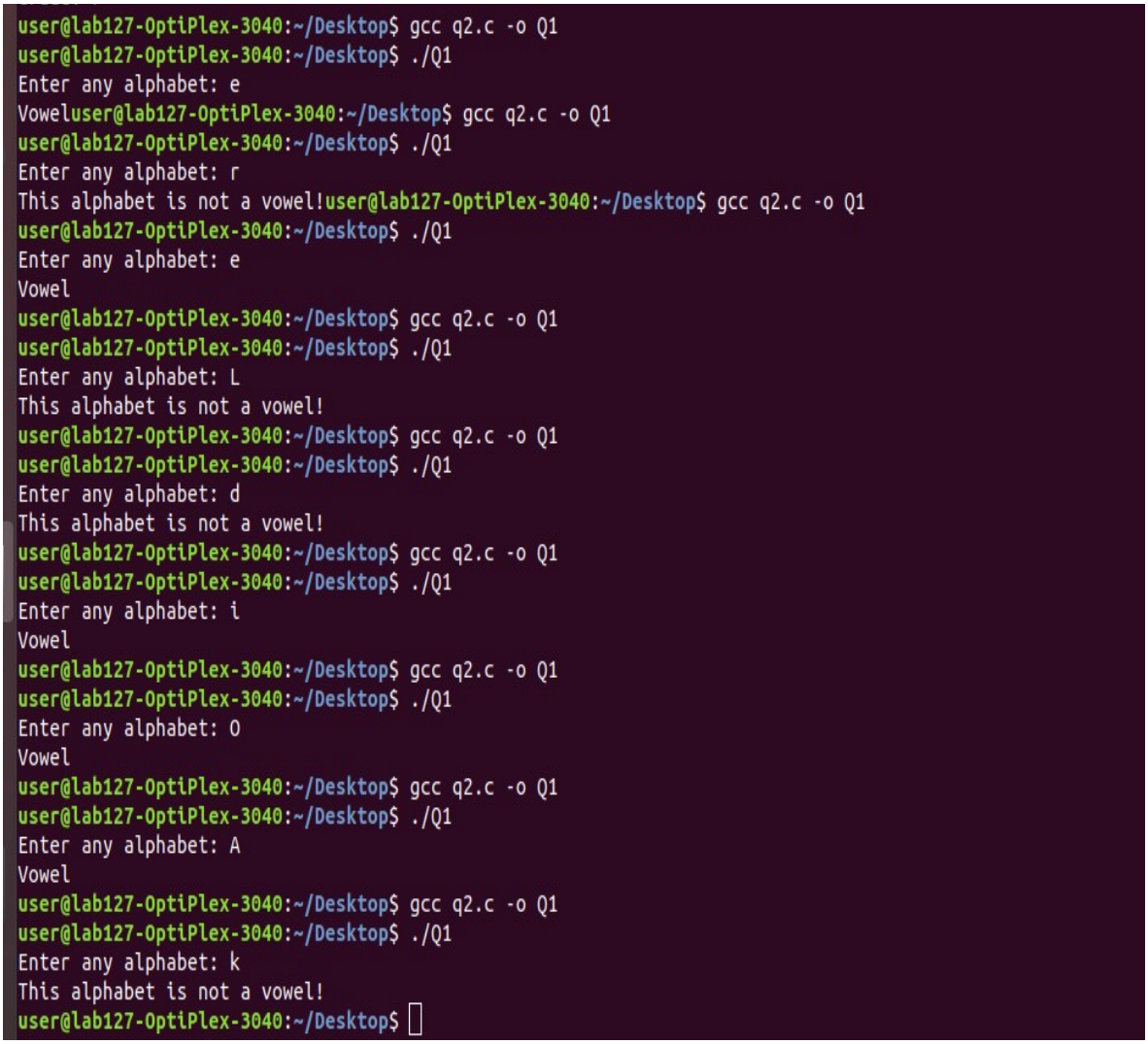
```
        case 'i':
        case 'o':
        case 'u':
        case 'A':
        case 'E':
        case 'I':
        case 'O':
        case 'U':

            printf("Vowel");
            break;

        default: printf("This alphabet is not a vowel!");
    }

    return 0;
}
```

q1.c q2.c q3.c

```c
#include <stdio.h>

int main()
{
    char ch;

    /* Input char from user */
    printf("Enter any alphabet: ");
    scanf("%c", &ch);

    /* Switch ch value */
    switch(ch)
    {
        case 'a':
        case 'e':
        case 'i':
        case 'o':
        case 'u':
        case 'A':
        case 'E':
        case 'I':
        case 'O':
        case 'U':

            printf("Vowel");
            break;

        default: printf("This alphabet is not a vowel!");
    }

    return 0;
}
```

Line 24, Column 9

Output:


user@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: e
Voweluser@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: r
This alphabet is not a vowel!user@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: e
Vowel
user@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: L
This alphabet is not a vowel!
user@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: d
This alphabet is not a vowel!
user@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: i
Vowel
user@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: O
Vowel
user@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: A
Vowel
user@lab127-OptiPlex-3040:~/Desktop$ gcc q2.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Enter any alphabet: k
This alphabet is not a vowel!
user@lab127-OptiPlex-3040:~/Desktop$

Question 3

Write a program to maintain a bank account using switch. First ask the account holder to deposit the initial amount in the account, then give options to the holder for credit, debit, balance inquiry. Check that the balance should not be less than Nu. 1000.

Code:

```
#include <stdio.h>
int main()
{
	/* code */
	int initial_amount;
	int option;
	int Balance;
	int Credit;
	int Debit;

	printf("Enter the initial amount: \n");
	scanf("%d", &initial_amount);


	if(initial_amount >= 1000){
		printf("Choose the option given below: \n");
		printf("1. Credit\n");
		printf("2. Debit\n");
		printf("3. Balance Enquiry.\n");
		scanf("%d", &option);


	switch(option){
		case 1:

			printf("Enter the amount to be credited: \n" );
			scanf("%d", &Credit);

		printf("You have sucessfullay credited the amount: %d\n", Credit );
		int total = initial_amount + Credit;
		printf("Now your amount is:  %d\n", total);

		break;

		case 2:
```

```
            printf("Enter the amount to be debited: \n" );
            scanf("%d", &Debit);



            if(Debit < initial_amount){

                  int balance = initial_amount - Debit;
                  printf("Now your balance is:  %d\n", balance);

            }

            else {
                  printf("insufficient balance\n");
            }

            break;

            case 3:

            printf("To perform transaction,you have: %d\n", initial_amount);

            break;

            default:
            printf("Enter the correct option\n");
      }
      }
      else {

            printf("insufficient amount\n" );
      }

}
```

q1.c q2.c q3.c

```c
#include <stdio.h>
int main()
{
    /* code */
    int initial_amount;
    int option;
    int Balance;
    int Credit;
    int Debit;

    printf("Enter the initial amount: \n");
    scanf("%d", &initial_amount);


    if(initial_amount >= 1000){
        printf("Choose the option given below: \n");
        printf("1. Credit\n");
        printf("2. Debit\n");
        printf("3. Balance Enquiry.\n");
        scanf("%d", &option);


    switch(option){
        case 1:

            printf("Enter the amount to be credited: \n" );
            scanf("%d", &Credit);

        printf("You have sucessfullay credited the amount: %d\n", Credit );
        int total = initial_amount + Credit;
        printf("Now your amount is:  %d\n", total);

        break;
```

```c
        case 2:

        printf("Enter the amount to be debited: \n" );
        scanf("%d", &Debit);



        if(Debit < initial_amount){

            int balance = initial_amount - Debit;
            printf("Now your balance is:  %d\n", balance);

        }

        else {
            printf("insufficient balance\n");
        }

        break;

        case 3:

        printf("To perform transaction,you have: %d\n", initial_amount);

        break;

        default:
        printf("Enter the correct option\n");
    }
    }
    else {

        printf("insufficient amount\n" );
    }

}
```

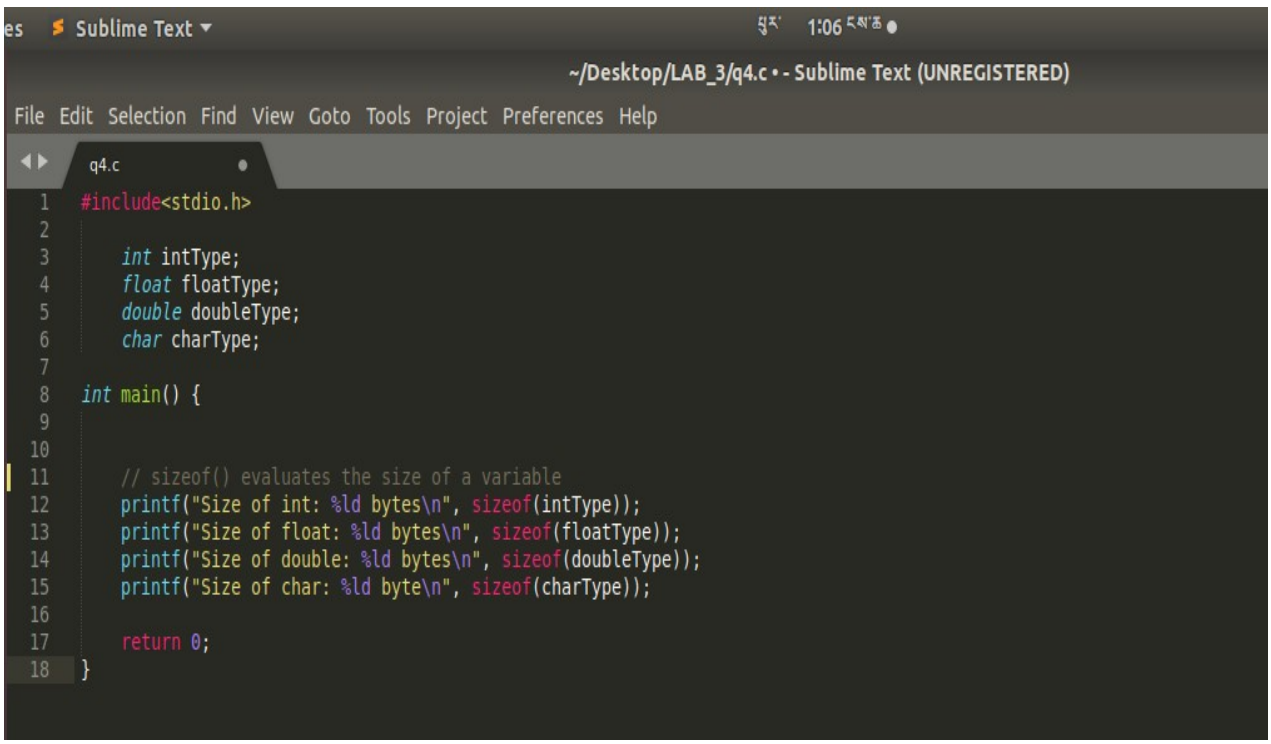
Line 70, Column 2

Question 4

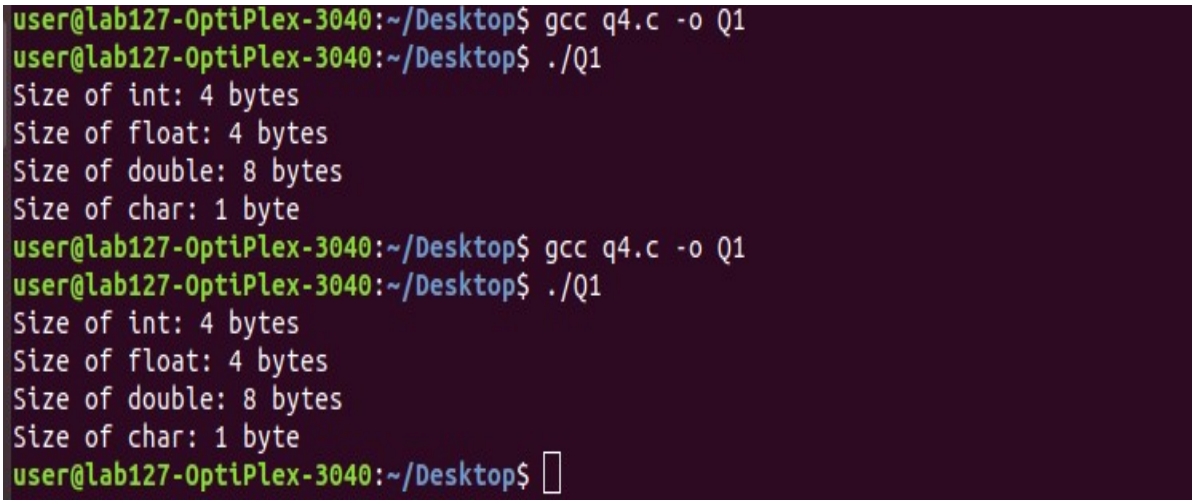
Find out how many Bytes does the integer, signed-integer, float, signed-float, double, signed-double, char, signed-char, short, long, long-double data type occupies in your system memory using sizeof() inbuilt-function. Put each data type on its own line and on each line put text that describes the results.

Code:

```
#include<stdio.h>

    int intType;
    float floatType;
    double doubleType;
    char charType;

int main() {

  // sizeof() evaluates the size of a variable
    printf("Size of int: %ld bytes\n", sizeof(intType));
    printf("Size of float: %ld bytes\n", sizeof(floatType));
    printf("Size of double: %ld bytes\n", sizeof(doubleType));
    printf("Size of char: %ld byte\n", sizeof(charType));

    return 0;
}
```



Output:


user@lab127-OptiPlex-3040:~/Desktop$ gcc q4.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Size of int: 4 bytes
Size of float: 4 bytes
Size of double: 8 bytes
Size of char: 1 byte
user@lab127-OptiPlex-3040:~/Desktop$ gcc q4.c -o Q1
user@lab127-OptiPlex-3040:~/Desktop$ ./Q1
Size of int: 4 bytes
Size of float: 4 bytes
Size of double: 8 bytes
Size of char: 1 byte
user@lab127-OptiPlex-3040:~/Desktop$