

C++ ASSIGNMENT -1

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1)A company decided to give bonus of 5% of employee if his/her year of service is more than 5 years. Ask user for their salary and year of service and print the net bonus.

//) A company decided to give bonus of 5% of employee his/her year of service //is more than 5 years. Ask user for their salary and year of service and //print the net bonus.

```
#include <iostream.h>
int main() {
    float salary, bonus = 0;
    int years_of_service;
    cout << "Enter your salary: ";
    cin >> salary;
    cout << "Enter your years of service: ";
    cin >> years_of_service;
    if (years_of_service > 5) {
        bonus = salary * 0.05;
    }
    cout << "Your net bonus is: " << bonus << endl;
    cout << "Rashi Sawardekar" << endl;
    cout << "Seat no.: 31010924093" << endl;
    return 0;
}
```

The screenshot shows the Turbo C++ IDE interface. The menu bar includes File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. The title bar displays "Q1.CPP". The code editor contains the following C++ program:

```
// A company decided to give bonus of 5% of employee his/her year of service  
// is more than 5 years. Ask user for their salary and year of service and  
// print the net bonus.  
  
#include <iostream.h>  
int main() {  
    float salary, bonus = 0;  
    int years_of_service;  
    cout << "Enter your salary: ";  
    cin >> salary;  
    cout << "Enter your years of service: ";  
    cin >> years_of_service;  
    if (years_of_service > 5) {  
        bonus = salary * 0.05;  
    }  
    cout << "Your net bonus is: " << bonus << endl;  
    cout << "Rashi Sawardekar" << endl;  
    cout << "Seat no.: 31010924093" << endl;  
    return 0;  
}
```

The status bar at the bottom shows "20:3" and various keyboard shortcuts: F1 Help, F2 Save, F3 Open, Alt-F9 Compile, F9 Make, F10 Menu. The background of the IDE is blue.

OUTPUT:

```
C:\TURBOC3\BIN>TC  
Enter your salary: 50000  
Enter your years of service: 7  
Your net bonus is: 2500  
Rashi Sawardekar  
Seat no.: 31010924093
```

2)A school has following rules for grading system

- a)Below 25 – F
- b)25 to 45 – E
- c)46 to 50 – D
- d)51 to 60 – C
- e)61 to 80 – B
- f)Above 80 – A

//2)A school has following rules for grading system

- //a)Below 25 – F b)25 to 45 – E
- //c)46 to 50 – D d)51 to 60 – C
- //e)61 to 80 – B f)Above 80 – A

```
#include <iostream.h>
int main() {
    int marks;
    cout << "Enter your marks: ";
    cin >> marks;
    if (marks < 25)
        cout << "Grade: F" << endl;
    else if (marks <= 45)
        cout << "Grade: E" << endl;
    else if (marks <= 50)
        cout << "Grade: D" << endl;
    else if (marks <= 60)
        cout << "Grade: C" << endl;
    else if (marks <= 80)
        cout << "Grade: B" << endl;
    else
        cout << "Grade: A" << endl;
    cout << "Rashi Sawardekar" << endl;
    cout << "Seat no.: 31010924093" << endl;
    return 0;
}
```

```
File Edit Search Run Compile Debug Project Options Window Help
[ ]= Q2.CPP = 1=[ ]
//2)A school has following rules for grading system
//a)Below 25 F b)25 to 45 E
//c)46 to 50 D d)51 to 60 C
//e)61 to 80 B f)Above 80 A

#include <iostream.h>
int main()
{
    int marks;
    cout << "Enter your marks: ";
    cin >> marks;
if (marks < 25)
    cout << "Grade: F" << endl;
else if (marks <= 45)
    cout << "Grade: E" << endl;
else if (marks <= 50)
    cout << "Grade: D" << endl;
else if (marks <= 60)
    cout << "Grade: C" << endl;
else if (marks <= 80)
    cout << "Grade: B" << endl;
else
    cout << "Grade: A" << endl;
}
21:10
```

```
File Edit Search Run Compile Debug Project Options Window Help
[ ]= Q2.CPP = 1=[ ]
int main()
{
    int marks;
    cout << "Enter your marks: ";
    cin >> marks;
if (marks < 25)
    cout << "Grade: F" << endl;
else if (marks <= 45)
    cout << "Grade: E" << endl;
else if (marks <= 50)
    cout << "Grade: D" << endl;
else if (marks <= 60)
    cout << "Grade: C" << endl;
else if (marks <= 80)
    cout << "Grade: B" << endl;
else
    cout << "Grade: A" << endl;
cout << "Rashi Sawardekar" << endl;
cout << "Seat no.: 31010924093" << endl;
return 0;
}
27:10
```

OUTPUT:

```
C:\TURBOC3\BIN>TC
Enter your marks: 93
Grade: A
Rashi Sawardekar
Seat no.: 31010924093
```

3)A student will not be allowed to sit in exam if his/her attendance is less than 75% Take the following input from the user

- a) Number of classes held**
- b) Number of classes attended**
- c) And print the percentage**

According to the percentage print whether the student is allowed to sit in the exam or not .

```
//3)A student will not be allowed to sit in exam if his/her attendance  
//is less than 75% Take the following input from the user  
//a) Number of classes held  
//b) Number of classes attended  
//c) And print the percentage  
//According to the percentage print whether  
//the student is allowed to sit in the exam or not .
```

```
#include <iostream.h>  
int main() {  
    int totalClasses, attendedClasses;  
    float percentage;  
    cout << "Enter number of classes held: ";  
    cin >> totalClasses;  
    cout << "Enter number of classes attended: ";  
    cin >> attendedClasses;  
    percentage = (float)attendedClasses / totalClasses * 100;  
    cout << "Attendance percentage: " << percentage << "%" << endl;  
    if (percentage >= 75)  
        cout << "Allowed to sit in exam." << endl;  
    else  
        cout << "Not allowed to sit in exam." << endl;  
    cout << "Rashi Sawardekar" << endl;  
    cout << "Seat no.: 31010924093" << endl;  
    return 0;  
}
```

```
File Edit Search Run Compile Debug Project Options Window Help
[1] Q3.CPP 1=[U]
//3)A student will not be allowed to sit in exam if his/her attendance
//is less than 75%. Take the following input from the user
//a) Number of classes held
//b) Number of classes attended
//c) And print the percentage
//According to the percentage print whether
//the student is allowed to sit in the exam or not .

#include <iostream.h>
int main() {
    int totalClasses, attendedClasses;
    float percentage;
    cout << "Enter number of classes held: ";
    cin >> totalClasses;
    cout << "Enter number of classes attended: ";
    cin >> attendedClasses;
    percentage = (float)attendedClasses / totalClasses * 100;
    cout << "Attendance percentage: " << percentage << "%" << endl;
    if (percentage >= 75)
        cout << "Allowed to sit in exam." << endl;
    else
}
21:10 — [ ] F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu
```

```
File Edit Search Run Compile Debug Project Options Window Help
[1] Q3.CPP 1=[U]
//the student is allowed to sit in the exam or not .

#include <iostream.h>
int main() {
    int totalClasses, attendedClasses;
    float percentage;
    cout << "Enter number of classes held: ";
    cin >> totalClasses;
    cout << "Enter number of classes attended: ";
    cin >> attendedClasses;
    percentage = (float)attendedClasses / totalClasses * 100;
    cout << "Attendance percentage: " << percentage << "%" << endl;
    if (percentage >= 75)
        cout << "Allowed to sit in exam." << endl;
    else
        cout << "Not allowed to sit in exam." << endl;
    cout << "Rashi Sawardekar" << endl;
    cout << "Seat no.: 31010924093" << endl;
    return 0;
}
27:10 — [ ] F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu
```

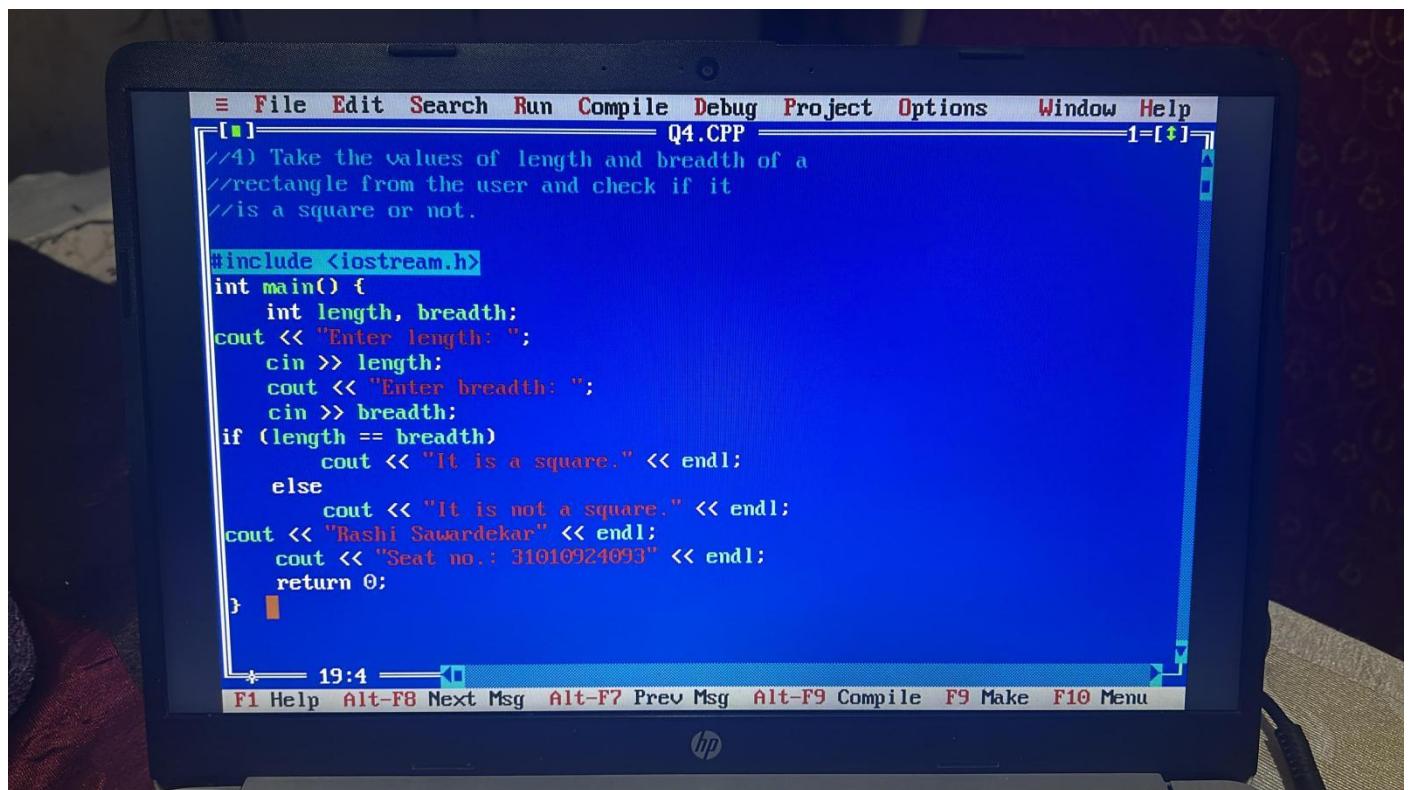
OUTPUT:

```
C:\TURBOC3\BIN>TC
Enter number of classes held: 50
Enter number of classes attended: 47
Attendance percentage: 94%
Allowed to sit in exam.
Rashi Sawardekar
Seat no.: 31010924093
```

4) Take the values of length and breadth of a rectangle from the user and check if it is a square or not.

```
//4) Take the values of length and breadth of a  
//rectangle from the user and check if it  
//is a square or not.
```

```
#include <iostream.h>  
int main() {  
    int length, breadth;  
    cout << "Enter length: ";  
    cin >> length;  
    cout << "Enter breadth: ";  
    cin >> breadth;  
    if (length == breadth)  
        cout << "It is a square." << endl;  
    else  
        cout << "It is not a square." << endl;  
    cout << "Rashi Sawardekar" << endl;  
    cout << "Seat no.: 31010924093" << endl;  
    return 0;  
}
```



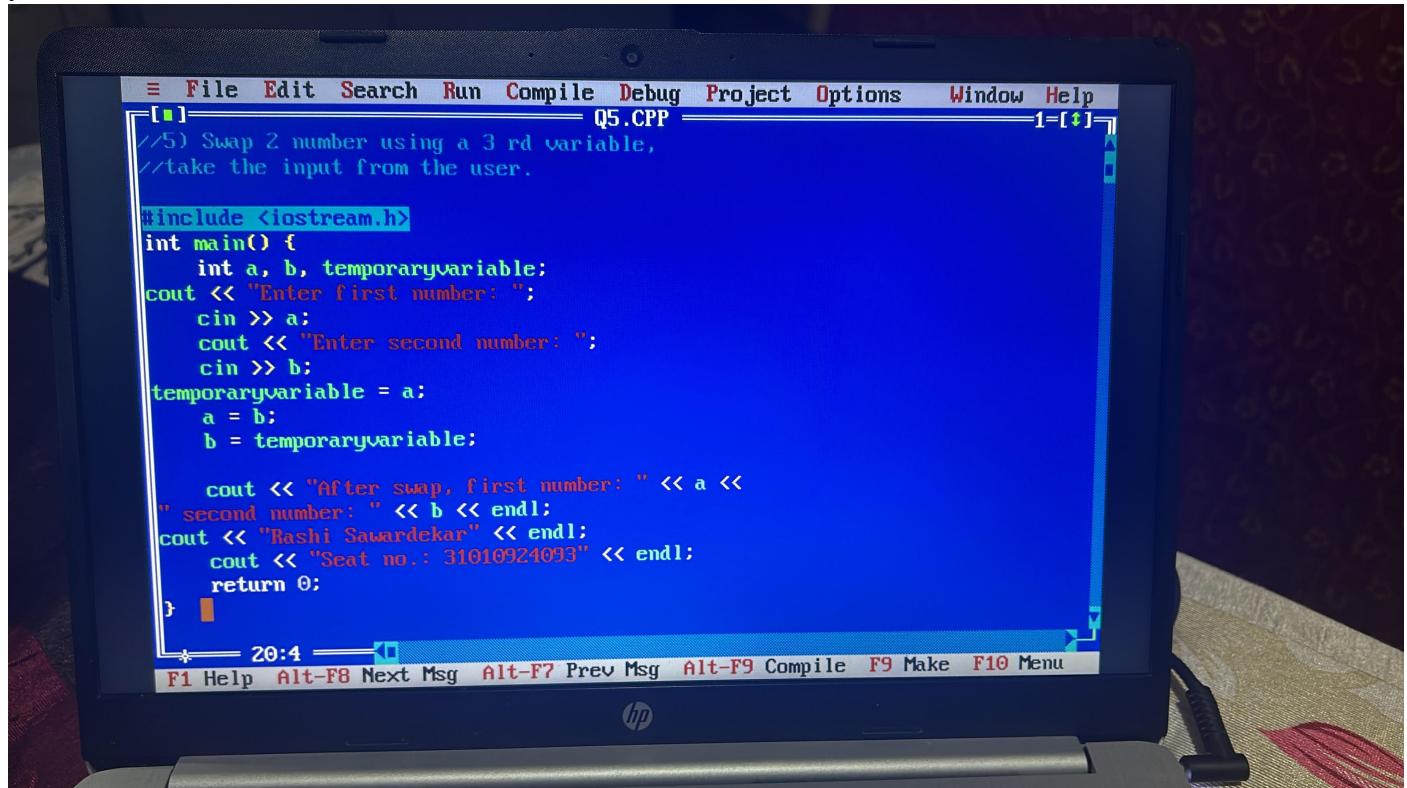
OUTPUT:

```
C:\TURBOC3\BIN>TC  
Enter length: 30  
Enter breadth: 30  
It is a square.  
Rashi Sawardekar  
Seat no.: 31010924093
```

5) Swap 2 number using a 3 rd variable, take the input from the user.

```
//5) Swap 2 number using a 3 rd variable,  
//take the input from the user.
```

```
#include <iostream.h>  
int main() {  
    int a, b, temporaryvariable;  
    cout << "Enter first number: ";  
    cin >> a;  
    cout << "Enter second number: ";  
    cin >> b;  
    temporaryvariable = a;  
    a = b;  
    b = temporaryvariable;  
  
    cout << "After swap, first number: " << a <<  
    " second number: " << b << endl;  
    cout << "Rashi Sawardekar" << endl;  
    cout << "Seat no.: 31010924093" << endl;  
    return 0;  
}
```



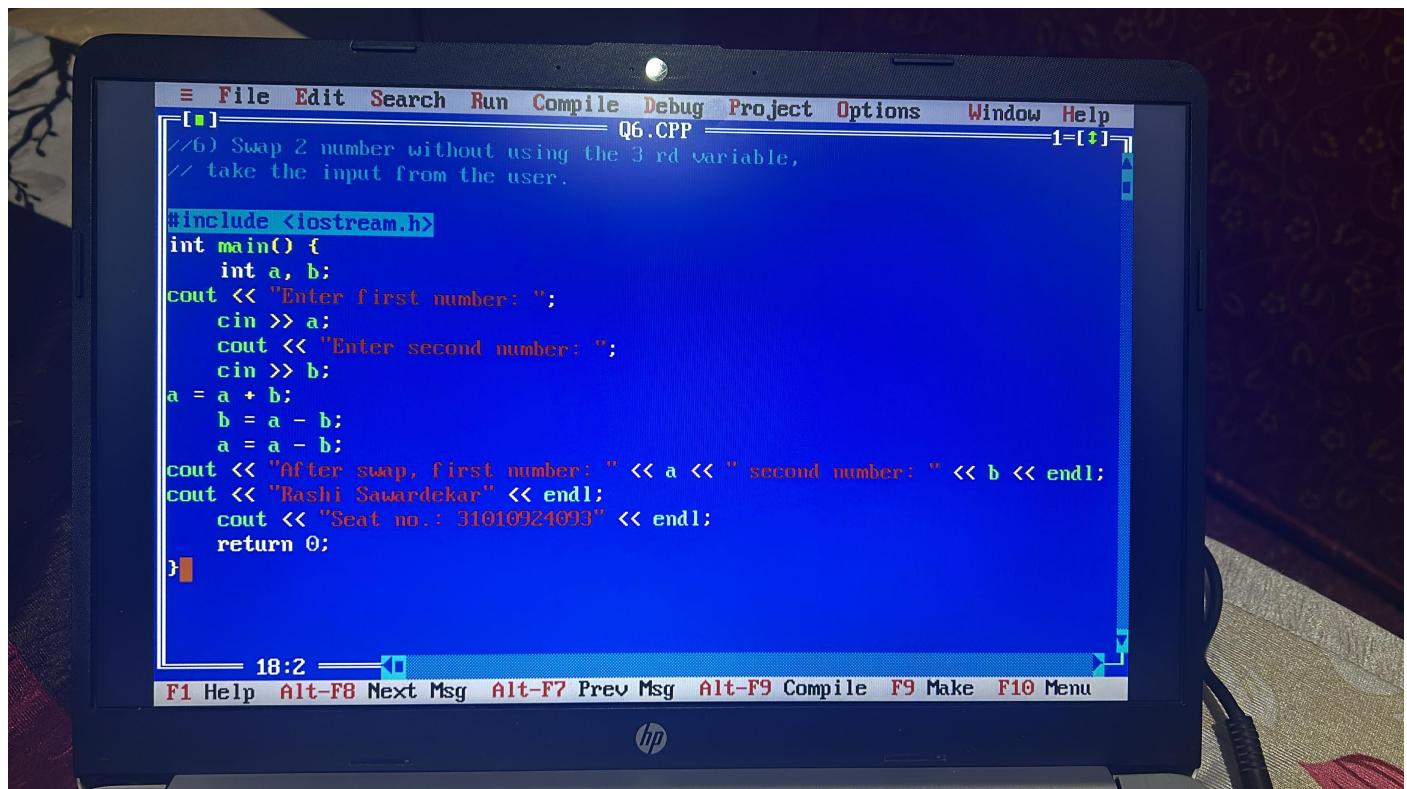
OUTPUT:

```
C:\TURBOC3\BIN>TC  
Enter first number: 5  
Enter second number: 8  
After swap, first number: 8 second number: 5  
Rashi Sawardekar  
Seat no.: 31010924093
```

6) Swap 2 number without using the 3 rd variable, take the input from the user.

```
//6) Swap 2 number without using the 3 rd variable,  
// take the input from the user.
```

```
#include <iostream.h>  
int main() {  
    int a, b;  
    cout << "Enter first number: ";  
    cin >> a;  
    cout << "Enter second number: ";  
    cin >> b;  
    a = a + b;  
    b = a - b;  
    a = a - b;  
    cout << "After swap, first number: " << a << " second number: " << b << endl;  
    cout << "Rashi Sawardekar" << endl;  
    cout << "Seat no.: 31010924093" << endl;  
    return 0;  
}
```



OUTPUT:

```
C:\TURBOC3\BIN>TC  
Enter first number: 5  
Enter second number: 8  
After swap, first number: 8 second number: 5  
Rashi Sawardekar  
Seat no.: 31010924093
```

7) Write the code in C++ to print the following pattern on the output screen

```
*  
* *  
* * *  
* * * *  
* * * * *  
* * * * *  
* * * * *  
* * * * *  
  
1  
1 2  
1 2 3  
1 2 3 4  
1 2 3 4 5  
* * * * *  
* * * *  
* * *  
* *  
*
```

//7) Write the code in C++ to print the following pattern on the output screen

```
#include <iostream.h>
#include <conio.h>
int main()
{
    clrscr();
    // Part 1: Star pattern (ascending)
    for (int i = 1; i <= 5; i++) {
        for (int j = 1; j <= i; j++) {
            cout << "* ";
        }
        cout << endl;
    }

    // Part 2: 5 Stars 4 times
    for (int r = 1; r <= 4; r++) {
        for (int j = 1; j <= 5; j++) {
            cout << "* ";
        }
        cout << endl;
    }

    // Part 3: Number pattern
    for (int x = 1; x <= 5; x++) { // Using 'x' instead of 'i'
        for (int y = 1; y <= x; y++) { // Using 'y' instead of 'j'
            cout << y << " ";
        }
        cout << endl;
    }

    // Part 4: Star pattern (descending)
    for (int a = 5; a > 0; a--) { // Using 'a' instead of 'i'
        for (int b = 1; b <= a; b++) { // Using 'b' instead of 'j'
            cout << "* ";
        }
        cout << endl;
    }

    cout << "Rashi Sawardekar" << endl;
    cout << "Seat no.: 31010924093" << endl;

    getch();
    return 0;
}
```

```
File Edit Search Run Compile Debug Project Options Window Help
[•] Q7.CPP 1-[•]
    cout << endl;
}

// Part 2: 5 Stars 4 times
for (int r = 1; r <= 4; r++) {
    for (int j = 1; j <= 5; j++) {
        cout << "* ";
    }
    cout << endl;
}

// Part 3: Number pattern
for (int x = 1; x <= 5; x++) { // Using 'x' instead of 'i'
    for (int y = 1; y <= x; y++) { // Using 'y' instead of 'j'
        cout << y << " ";
    }
    cout << endl;
}

// Part 4: Star pattern (descending)
for (int a = 5; a > 0; a--) { // Using 'a' instead of 'i'
29:26
```

F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu



```
File Edit Search Run Compile Debug Project Options Window Help
[•] Q7.CPP 1-[•]
//? Write the code in C++ to print the following pattern on the output screen

#include <iostream.h>
#include <conio.h>
int main()
{
clrscr();
    // Part 1: Star pattern (ascending)
    for (int i = 1; i <= 5; i++) {
        for (int j = 1; j <= i; j++) {
            cout << "* ";
        }
        cout << endl;
    }

    // Part 2: 5 Stars 4 times
    for (int r = 1; r <= 4; r++) {
        for (int j = 1; j <= 5; j++) {
            cout << "* ";
        }
        cout << endl;
    }
21:24
```

F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu



```
File Edit Search Run Compile Debug Project Options Win  
[ ] Q7.CPP  
for (int x = 1; x <= 5; x++) { // Using 'x' instead of 'i'  
    for (int y = 1; y <= x; y++) { // Using 'y' instead of 'j'  
        cout << y << " ";  
    }  
    cout << endl;  
}  
  
// Part 4: Star pattern (descending)  
for (int a = 5; a > 0; a--) { // Using 'a' instead of 'i'  
    for (int b = 1; b <= a; b++) { // Using 'b' instead of 'j'  
        cout << "* ";  
    }  
    cout << endl;  
}  
cout << "Rashi Sawardekar" << endl;  
cout << "Seat no.: 31010924093" << endl;  
  
getch();  
return 0;  
}  
45:26
```

OUTPUT: