Theory Assignment-3

Code:-

```
//Harsh Bamotra AC-1216
//Program to create an employee class and show polymorphism

#include <iostream>
using namespace std;

// ******** Defining base class employee ********

class employee
        {
                protected:                              //Defining protected member
                string E_name , Department;         //used protected and public members because the
                int E_number , age;                 //private members are not inherited in the derived classes

                 public:                        //Defining public member
                 employee()                 //defining constructor
                        {
                                cout << "Enter the employee name ::";
                                getline(cin , E_name);
                                cout << "Enter your age::";
                                cin >>  age;
                                cin.ignore();
                                cout << "Enter your department::";                  //defined as public so that
                                getline(cin , Department);                          //they can be accessible
                                cout << "Enter your employee number::";
                                cin >> E_number;
                        }
                virtual void computeSalary()=0;                                     //defining virtual functions
                virtual void display()=0;
        }



//******* Defining derived class regularEmployee *******

class regularEmployee : public employee
        {                                               //inherited as public so that the members can be accessible
                                                       //by the bass class pointer
                private:                               //Defining private members
                float Basic_pay , HRA , TA , DA , Gross_sal , tax , Net_sal;    //defined as private so that they
                                                                                //can't be accessed directly
```

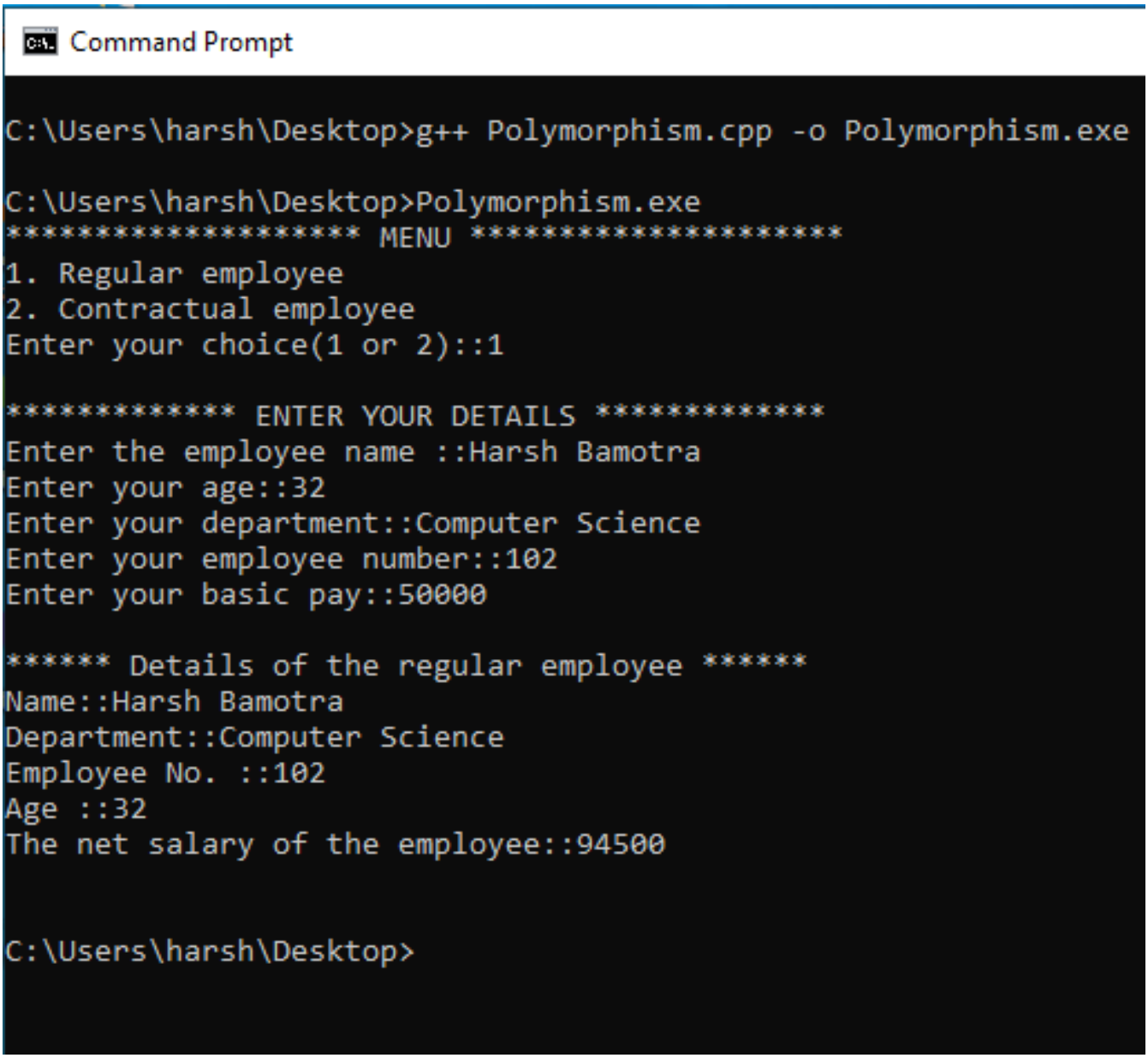
```
        public:                                                 //Defining public members
        regularEmployee()                                       //Defining constructor
                {
                        cout << "Enter your basic pay::";        //defined as public so that they can
                        cin >> Basic_pay;                       //be accessible in the main function
                }

        void computeSalary()                                    //overriding function
                {
                        TA=10000;
                        HRA=0.3*Basic_pay;
                        DA=0.8*(Basic_pay+HRA+TA);
                        Gross_sal=Basic_pay+HRA+TA+DA;
                        tax=0.3*Gross_sal;
                        Net_sal=Gross_sal-tax;
                }

        void display()                                          //overriding function
                {
                        cout << "Name::" << E_name << endl;
                        cout << "Department::" << Department << endl;
                        cout << "Employee No. ::" << E_number << endl;
                        cout << "Age ::" << age << endl;
                        cout << "The net salary of the employee::" << Net_sal << endl << endl;
                }
};



//****** Defining derived class conEemployee ******

class conEmployee : public employee          //inherited as public so that the members can be accessible
{                                            //by the bass class pointer
                                             //defining private members
        private:
        float Hourly_Rate , No_Hours , Gross_sal , tax , Net_sal;      //defined as private so that they
                                                                       //can't be accessed directly
        public:                                         //Defining public members
        conEmployee()                                   //Defining constructor
                {
                        cout << "Enter the number of work hours::";
                        cin >> No_Hours;
                        cout << "Enter the hour rate::";        //defined as public so that they
                        cin >> Hourly_Rate;                     //can be accessible in the main function
                }
```

```
        void computeSalary()                                    //overriding function
            {
                Gross_sal=Hourly_Rate*No_Hours;
                tax=0.1*Gross_sal;
                Net_sal=Gross_sal-tax;
            }

        void display()                                          //overriding function
            {
                cout << "Name::" << E_name << endl;
                cout << "Department::" << Department << endl;
                cout << "Employee No. ::" << E_number << endl;
                cout << "Age ::" << age << endl;
                cout << "The net salary of the employee::" << Net_sal << endl << endl;
            }
    };
int main()
    {
        int ch;
        employee *em;           //defining employee class pointer
                                                                        //printing menu
        cout << "******************** MENU **********************" << endl;
        cout << "1. Regular employee" << endl << "2. Contractual employee" << endl;
        cout << "Enter your choice(1 or 2)::";
        cin >> ch;
        cin.ignore();

        if(ch==1)
            {
                cout << endl;
                cout  << "************* ENTER YOUR DETAILS *************" << endl;
                regularEmployee emp1;               //defining regularEmployee class object
                em = &emp1;                         // pointing the pointer to object
                cout << "****** Details of the regular employee ******" << endl;
                em -> computeSalary();
                em -> display();                                        //printing the data
            }

        else if(ch==2)
            {
                cout << endl;
                cout  << "************* ENTER YOUR DETAILS *************" << endl;
                conEmployee emp2;                   //defining conEmployee class object
                em = &emp2;                         // pointing the pointer to object
                cout << "******* Details of the contractual employee ******" << endl;
                em -> computeSalary();
                em -> display();                                        //printing the data
            }
```

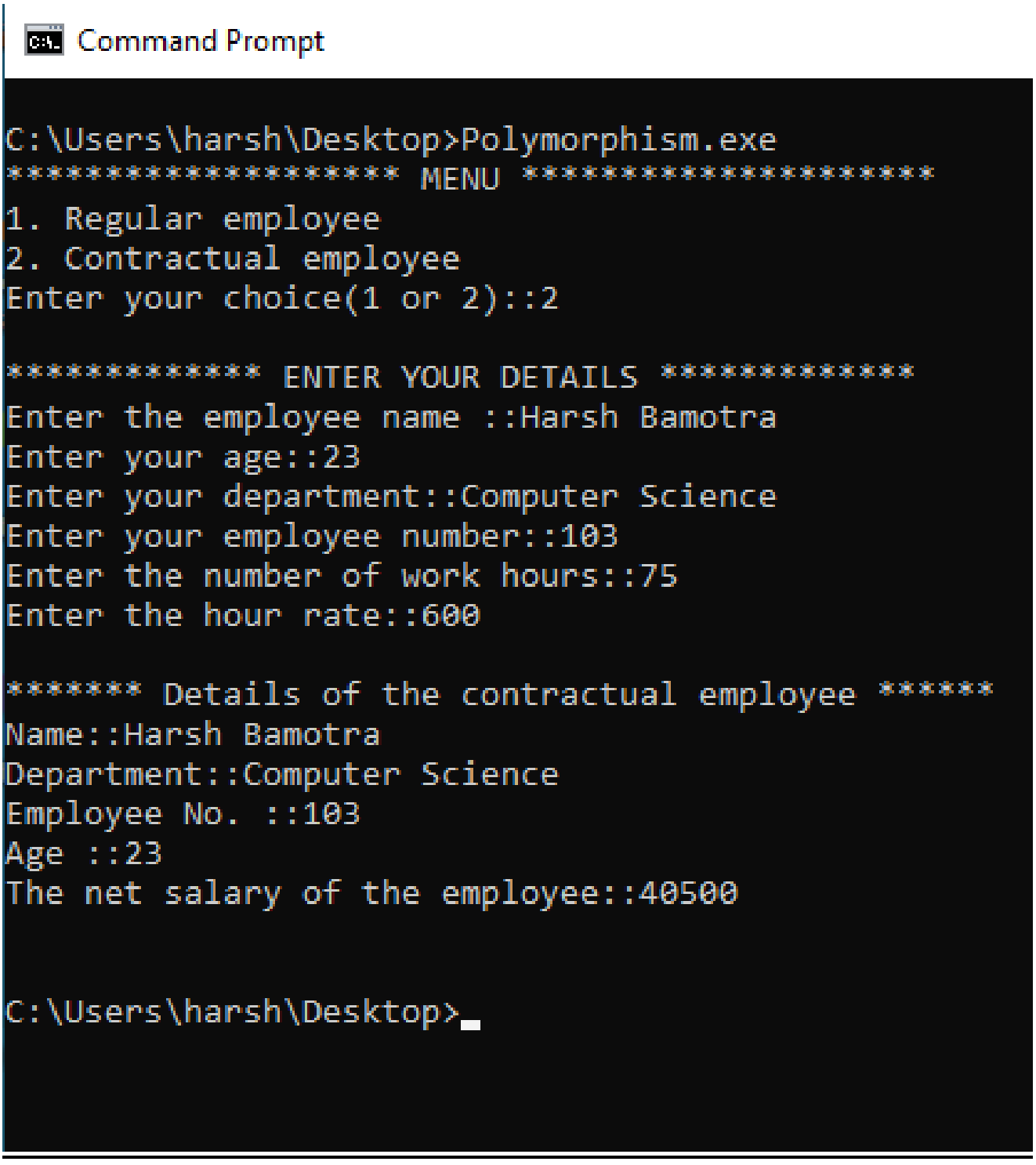
```
        else
                {
                        cout << "Wrong Input !!! Exiting";
                }
        return 0;
}
```

Output:-

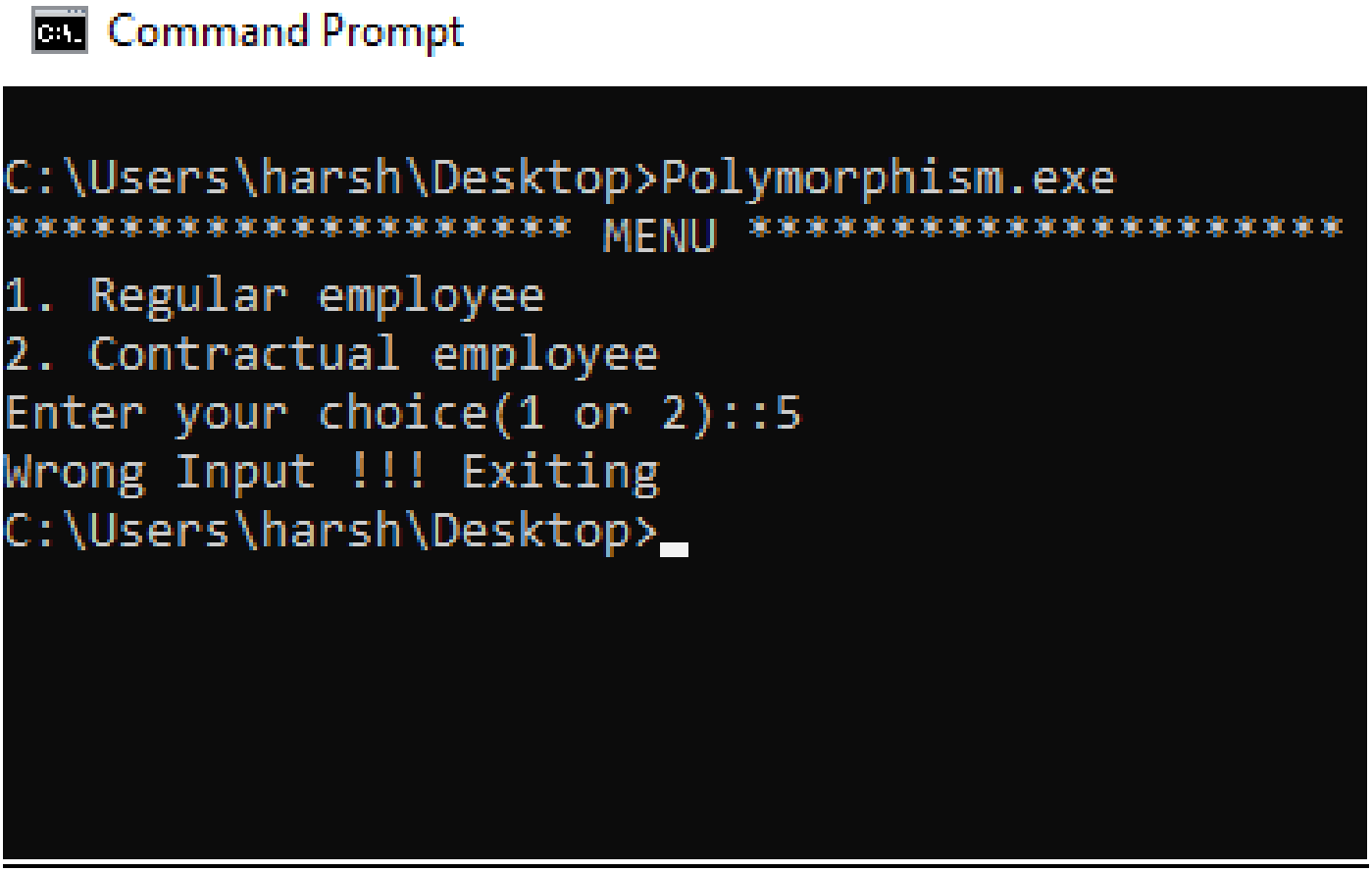
1.Regular Employee



2. Contractual Employee



3. Handling Exception



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