Students:

This content is controlled by your instructor, and is not zyBooks content. Direct questions or concerns about this content to your instructor. If you have any technical issues with the zyLab submission system, use the **Trouble with lab** button at the bottom of the lab.

12.5 Practice Challenge Q5 (10 marks)

Imagine you are developing a simple game where players can score points. The game has 3 levels and can be played by 3 players. The scores for each player at each level are stored in a 2D vector with 3 rows (one for each player) and 3 columns (one for each level). You are provided with the following files:

- `main.cpp`
- `task.h` read only header file
- `task.cpp` you will write your assessed C++ code in this file

Function Details

Implement the following function:

```
std::vector<int>
calculateTotalScores(std::vector<std::vector<int>> scores);
```

The function has the following input parameter:

- `scores`, a 2D vector of integers, which represents the scores of 3 players at 3 levels.

The function details are:

- it creates a 1D vector of int to store the total scores for each player
- it calculates the total score for each player and stores it in the new vector
- the function returns the vector of total scores

Example Consider the following 2D vector (provided for you in `main.cpp`):

```
std::vector<std::vector<int>> scores = {{10, 20, 30}, {40, 50,
60}, {70, 80, 90}};
```

where the **outer** vector contains 3 elements, each of which are the scores for each of 3 players:

- player 1 scores (in index position 0) are: `{10, 20, 30}`
- player 2 scores (in index position 1) are `{40, 50, 60}`
- player 3 scores (in index position 2) are `{70, 80, 90}`

The total score for each player is the sum of the integers in the corresponding **inner** vector e.g. for player 1: `10+20+30 = 60`

Hence, for the following:

```
std::vector<std::vector<int>> scores = {{10, 20, 30}, {40, 50, 60}, {70, 80, 90}};
std::vector<int> totalScores = calculateTotalScores(scores);
```

the function should return the following vector of total scores for the 3 players:

```
{60, 150, 240}
```

626914.4329690.qx3zqy7

LAB ACTIVITY 12.5.1: Practice Challenge Q5 (10 marks) 0 / 10

Current file: main.cpp Load default template...

```
1  #include <iostream>
2  #include <vector>
3  #include "game.h"
4  #include "utilities.cpp" // includes utility function: print_1D_vector
5
6  int main()
7  {
8      std::vector<std::vector<int>> scores = {{10, 20, 30}, {40, 50, 60}, {70,
9      std::vector<int> totalScores = calculateTotalScores(scores);
10     print_1D_vector(totalScores);
11
12     return EXIT_SUCCESS;
13 }
```

Develop mode | Submit mode

Run your program as often as you'd like, before submitting for grading. Below, type any needed input values in the first box, then click **Run program** and observe the program's output in the second box.

Enter program input (optional)

If your code requires input values, provide them here.

Run program

Input (from above) → main.cpp (Your program) →

Program output displayed here

Coding trail of your work What is this?

```
History of your effort will appear here once you begin
working on this zyLab.
```

Trouble with lab?