

Clicker Questions

- **Question 1:** What is the output of **p1.cpp** when it runs with **input-1.txt** as standard input?
- **Question 2:** What is the output of **p2.cpp** when it runs with **input-1.txt** as standard input?
- **Question 3:** What is the output of **p3.cpp** when it runs with **input-2.txt** as standard input?

input-1.txt

```
aa bb cc dd  
ee ff gg hh
```

input-2.txt

```
4 5  
3 9
```

p1.cpp

```
#include <iostream>  
using namespace std;  
  
int main()  
{  
    string s1, s2, s3;  
  
    while (cin >> s1 >> s2 >> s3) {  
        cout << s1[0] << s2[0] << s3[0];  
    }  
    cout << endl;  
    return 0;  
}
```

p2.cpp

```
#include <iostream>  
#include <vector>  
using namespace std;  
  
int main()  
{  
    vector <string> sv(3);  
  
    while (cin >> sv[0] >> sv[1] >> sv[2]) {  
        cout << sv[0] << sv[1] << sv[2];  
    }  
    cout << endl;  
    return 0;  
}
```

p3.cpp

```
#include <iostream>  
#include <vector>  
using namespace std;  
  
int main()  
{  
    int sum, i;  
  
    sum = 0;  
    while (!cin.eof()) {  
        cin >> i;  
        sum += i;  
    }  
    cout << sum << endl;  
    return 0;  
}
```

Answers

Question 1: The first iteration reads "aa", "bb" and "cc". The second iteration reads "dd", "ee", and "ff". The third iteration fails, because there are only two words left. After the words are read, the first character of each word is printed:

abcdef

Question 2: The same strings are read as in Question 1, only this time into a vector rather than three separate variables. All of the characters are printed:

aabbccddeeff

Question 3: This is a buggy program, because `cin.eof()` only returns `true` after it has failed to read the input. So this loop runs five times, and on the last iteration, the `(cin >> i)` statement fails, leaving `i` equaling nine. Thus, 9 gets added to the sum twice. The answer is $4 + 5 + 3 + 9 + 9 = 30$

30