CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

# Assignment 4 & 5

* **Group Members**

**Afaq Ahmed Janjua BSE173151**

**Muhammad Ali BSE 173159**

**Statement**

public int scholarship(float gpa, float cgpa){

if ( (gpa >=90% && cgpa >=3.0) {

System.out.print("70% scholarship"); return 85;

}

else if ((gpa >=70% && cgpa >=3.0){

System.out.print("50% scholarship"); return 85;

} else{

System.out.print("not eligible for scholarship");

return 0;

}

}

1. **(Gpa >=90% && cgpa >=3.0)**

* 1. **Decision Statement**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Input | Output |  |
| Gpa | Cgpa |  |  |
| T | T |  | T |
| T | F |  | F |
| F | T |  | F |
| F | F |  | F |

* 1. **implement test cases**

|  |  |  |
| --- | --- | --- |
|  | Input | output |
| Gpa | Cgpa | (Gpa>=90%&& cgpa >=3.0) |
| 92% | 3.3 | Scholarship given |
| 20% | 2.5 | N0 scholarship |
| 90% | 2.0 | No scholarship |
| 40% | 2.6 | No scholarship |

1. **(Gpa >=70% && cgpa >=3.0)**

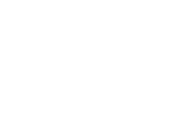
**2.1 Decision Statement**

|  |  |  |
| --- | --- | --- |
|  | Input | Output |
| Gpa | Cgpa |  |
| T | T | T |
| T | F | F |
| F | T | F |
| F | F | F |

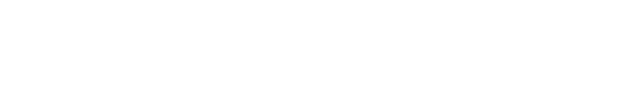
**2.2 . implement test cases**

|  |  |  |
| --- | --- | --- |
|  | Input | Output |
| Gpa | Cgpa | (Gpa>=70% && Cgpa >=3.0) |
| 65% | 3.0 | No scholarship |
| 90% | 3.0 | Eligible for scholarship |
| 90% | 2.5 | No scholarship |
| 40% | 2.9 | No scholarship |

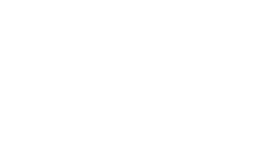
**Graph**



Start



float Gpa, float Cgpa **,**



Gpa >=90% &&

Cgpa>=3



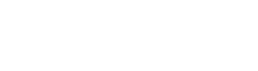
3



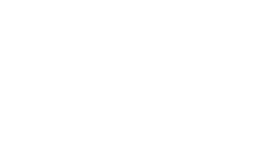
**T**



**F**



Scholorship granted



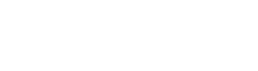
(

>=70%

Gpa

&&

Cgpa>=3



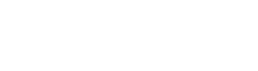
Scholarship granted



**T**



**F**



Not granted



2



4



5



6

**Path 1**

123

**Expression**

1. **(Gpa >=90% && cgpa >=3.0) scholarship granted**

**Path 2**

1245

**Expression**

1. **(Gpa >=70% && cgpa >=3.0) scholarship granted**

**Path 3**

1246

**Expression**

1. **(Gpa >=90% && cgpa >=3.0) && (Gpa >=70% && cgpa >=3.0) scholarship not granted**

## Test Oracle

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Path** |  | **Input** | | **Original** | **Expected** |
|  | **GPA** | **CGPA** |  |  |  |
| 123 | 94% | 3.4 | True | Granted scholarship | Granted scholarship |
| 1245 | 73% | 3.0 | True | Granted scholarship | Granted scholarship |
| 1246 | 55% | 2.5 | False | Not Granted scholarship | Not Granted scholarship |