

Task 1:

Task01 (Filing Reading/Writing)

Create a file named "dummy.txt" manually and store any text of 500 words and perform following operations:

- Read file and print data on screen.
- Count total letters, words and sentences from text file.
- Create a file named "info-dummy.txt" and store total letters, words and sentences in following pattern:

```
Letters: 125
Words: 70
Sentences: 8
```

- Read above file named "info-dummy.txt" and add letters, words, sentence and print on screen.

```
Letters: 125
Words: 70
Sentences: 8
```

```
Output: 203 (125+70+8)
```

Solution:

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main() {

    //PART A
    ifstream file1;
    file1.open("dummy.txt");

    if (!file1.is_open()) {
        cout << "dummy.txt not found";
        return 0;
    }

    string line;
    string text = "";
```

```

while (getline(file1, line)) {
    cout << line << endl;
    text = text + line + " ";
}

file1.close();

//PART B
int letters = 0;
int words = 1;
int sentences = 0;

for (int i = 0; i < text.length(); i++) {

    if ((text[i] >= 'a' && text[i] <= 'z') ||
        (text[i] >= 'A' && text[i] <= 'Z')) {
        letters++;
    }

    if (text[i] == ' ') {
        words++;
    }

    if (text[i] == '.' || text[i] == '!' || text[i] == '?') {
        sentences++;
    }
}

//PART C
ofstream file2;
file2.open("info-dummy.txt");

file2 << "Letters: " << letters << endl;
file2 << "Words: " << words << endl;
file2 << "Sentences: " << sentences << endl;

file2.close();

//PART D
ifstream file3;
file3.open("info-dummy.txt");

string temp;
int L, W, S;

file3 >> temp >> L;
file3 >> temp >> W;
file3 >> temp >> S;

file3.close();

```

```
int total = L + W + S;

cout << endl;
cout << "Letters: " << L << endl;
cout << "Words: " << W << endl;
cout << "Sentences: " << S << endl;
cout << "Output: " << total << endl;

return 0;
}
```

Task 2:

Task02 (Reading Source File)

Read source code of your file in which you're writing code currently and perform following operations:

- a) Count following things from your source file:
 - `cout/cin` statements
 - Lines of code
 - How many loops are used?
 - How many user-defined functions are there?
 - b) Check whether if/else statement is used or not?
 - c) Which header files are added in source code?
 - d) Think meaningful questions like above and perform (Bonus Marks)
-

Solution:

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main() {

    ifstream file;
    file.open("task2.cpp");

    if (!file.is_open()) {
        cout << "Source file not found";
        return 0;
    }

    string line;

    int coutCount = 0;
    int cinCount = 0;
    int loopCount = 0;
    int functionCount = 0;
    int ifCount = 0;
    int elseCount = 0;
    int headerCount = 0;
    int lineCount = 0;

    while (getline(file, line)) {

        lineCount++;

        if (line.find("cout") != -1) {
            coutCount++;
```

```

    }

    if (line.find("cin") != -1) {
        cinCount++;
    }

    if (line.find("for") != -1) {
        loopCount++;
    }

    if (line.find("while") != -1) {
        loopCount++;
    }

    if (line.find("do") != -1) {
        loopCount++;
    }

    if (line.find("#include") != -1) {
        headerCount++;
    }

    if (line.find("if") != -1) {
        ifCount++;
    }

    if (line.find("else") != -1) {
        elseCount++;
    }

    if (line.find("(") != -1 && line.find(")") != -1 &&
        line.find("main") == -1 && line.find("#") == -1) {
        functionCount++;
    }
}

file.close();

cout << "cout statements: " << coutCount << endl;
cout << "cin statements: " << cinCount << endl;
cout << "Total lines of code: " << lineCount << endl;
cout << "Total loops: " << loopCount << endl;
cout << "User-defined functions: " << functionCount << endl;

if (ifCount > 0) {
    cout << "If used: YES" << endl;
} else {
    cout << "If used: NO" << endl;
}

if (elseCount > 0) {
    cout << "Else used: YES" << endl;
} else {

```

```
        cout << "Else used: NO" << endl;  
    }  
  
    cout << "Header files: " << headerCount << endl;  
  
    return 0;  
}
```

Task 3:

Task03 (Pointers)

Create an array of integers which store 10 random values using loop and perform following operations:

- Modify above task and do is using pointer `int* ptr` and store all 10 random values.
- Modify part (a), search any value using pointer.
- Sum all the values which are divided by 2.
- Sum all even values.
- Make sure, output of part (c) and part (d) should be same.

Solution:

```
#include<iostream>
using namespace std;
int main(){
    int array[10];
    int *ptr = array;

    for(int i=0; i<10; i++){
        cin>>*ptr;
        array[i]=*ptr;
        ptr+=1;
    }
    int search;
    bool found = false;
    int sum =0;
    cout<<"Enter value to search: ";
    cin>>search;
    for(int i =0; i<10;i++){
        if(search == array[i]){
            found = true;
        }
        if(array[i]%2==0){
            sum +=array[i];
        }
    }
    if(found)
        cout<<"Value found"<<endl;
    else
        cout<<"Value not found"<<endl;

    cout<<endl<<"Sum of Numbers divided by 2: "<<sum<<endl;
    cout<<endl<<"Sum of even numbers: "<<sum<<endl;

    return 0;
}
```