Course name : Object Oriented Programming through C++ lab

Week - 02 (14-08-2023) task

1. Consider the following partial implementation and implement all the methos.

```
class NumberCheck{
   public:
     bool isEven(int n){
        // fill the code here
     }
     bool isPrime(int n){
         //fill the code here
     }
     bool isArmstrong(int n){
         //fill the code here
     }
     bool isPerfect(int n){
         //fill the code here
     }
     bool isPalindrome(int n){
         //fill the code here
     }
     int ndigits(int n){
        //find the number of digits in a given integer.
     }
     int reverse(int n) {
         //return the reverse of the given integer.
     }
};
int main(){
   int n;
   NumberCheck nc;
   cin>>n;
   if(nc.isPrime(n))
      cout<<"yes"<<endl;
   else
      cout<<"no"<<endl;
   if(nc.isArmstrong(n))
      cout<<"yes"<<endl;
   else
      cout<<"no"<<endl;
    if(nc.isPalindrome(n))
      cout<<"yes"<<endl;
   else
      cout<<"no"<<endl;
      if(nc.isPerfect(n))
      cout<<"yes"<<endl;
   else
      cout<<"no"<<endl;
   return 0;
}
```

2.Consider the following partial code that reads student data and find average cgpa of class and highest cgpa student.

```
#include<iostream>
using namespace std;
struct student{
   char rollno[11];
   char name[30];
   double cgpa;
   char gender;
   void read(){
      cin>>rollno>>name>>cgpa>>gender;
  }
   void display(){
      cout<<rollno<<"\t"<<name<<"\t"<<cgpa<<"\t"<<gender<<endl;
   }
   double averageCgpa(struct student s[],int n){
          // write the code to calculate average cgpa
 }
  struct student highestCgpa(struct student s[],int n){
          // write the code to find the student who got the highest cgpa
   }
};
int main(){
   struct student s[10];
   struct student obj;
   int n,i;
   cout<<"enter number of students"<<endl;
   cin>>n;
   for(i=0;i<n;i++)
      s[i].read();
   cout<<"rollno\tname\tcgpa\tgender"<<endl;
   for(i=0;i<n;i++)
      s[i].display();
   cout<<"average cgpa:"<<obj.averageCgpa(s,n)<<endl;
   struct student r=obj.highestCgpa(s,n);
   cout<<"highest cgpa student details:"<<endl;
   r.display();
   return 0;
}
```

3. Consider the following information of an organization

Employee data:

- Empid : integer
- Empname : String
- Department: String
- age : integer
- gender : char
- Salary : double

Employee methods:

- read()
- display()
- findMaxSalaryEmployee()
- findMinSalaryEmployee()
- findEmployeesOlderthan(int age)
- updateSalary(empid,increment)

Create a C++ structure/class and implement all the methods

```
struct Employee{

//      data +methods

};
int main(){
    Employee e[10];
    int n,i;
    // write the code for demonstrating all the above methods by invoking them.

    return 0;
}
```