Question 01

Code

```cpp
#include <iostream>

#include <cmath>


using namespace std;

void getData(float weight, float height){

    cout << "Please enter your weight: ";

    cin >> weight;

    cout << "Please enter your height: ";

    cin >> height;

}

void calcBMI(float bmi, float weight, float height){

     bmi = weight/pow(height, 2);

}

void displayFitness(float output){

     if(output < 18.5){

         cout << output << " Underweight";

    }else if(output >= 18.5 && output <= 21.9){

       cout << output << " Healthy";

    }else if(output >= 25.5 && output <=29.9){

       cout << output <<" Overweight";

    }else if(output >= 30.0){

       cout << output << " Obese";

    }

}

int main()

{

   float bmi, weight, height, output;
```

```
getData(height, weight);

calcBMI(bmi, weight, height);

displayFitness(output);




}
```

Output

```
Please enter your weight: 75
Please enter your height: 20
1.70897e-38 Underweight
Process returned 0 (0x0)    execution time : 14.802 s
Press any key to continue.
```

Question 02

Code
```cpp
#include <iostream>

#include <iomanip>

using namespace std;

string subjects[6];

int marks[6];

void getData(string name, string surname, string schoolName){

    cout << "Please enter your name: ";

    cin >> name;

    cout << "Please enter your surname: ";

    cin >> surname;

    cout << "Please enter your school name: ";

    cin >> schoolName;

}

void getMarks(int eng, int math, int lifeOrei, int history, int compLit, int geo){

        cout << "Please enter your English Marks: "<<endl;

        cin >> eng;

        marks[0] = eng;

        subjects[0] = "English";
```

```cpp
        cout << "Please enter your Mathematics marks: " <<endl;

        cin >> math;

        subjects[1] = "Mathematics";

        marks[1] = math;

        cout << "Please enter your Life Orientation marks: "<<endl;

        cin >> lifeOrei;

        marks[2] = lifeOrei;

        subjects[2] = "Life Orientation";

        cout << "Please enter your History marks: "<<endl;

        cin >> history;

        marks[3] = history;

        subjects[3] = "History";

        cout << "Please enter your Computer Literacy marks: "<<endl;

        cin >> compLit;

        marks[4] = compLit;

        subjects[4] = "Computer Literacy";

        cout << "Please enter your Geography marks: "<<endl;

        cin >> geo;

        marks[5] = geo;

        subjects[5] = "Geography";


}
void calcAverageYearMark(float ave){

    int total = 0;

    int eng, math, lifeOrei, history, compLit, geo;

    for(int i = 0; i <= 5; i++){

      total += marks[i];

    }

    ave = total/6;
```

```cpp
   cout << ave;
}
void minMax(int lowest, int highest){
   int eng, math, lifeOrei, history, compLit, geo;
   lowest = marks[0];
   highest = marks[0];
   for(int i = 0; i <=5; i++){
      if(lowest > marks[i]){
         lowest = marks[i];
         cout << lowest;
      }
       if(highest < marks[i]){
         highest = marks[i];
         cout << highest;
      }
   }
}
void passOrFail(string message){
   int eng, math, lifeOrei, history, compLit, geo;


   for(int i = 0; i <= 5; i++){
      if(marks[i] >= 50){
         message = "Passed";
      }else{
         message = "Failed";
      }
   }
}
void awardDistinction(string message2, string message3){
```

```
    int eng, math, lifeOrei, history, compLit, geo;

    float ave;

    calcAverageYearMark(ave);

    for(int i = 0; i <= 5; i++){

        if(marks[i] >= 75){

            message2 = "Passed with distinction";

        }

        if(ave >= 75){

            message3 = "Passed with distinction";

        }

    }

}

void codeSymbol(char code[6], char symbol[6]){

    int eng, math, lifeOrei, history, compLit, geo;

    for(int i = 0; i <= 5; i++){

        switch(marks[i]){

            case 80:

            case 100:

            symbol[i] = 'A';

            code[i] = '7';

            break;

            case 70:

            case 79:

            symbol[i] = 'B';

            code[i] = '6';

            break;

            case 60:

            case 69:

            symbol[i] = 'C';
```

```
        code[i] = '5';

        break;

        case 50:

        case 59:

        symbol[i] = 'D';

        code[i] = '4';

        break;

        case 40:

        case 49:

        symbol[i] = 'E';

        code[i] = '3';

        break;

        case 30:

        case 39:

        symbol[i] = 'F';

        code[i] = '2';

        break;

        case 0:

        case 29:

        symbol[i] = 'F';

        code[i] = '6';

        break;

      }

    }

    cout << code;

    cout << symbol;

}

void displayReport(){

    void line();
```

```
    string name, surname, schoolName, message, message2, message3, subjects[6];

    int lowest, highest;

    char code[6], symbol[6];

    float ave;

    float results;

    int eng, math, lifeOrei, history, compLit, geo;

    getData(name, surname, schoolName);

    getMarks(eng, math, lifeOrei, history, compLit, geo);

    calcAverageYearMark(ave);

    minMax(lowest, highest);

    passOrFail(message);

    awardDistinction(message2, message3);

    codeSymbol(code, symbol);

    cout
<<"***********************************************************************************
*" << endl;

    cout << "                      ******STUDENT ACADEMIC RECORD" << endl;

    cout << "This program inputs the learner marks of matriclevel subjects and prints the student final
report." << endl;

    cout <<
"*************************************************************************************"
<< endl;

    cout<<"\n\n\n";

    cout << setw(15) << "Name: John"<<name<<" Africa"<<surname << setw(15) << " School: Kings
College"<< schoolName <<endl;

    cout << endl << endl;

    cout <<setw(15)<<"Subjects"<<setw(15)<<"Marks"<<setw(15)<<"Symbol"<<setw(15)<<"Code\n";

    cout << endl << endl;

    for(int i = 0; i <= 5; i++){

        cout
<<setw(15)<<subjects[i]<<setw(15)<<marks[i]<<setw(15)<<symbol[i]<<setw(15)<<code[i]<<endl;
```

```
    }

    cout << endl << endl;

    cout << "The average year mark: " << ave << " with a symbol of "<< symbol[0] <<  " and Code "<<code[0]<<endl;

    cout << "Outcome "+message <<endl;

    cout << endl << endl;

    cout <<"The highest mark was "+highest<<endl;

    cout <<"The lowest mark was "+lowest<<endl;
}
int main()
{
    displayReport();
}
```

Output

```
Please enter your name: John
Please enter your surname: Africa
Please enter your school name: KingCollegs

Please enter your English Marks:
50
Please enter your Mathematics marks:
76
Please enter your Life Orientation marks:
40
Please enter your History marks:
62
Please enter your Computer Literacy marks:
56
Please enter your Geography marks:
38

53764038534D**************************************************************************
******STUDENT ACADEMIC RECORD
This program inputs the learner marks of matriclevel subjects and prints the student final report.
**********************************************************************


    Name: John AfricaSchool: Kings College


    Subjects          Marks          Symbol          Code


        English          50              D              4
     Mathematics         76
  Life Orientation       40              E              3
        History          62
  Computer Literacy      56              B
       Geography         38
```

Question 03

Line 4 multiplyBy2 () =   FirstP

?

secondP

Line 5   multiplyBy2 ()

?

Line 13 multiplyBy2 ()   firstP

?

Line 14 multiplyBy2 ()   secondP

?

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