Grading Students

by nabila_ahmed

HackerLand University has the following grading policy:

- Every student receives a $grade$ in the inclusive range from 0 to 100.
- Any $grade$ less than 40 is a failing grade.

Sam is a professor at the university and likes to round each student's $grade$ according to these rules:

- If the difference between the $grade$ and the next multiple of 5 is less than 3, round $grade$ up to the next multiple of 5.
- If the value of $grade$ is less than 38, no rounding occurs as the result will still be a failing grade.

For example, $grade = 84$ will be rounded to 85 but $grade = 29$ will not be rounded because the rounding would result in a number that is less than 40.

Given the initial value of $grade$ for each of Sam's n students, write code to automate the rounding process. For each $grade_i$, round it according to the rules above and print the result on a new line.

Input Format

The first line contains a single integer denoting n (the number of students).
Each line i of the n subsequent lines contains a single integer, $grade_i$, denoting student i's grade.

Constraints

- $1 \leq n \leq 60$
- $0 \leq grade_i \leq 100$

Output Format

For each $grade_i$ of the n grades, print the rounded grade on a new line.

Sample Input 0

```
4
73
67
38
33
```

Sample Output 0

```
75
67
40
33
```

Explanation 0

ID	Original Grade	Final Grade
1	73	75
2	67	67
3	38	40
4	33	33

1. Student 1 received a 73, and the next multiple of 5 from 73 is 75. Since $75 - 73 < 3$, the student's grade is rounded to 75.
2. Student 2 received a 67, and the next multiple of 5 from 67 is 70. Since $70 - 67 = 3$, the grade will not be modified and the student's final grade is 67.
3. Student 3 received a 38, and the next multiple of 5 from 38 is 40. Since $40 - 38 < 3$, the student's grade will be rounded to 40.
4. Student 4 received a grade below 38, so the grade will not be modified and the student's final grade is 33.

Submissions:101575

Max Score:10

Difficulty: Easy

Rate This Challenge:

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Current Buffer (saved locally, editable) C++14

```
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;

int main()
{
    unsigned int n=0;
    cin>>n;
    if(n>=1 && n<=60)
    {
        unsigned int grade[n], rgrade[n], temp=0;
        for(unsigned int i=0; i<n; ++i)
        {
            cin>>temp;
            if(temp>=0 && temp<=100)
            {
                grade[i]=temp;
                if(grade[i]<38)
                    rgrade[i]=grade[i];
                //check the three cases:<3 means either 0or1or2.
                else
                    for(unsigned int posi=1; posi<=2; ++posi)
                    {
                        if( (grade[i]+1)%5 ==0)
                            rgrade[i]=grade[i]+1;
                        else if( (grade[i]+2)%5 ==0)
                            rgrade[i]=grade[i]+2;
                        else
                            rgrade[i]=grade[i];
                    }
            }
        }
        for(unsigned int i=0; i<n; ++i)
            cout<<rgrade[i]<<endl;
    }
    return 0;
}

```

Line: 1 Col: 1

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