Software Internship Questionnaire

Please answer the following and provide any code if necessary.

1. Write a simple REST API example in Golang/C/C++ and post to github

2. Take a pcap capture and write a small C program to print IP header in full

3. Write a program that calculates the total sum of all numbers in a given list

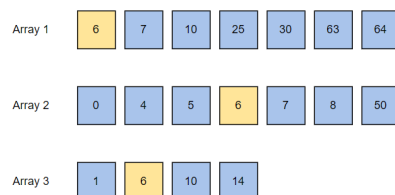4. Compute the following:

```
int main(){
  int n = 10;
  int sum = 0;
  float pie = 3.14;

  for (int i=1; i<n; i+=3){
    cout << pie << endl;
    for (int j=1; j<n; j+=2){
      sum += 1;
      cout << sum << endl;
    }
  }
}
```

5. Find the smallest common number in an array
"Given three integer arrays sorted in ascending order, return the smallest number that is common in all three arrays. Return -1 if there is no common number."

Hints:

- The arrays are already sorted so their smallest element is at index 0.
- Use three pointers

Array 1 | 6 | 7 | 10 | 25 | 30 | 63 | 64

Array 2 | 0 | 4 | 5 | 6 | 7 | 8 | 50

Array 3 | 1 | 6 | 10 | 14

6. Reverse words in a given string
7. Shuffle an Array of Integers