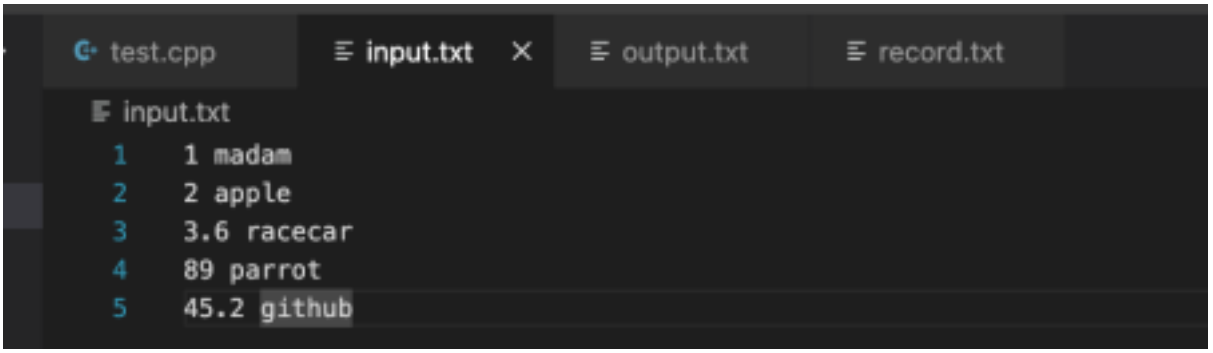
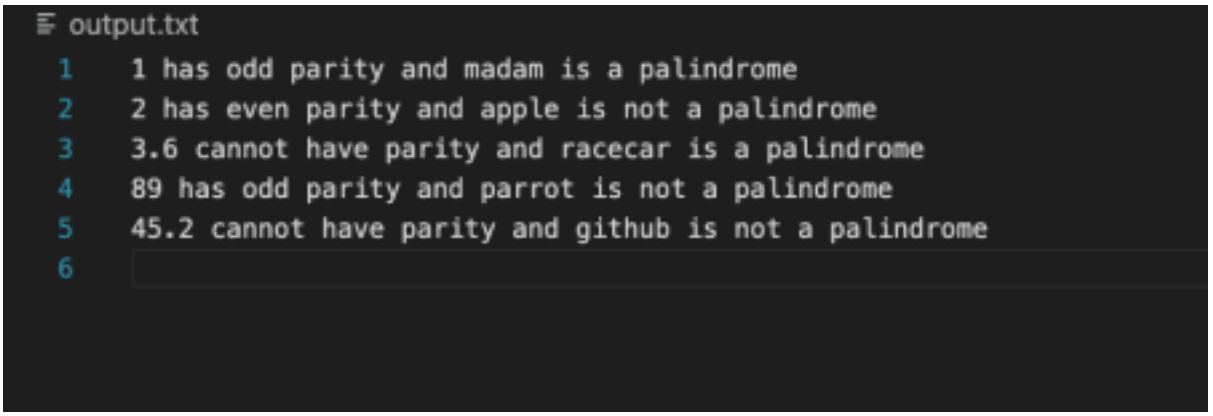
1. First Problem :

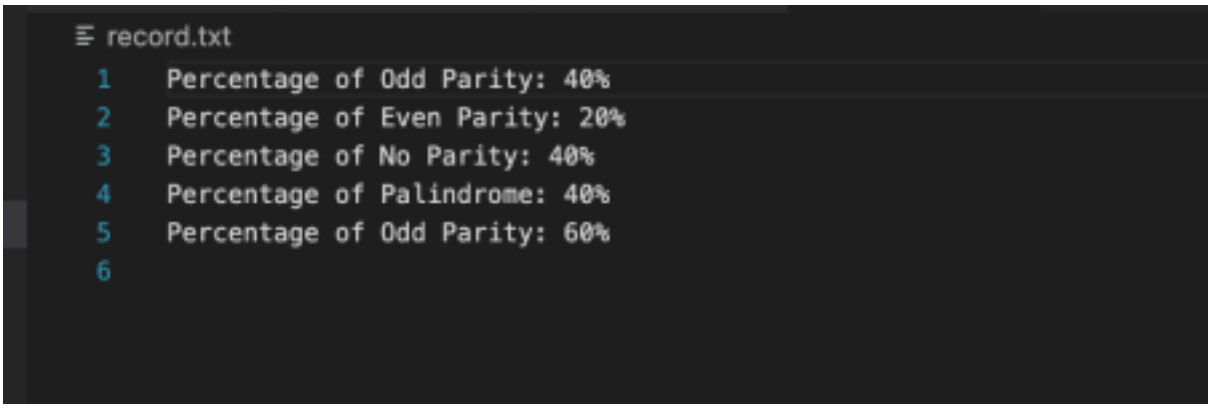
```
#include <bits/stdc++.h>

using namespace std;

bool isPalindrome(string str)
{
  for (int i = 0; i < str.length() / 2; i++)
  {
    if (str[i] != str[str.length() - 1 - i])
    {
      return false;
    }
  }
  return true;
}

string parity(int num)
{
  if (num % 2 == 0)
  {
    return "even";
  }
  else
  {
    return "odd";
  }
}

int main()
{
  ifstream inputFile("input.txt");
  ofstream outputFile("output.txt");
  ofstream recordFile("record.txt");

  float number;
  string s;

  int totalOddParity = 0;
  int totalEvenparity = 0;
  int noparity = 0;
  int totlaPalindrome = 0;
  int totalNonPalindrome = 0;
```

```
  while (inputFile >> number >> s)
  {
    int x = floor(number);
    if (x != number)
    {
      outputFile << number << " cannot have parity"
                 << " and ";
      noparity++;
    }
    else
    {
      outputFile << number << " has " << parity(number) << " parity"
                 << " and ";
      if (parity(number) == "even")
      {
        totalEvenparity++;
      }
      else
      {
        totalOddParity++;
      }
    }
    if (isPalindrome(s))
    {
      outputFile << s << " is a palindrome" << endl;
      totlaPalindrome++;
    }
    else
    {
      outputFile << s << " is not a palindrome" << endl;
      totalNonPalindrome++;
    }
  }
  recordFile << "Percentage of Odd Parity: " << (100 * totalOddParity) / (totalOddParity +
totalEvenparity + noparity) << "%" << endl;
  recordFile << "Percentage of Even Parity: " << (100 * totalEvenparity) / (totalOddParity +
totalEvenparity + noparity) << "%" << endl;
  recordFile << "Percentage of No Parity: " << (100 * noparity) / (totalOddParity +
totalEvenparity + noparity) << "%" << endl;
  recordFile << "Percentage of Palindrome: " << (100 * totlaPalindrome) / (totlaPalindrome +
+totalNonPalindrome) << "%" << endl;
  recordFile << "Percentage of Odd Parity: " << (100 * totalNonPalindrome)
/ (totlaPalindrome + +totalNonPalindrome) << "%" << endl;

  inputFile.close();
```

```
  outputFile.close();
  recordFile.close();
}
```







2. **Second Problem**

```
#include<bits/stdc++.h>
using namespace std;

int fibonacchi(int a) {
  if((a==1)||(a==0)) {
    return a;
  }else {
```

```
    return(fibonacchi(a-1)+fibonacchi(a-2));
  }
}
int main()
{
  int n , i=0;
  cin >> n;
  cout << "Fibonnaci Series : " << endl;
  while(i < n) {
    cout << " " << fibonacchi(i);
    i++;
  }
  return 0;
}
```

3. Third Problem :

```
#include <bits/stdc++.h>
using namespace std;

int binarySearch(int arr[], int l, int h, int x)
{
    if (l > h)
    {
        return -1;
    }

    int mid = (l + h) / 2;

    if (arr[mid] == x)
    {
        return mid;
    }
    else if (arr[mid] < x)
    {
        return binarySearch(arr, mid + 1, h, x);
```

```
    }
    else
    {
        return binarySearch(arr, l, mid - 1, x);
    }
}

int main() {
  int arr[] = {0, 2, 4, 5, 6, 7, 8, 15, 17, 19, 21, 23, 25, 27, 29};

  int target;
  cin >> target;

  int index = binarySearch(arr, 0, 15, target);

  for (int i = 0; i < 15; i++) {
    cout << arr[i] << " ";
  }
  cout << endl;

  cout << "Target value: " << target << endl;

  if (index == -1) {
    cout << "Target value not found." << endl;
  } else {
    cout << "Target value found at index: " << index << endl;
  }

  return 0;
}
```