

Q1.

```
Ans:- #include <iostream>
using namespace std;
class Distance {
    private:
        int feet;
        int inches;
    public:
        void set-distance ( )
        {
            cout << "enter feet:";
            cin >> feet;
            cout << "enter inches:";
            cin >> inches;
        }
        void get-distance ( ) {
            cout << "Distance is feet = " << feet << ", inches = " << inches << endl;
        }
        void add (Distance d1, Distance d2) {
            feet = d1.feet + d2.feet;
            inches = d1.inches + d2.inches;
            feet = feet + (inches/12);
            inches = inches % 12;
        };
        int main ( ) {
            Distance d1, d2, d3;
            d1.set-distance ( );
            d2.set-distance ( );
            d3.add (d1, d2);
            d3.get-distance ( );
            return 0;
        }
}
```

Output:-

```
Enter feet = 12
Enter inches = 45
Enter feet = 34
Enter inches = 5
```

Distance is feet = 50, inches 2

3. P to capitalize 1st letter of each word.

Ans.

```
#include <iostream>
#include <string>
using namespace std;
int main ( ) {
    char [50] = "welcome to c++ programming lab";

    if (islower (str[0]) == 0)
        str[0] = toupper (str[0]);

    for (int = 0; str[i] != '\0'; i++) {
        if (str[i-1] == ' ')
            str[i] = toupper (str[i]);
    }
    cout << "\n";
    cout << str;
}
```

output :-

Welcome To C++ Programming Lab

4. P to find the largest word in a given string.

Ans.

```
#include <iostream>
#include <string>
using namespace std;

string longest-word (string text) {
    string result_word, temp_str1;
    for (int x=0; x < text.length(); x++) {
        if (text[x] != ' ' && (int (text[x]) >= 65 && int (text[x]) <= 90 ||
            (int (text[x]) >= 97 && int (text[x]) <= 122 || (int (text[x]) >= 48
            && int (text[x]) <= 57))) {
            result_word.push_back (text[x]);
        }
        else {
            break;
        }
    }
}

for (int x=0; x < text.length(); x++)
```

```

if (text[x] != '\0' && (int(text[x]) >= 65 && int(text[x]) <= 90 ||
    int(text[x]) >= 97 && int(text[x]) <= 122) || (int(text[x]) >= 48 &&
    int(text[x]) <= 57)) {
    temp_str1.push_back(text[x]);
}
if (x+1 == text.length() && temp_str1.length() > result_word.length())
{
    result_word = temp_str1;
}
else
{
    if (temp_str1.length() > result_word.length()) {
        result_word = temp_str1;
    }
    temp_str1.clear();
}
return result_word;
}

```

```

int main() {
    cout << "Everything is ok. In longest word : " << longest_word
        << "everything is ok." << endl;
}

```

output :-

Everything is ok.

longest word : Everything.

5. P to sort characters in a string.

Ans. #include <iostream>

#include <string>

#include <stdio.h>

using namespace std;

```

int main() {
    char str[50], temp;
    int i, j;
    cout << "enter a string : ";
    gets(str);
    for (i=0; str[i] != '\0'; i++) {
        for (j=i+1; str[j] != '\0'; j++) {
            if (str[i] > str[j]) {

```

```
temp = str[i];
```

```
str[i] = str[j];
```

```
str[j] = temp;
```

```
}
```

```
}
```

```
}
```

```
cout << "\n" << str;
```

```
}
```

output:-

Enter a string : Hello

olleH

Q. P to count all the words in a string.

Ans. `#include <iostream>`

`#include <string.h>`

`using namespace std;`

`int main () {`

`char str[50];`

`int count = 0; i;`

`cout << "Enter a string:";`

`gets (str);`

`for (i=0; str[i]!='\0'; i++)`

`{`

`if (str[i] == ' ')`

`count++;`

`}`

`cout << "no. of words in the string are:" << count + 1;`

`return 0;`

`}`

output:-

Enter a string : Hello world

no. of words in the string are : 2

2. P to swapp 2 numbers.

(a) call by value.

`#include <iostream>`

`using namespace std;`

`void swap (int, int);`

`int main () {`

`int a, b;`

```

cout << "enter value of A::";
cin >> a;
cout << "enter value of B::";
cin >> b;

```

```

    swap(a, b);
}

```

```

void swap (int a, int b) {
    int c;
    c = a;
    a = b;
    b = c;
    cout << "value of :: \n" << a << " & b = " << b << "\n";
}

```

b) Call by address

```

#include <iostream>
using namespace std;
void swap (int *a, int *b) {
    *a += *b;
    *b = *a - *b;
    *a -= *b;
}
int main () {
    int a, b;
    cout << "\n enter 2 numbers :";
    cin >> a >> b;
    swap (&a, &b);
    cout << "a = " << a << "\n b = " << b;
}

```

c) Call by reference

```

#include <iostream>
using namespace std;
void swap (int &a, int &b) {
    a = b;
    b = a - b;
    a = b;
}
int main () {
    int a, b;
    cout << "enter 2 numbers :";
    cin >> a >> b;
    swap(a, b);
    cout << "a = " << a << "\n b = " << b;
}

```

output (a):-

enter value of A:: 1

enter value of B:: 3

value is ::

A = 3 · B = 3

output (b):-

enter 2 number : 3

6

a = 6

b = 3

output (c) :-

enter 2 number : 5

2

a = 2

b = 5

7. P to dynamically allocate an array of 10 elements and print sum.

Ans:-

```
#include <iostream>
using namespace std;
int main ( ) {
    int *ptr, limit, i, sum;
    cout << "enter limit of array : ";
    cin >> limit;
    ptr = new (int);
    for (i=0; i < limit; i++) {
        cout << "enter elements " << " " << i << " : ";
        cin >> *(ptr+i);
    }
    cout << "in entered array elements are : " << endl;
    for (i=0; i < limit; i++) {
        cout << *(ptr+i) << " ";
    }
    cout << endl;

    sum = 0;
    for (i=0; i < limit; i++) {
        sum += *(ptr+i);
    }
    cout << "sum of array elements is : " << sum;
    free(ptr);
    return 0;
}
```

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