Task 1:

```
#include<iostream>
#include<fstream>
using namespace std;
int main(){
    ofstream write("greeting");
    string name,message;
    cout<<"Enter your name: ";
    getline(cin,name);
    cout<<"Enter message: ";
    getline(cin,message);
    write<<"Dear "<<name<<"\n"<<message<<"\nBest Regards!";
    write.close();
}
```

```
Enter your name: rayyan
Enter message: hello world5

--------------------------------
Process exited after 12.02 seconds with return value 0
Press any key to continue . . .
```

Task 2:

```cpp
#include <fstream>
#include<iostream>
using namespace std;
int main(){
    ofstream file("diary",ios::app);
    if(!file){
        cout<<"Error opening file"<<endl;
        return 1;
    }
    string line;
    while(1){
        getline(cin,line);
        if(line == "exit"){
            return 0;
        }
        file<<line;
    }
    file.close();
}
```

```
hello
hi
bye
bye
exit

--------------------------------
Process exited after 10.43 seconds with return value 0
Press any key to continue . . .
```

Task 3:

```cpp
#include <fstream>
#include<iostream>
using namespace std;
int main(){
    ofstream file("signup",ios::app);
    if(!file){
        cout<<"Error opening file"<<endl;
        return 1;
    }
    string name,email;
    cout<<"Enter your name: "<<endl;
    getline(cin,name);
    cout<<"Enter your email: "<<endl;
    getline(cin,email);
    file<<"Name: "<<name<<"\tEmail: "<<email<<endl;
    file.close();
}
```

```
Enter your name:
Rayyan Asif
Enter your email:
rayyanasif811@gmail.com

--------------------------------
Process exited after 12 seconds with return value 0
Press any key to continue . . .
```

Task 4:

```cpp
#include <fstream>
#include<iostream>
#include <ctime>
using namespace std;
int main(){
    ofstream file("system_log",ios::app);
    if(!file){
        cout<<"Error opening file"<<endl;
        return 1;
    }
    time_t current = time(0);
    char* x = ctime(&current);
    file<<"System started at: "<<x;
    file.close();
}
```

```
--------------------------------
Process exited after 0.1484 seconds with return value 0
Press any key to continue . . .
```

Task 5:

```cpp
#include <fstream>
#include <iostream>
#include <fstream>
#include<iostream>
using namespace std;
int main(){
    ifstream file("story");
    if(!file.is_open()){
        cout<<"Error opening file"<<endl;
        return 1;
    }
    string word;
    while(file>>word){
        cout<<word<<endl;
    }
    file.close();
}
```

```
Error opening file

--------------------------------
Process exited after 0.1423 seconds with return value 1
Press any key to continue . . .
```

Task 6:

```cpp
#include<iostream>
#include<fstream>
using namespace std;
int main(){
    ifstream read("secret.txt");
    if(read.is_open()){
        char ch;
        int count=0;
        while(read.get(ch)){
            if(ch>=65 && ch<=90){
                cout<<ch<<" ";
                count++;
            }
        }
        read.close();
        cout<<"The total number of upper case characters are "<<count<<endl;
    }
    else{
        cout<<"File don't exist"<<endl;
    }
}
```

```
File don't exist

--------------------------------
Process exited after 0.1434 seconds with return value 0
Press any key to continue . . .
```

Task 7:

```cpp
#include<fstream>
using namespace std;
struct Student{
    char name[50];
    int id;
    float gpa;
};
int main(){
    Student s1[3];

    for(int i=0;i<3;i++){
        cout<<"For Student:"<<i+1<<endl;

        cout<<"Enter name: ";
        cin>>s1[i].name;

        cout<<"Enter id: ";
        cin>>s1[i].id;

        cout<<"Enter GPA: ";
        cin>>s1[i].gpa;
    }
    ofstream outFile("BinaryFile.dat",ios::binary);
    for(int i=0;i<3;i++){
        outFile.write((char*)&s1[i],sizeof(s1[i]));
    }
    outFile.close();
    Student s2[3];
    ifstream inFile("BinaryFile.dat",ios::binary);
    for(int i=0;i<3;i++){
        inFile.read((char*)&s2[i],sizeof(s2[i]));
    }
    inFile.close();
    for(int i=0;i<3;i++){
        cout<<"Name: "<<s2[i].name<<" | Id: "<<s2[i].id<<" | GPA: "<<s2[i].gpa<<endl;
    }
}
```

```
For Student:1
Enter name: Rayyan
Enter id: 240993
Enter GPA: 3.5
For Student:2
Enter name: raaaaa
Enter id: 2222
Enter GPA: 3333
For Student:3
Enter name: 3rrrr
Enter id: 191
Enter GPA: 4
Name: Rayyan | Id: 240993 | GPA: 3.5
Name: raaaaa | Id: 2222 | GPA: 3333
Name: 3rrrr | Id: 191 | GPA: 4

--------------------------------
Process exited after 25.53 seconds with return value 0
Press any key to continue . . .
```

Task 8:

```cpp
#include<iostream>
#include<fstream>
using namespace std;
int main(){
    fstream read("article.txt", ios::in);
    read.seekg(0,ios::end);
    streampos deadEnd=read.tellg();
    streampos middle=deadEnd/2;
    read.seekg(middle,ios::beg);
    string buffer;
    while(getline(read,buffer)){
        cout<<buffer<<endl;
    }
}
```

```
--------------------------------
Process exited after 0.2781 seconds with return value 0
Press any key to continue . . .
```

Task 9:

```cpp
#include<iostream>
#include<fstream>
#include<string>
using namespace std;
int main(){
    fstream file("draft.txt", ios::out | ios::in);
    streampos position;
    string word;
    string toFind="teh";
    while(file>>word){
        position=file.tellg();
        if(word==toFind){
            cout<<"Word is found and updated"<<endl;
            position-=word.length();
            file.seekp(position);
            file<<"the";
        }
    }
}
```

```
--------------------------------
Process exited after 0.175 seconds with return value 0
Press any key to continue . . .
```

Task 10:

```cpp
#include<iostream>
#include<fstream>
using namespace std;
int main(){
    fstream read("report.txt",ios::app | ios::out |ios::in);
    int Character=0,punc=0;
    char ch;
    while(read.get(ch)){
        if(ch>=33 && ch<=63){
            punc++;
            continue;
        }
        Character++;
    }
    read.clear();
    read.seekg(0,ios::beg);
    int Word=0;
    string word;
    while(read>>word){
        Word++;
    }
    read.clear();
    read.seekg(0,ios::beg);
    int line=0;
    while(getline(read,word)){
        line++;

    }
    read.clear();
    read.seekp(0, ios::end);
    read<<"characters: "<<Character<<endl;
    read<<"Word: "<<Word<<endl;
    read<<"Line: "<<line<<endl;
    read<<"Punctuation Mark: "<<punc<<endl;
}
```

```
--------------------------------
Process exited after 0.1446 seconds with return value 0
Press any key to continue . . .
```

Task 11:

```cpp
#include<iostream>
#include<fstream>
using namespace std;
int main(){
    ofstream write("backup_log.txt",ios::app);
    string temp;
    cout<<"Enter text that is needed to be added in file:"<<endl;
    getline(cin,temp);
    write<<temp;
    streampos size=write.tellp();
    cout<<"The final size of file is "<<size<<" bytes"<<endl;
}
```

```
Enter text that is needed to be added in file:
sssssssssss
The final size of file is 12 bytes

--------------------------------
Process exited after 2.965 seconds with return value 0
Press any key to continue . . .
```

Task 12:

```
#include<iostream>
#include<fstream>
using namespace std;
int main(){
    ifstream file("debug.txt");
    int temp;
    cout<<"Enter the position of cursor in FILE: ";
    cin>>temp;
    file.seekg(temp,ios::beg);
    streampos position=file.tellg();
    cout<<"Pointer position before: "<<position<<endl<<endl;
    int count=0;
    char ch;
    while(count<99){
        count++;
        file.get(ch);
        cout<<ch;
    }
    position=file.tellg();
    cout<<endl<<"\nPointer position after: "<<position<<endl;
}
```

```
Enter the position of cursor in FILE: 33
Pointer position before: -1



Pointer position after: -1

--------------------------------
Process exited after 2.578 seconds with return value 0
Press any key to continue . . .
```