

Tasks i.

1) Highlight menu

2) 2D array & create student and subject structure save it in 2D array

- Sum of each student subjects grades
- average of each subject's grades

3) Employee Form to enter employee data

EMP1:

name :	<input type="text"/>
age :	<input type="text"/>
...	<input type="text"/>

```

#include <iostream>
#include <conio.h>
#include <array>
#include <string>
using namespace std;

int main() {
    array<string, 4> menu = {"New", "Display", "Display All", "Exit"};
    array<int, 4> choices={0,1,2,3};
    int choice = choices.at(0);
    char key;

    while (true) {
        system("cls");
        cout << "---Highlight Menu---\n";

        for (int i = 0; i < menu.size(); i++) {
            if (choice == choices.at(i)) cout << "\033[31m> " << menu.at(i) << "\033[0m\n";
            else cout << " " << menu.at(i) << "\n";
        }

        key = _getch();

        if (key == -32) {
            key = _getch();
        }
    }
}

```

```

if (key == -32) {
    key = _getch();
    if (key == 72 && choice > 0) choice--; // UP arrow
    else if (key == 80 && choice < 3) choice++; // DOWN arrow
}
else if (key == 13) {
    system("cls");
    if (choice == 0) cout << "You chose: New\n";
    else if (choice == 1) cout << "You chose: Display\n";
    else if (choice == 2) cout << "You chose: Display All\n";
    else if (choice == 3) {
        cout << "Exiting...\n";
        break;
    }
    cout << "\nPress any key to return to menu...";
    _getch();
}
}

return 0;

```

```
#include <iostream>
#include <array>
#include <string>
using namespace std;
```

```
struct Subject {
    string name;
    int grade;
};
```

```
struct Student {
    string name;
    int age;
    array<Subject, 2> courses;
};
```

```
int main() {
    array<Student, 2> students = {{
        {"Ahmed", 20, {{ {"DB", 90}, {"OS", 80} }}},
        {"Sara", 21, {{ {"DB", 70}, {"OS", 95} }}}
    }};

    array<int, 2> subjectTotals = {0, 0};
    array<string, 2> subjectNames = {"DB", "OS"};
```

```

array<int, 2> subjectTotals = {0, 0};
array<string, 2> subjectNames = {"DB", "OS"};

cout << "--- Student Totals & Averages ---\n";
for (int i = 0; i < 2; i++) {
    int total = 0;
    for (int j = 0; j < 2; j++) {
        total += students[i].courses[j].grade;
        subjectTotals[j] += students[i].courses[j].grade;
    }
    cout << "Student: " << students[i].name << endl;
    cout << "Total Grades: " << total << endl;
    cout << "-----\n";
}

cout << "--- Subject Averages ---\n";
for (int j = 0; j < 2; j++) {
    cout << subjectNames[j] << " Average: " << subjectTotals[j] / 2.0 << endl;
}

return 0;
}

```

```
#include <iostream>

using namespace std;

int main()
{
    char ch;
    cout << "give me the character "<<endl;
    cin >>ch;
    cout << "the ASCII Code is " <<(int)ch<<endl;
    return 0;
}
```

```
#include <iostream>
using namespace std;
int main()
{
    //1
    cout << "---1" << endl;
    int age=22;
    string name="Ahmed", city="Cairo";
    cout << "my name is " << name << " ,my city is " << city << " and my age is " << age << endl;
    cout << "-----" << endl;

    //2
    cout << "---2" << endl;
    int n1,n2,sum,diff;
    float avg;
    cout << "num1 " << endl;
    cin >> n1;
    cout << "num2 " << endl;
    cin >> n2;
    sum=n1+n2;
    diff=n1-n2;
    avg=sum/2.0;
    cout << "the sum is " << sum << endl;
    cout << "the diff is " << diff << endl;
    cout << "the avg is " << avg << endl;
}
```

```

int n1,n2,sum,diff;
float avg;
cout <<"num1 " <<endl;
cin >>n1;
cout <<"num2 " <<endl;
cin >>n2;
sum=n1+n2;
diff=n1-n2;
avg=sum/2.0;
cout <<"the sum is " <<sum<<endl;
cout <<"the diff is " <<diff<<endl;
cout <<"the avg is " <<avg<<endl;
cout << "-----"<<endl;

//3
cout << "---3"<<endl;
int num=10;
cout << "Hexadecimal: " << hex << num << endl;
cout << "Octal: " << oct << num << endl;
cout << "-----"<<endl;

return 0;

```

}