Question 1:

Alex's Arithmetic Challenge

Alex, a budding mathematician, has been posed a challenge by the wise Mr. Johnson: to create a program that effectively adds two numbers. Your task is to help Alex design this simple yet significant application.

Function Signature:

```
int addTwoNumbers(int num1, int num2);
```

This function takes in two integer parameters and returns their sum.

Input Format: Two space-separated integer values, representing the two numbers to be added.

Output Format: Display a single integer, the sum of the two input numbers.

Constraints: The integers will be in the range of [-2^31, 2^31-1].

Title for Question 1: Sum Of Two Numbers

Solution:

```
#include <iostream>
using namespace std;
int main() {
    int number1, number2;
    cin >> number1;
    cin >> number2;
    int sum = number1 + number2;
    cout << "The sum of " << number1 << " and " << number2 << " is: " <<
    return 0;
}
```

TestCases:

S.No	Inputs	Outputs
1	12 45	The sum of 12 and 45 is: 57
2	100 234	The sum of 100 and 234 is: 334
3	0 7	The sum of 0 and 7 is: 7
4	45 99	The sum of 45 and 99 is: 144
5	23 90	The sum of 23 and 90 is: 113

S.No	Inputs	Outputs
6	3 6	The sum of 3 and 6 is: 9

White List:

Black List:

Question 2:

Write a C++ program that takes user input for both the name and password variables. However, there is a potential security issue with how passwords are handled. Can you identify the security concern and explain how this code can be modified to improve the security of handling passwords in a real-world application?

Input Format:

- A single line containing a string representing the user's name and another string representing the user's password. These two strings are separated by a space.

Output Format:

- The username and password displayed on separate lines or separated by a tab space.

Constraints:

- The username and password will each have a length of at least 1 and at most 100 characters.

Title for Question 2: Print Username and Password

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    char name[50],password[50];
    cin>>name>>password;
    cout<<"userName: "<< name<<endl;
    cout<<"password: "<< password<<endl;
}
```

TestCases:

S.No	Inputs	Outputs
1	Alice MySecret123	userName: Alice password: MySecret123

S.No	Inputs	Outputs
2	JohnDoe 12345	userName: JohnDoe password: 12345
3	user123 p@ssw0rd	userName: user123 password: p@ssw0rd
4	AliceSmith Password123	userName: AliceSmith password: Password123
5	TestUser 9876abc	userName: TestUser password: 9876abc
6	Bob@1234 StrongP@ss	userName: Bob@1234 password: StrongP@ss

White List:

Black List:

Question 3:

Implement a program that involves two variables, globalVar and localVar. The code attempts to read user input for both of these variables. However, there's a potential issue with the input for globalVar. Explain why the input for globalVar is problematic, and suggest a modification to the code to fix this issue.

Input Format:

- The first line contains an integer representing the value for globalVar.
- The second line contains an integer representing the value for localVar.

Output Format:

- Display the values of globalVar and localVar as per the provided format in the sample output.

Title for Question 3: Global and Local Variable

Solution:

```
#include<iostream>
using namespace std;
int globalVar ;


int main() {
    int localVar ;

      cin>>globalVar;

    cin>>localVar;
    cout<<"Global Variable: "<<globalVar<<endl;
    cout<<"Local Variable: "<<localVar<<endl;
    return 0;
}
```

TestCases:

S.No	Inputs	Outputs
1	12 34	Global Variable: 12 Local Variable: 34
2	67 15	Global Variable: 67 Local Variable: 15
3	90 87	Global Variable: 90 Local Variable: 87
4	123 567	Global Variable: 123 Local Variable: 567
5	39 29	Global Variable: 39 Local Variable: 29
6	47 40	Global Variable: 47 Local Variable: 40

White List:

Black List:

Question 4:

Write a code where the program expects the user to input their name using getline(cin, name);. However, if the user enters a name with spaces, the program may not behave as expected. Explain what happens in such a scenario, and suggest a modification to the code to ensure that names with spaces are handled correctly.

Input Format:

- The first line contains a string representing the name of the item.
- The second line contains an integer representing the deposit amount.
- The third line contains a double representing the costPerDay.

Output Format:

- Display the name of the item, followed by the deposit amount, and finally the cost per day. The format should match the one in the sample output.

Title for Question 4: Deposit Amount

Solution:

```
#include <iostream>
#include <string>
using namespace std;


int main() {


    string name;
```

```
    int deposit;


    double  costPerDay;


  //  cout << "Enter your name: ";

    getline(cin, name);
  //  cout << "Enter deposit amount: ";
    cin >> deposit;


   // cout << "Enter cost per day: ";
    cin >> costPerDay;


    // Print the name to the console
    cout << "Name: " << name << std::endl;
    // Print the deposit amount to the console
    cout << "Deposit Amount: " << deposit << std::endl;
    // Print the cost per day to the console
    cout << "Cost per day: " << costPerDay << std::endl;


    return 0;
}
```

TestCases:

S.No	Inputs	Outputs
1	Luxury Watch 5000 20.50	Name: Luxury Watch Deposit Amount: 5000 Cost per day: 20.5
2	Alice Smith 1000 35.25	Name: Alice Smith Deposit Amount: 1000 Cost per day: 35.25
3	Bob Johnson 750 42.0	Name: Bob Johnson Deposit Amount: 750 Cost per day: 42
4	Sarah Brown 1200 60.0	Name: Sarah Brown Deposit Amount: 1200 Cost per day: 60
5	James Wilson 250 25.5	Name: James Wilson Deposit Amount: 250 Cost per day: 25.5
6	Emily Davis 1500 45.75	Name: Emily Davis Deposit Amount: 1500 Cost per day: 45.75

White List: getline(cin, name);

Black List:

Question 5:

Implement a program that calculates property tax based on the assessed value. However, there is a potential issue with the tax calculation. Explain what happens if the user enters an assessed value that is not a multiple of 100, and suggest a modification to the code to ensure that the tax calculation works correctly for any assessed value, even if it's not a multiple of 100.

Input Format:

- A single float value representing the assessed value of the property.

Output Format:

- The first line should display: "Assessed Value: Rs.[Assessed Value]"
- The second line should display: "Taxable Amount: Rs.[Taxable Amount]"
- The third line should display: "Tax Rate: Rs.1.05 for every Rs.100"
- The fourth line should display: "Property Tax: Rs.[Calculated Property Tax]"

Title for Question 5: Calculate Property Tax

Solution:

```
#include <iostream>
#include<iomanip>
using namespace std;
int main()
{
    float assvalue,taxamount,taxrate=1.05,proptax;
    cin>>assvalue;
    taxamount = assvalue*0.92;
    proptax = (taxamount/100)*taxrate;
    cout<<"Assessed Value : "<<fixed<<setprecision(2)<<assvalue<<"\n";
    cout<<"Taxable Amount : "<<fixed<<setprecision(2)<<taxamount<<"\n";
    cout<<"Tax Rate for each Rs.100 : "<<fixed<<setprecision(2)<<taxrate<
    cout<<"Property Tax : "<<fixed<<setprecision(2)<<proptax;
    return 0;
}
```

TestCases:

S.No	Inputs	Outputs
1	200000	Assessed Value : 200000.00 Taxable Amount : 184000.00 Tax Rate for each Rs.100 : 1.05 Property Tax : 1932.00
2	400500	Assessed Value : 400500.00 Taxable Amount : 368460.00 Tax Rate for each Rs.100 : 1.05 Property Tax : 3868.83
3	120000	Assessed Value : 120000.00 Taxable Amount : 110400.00 Tax Rate for each Rs.100 : 1.05 Property Tax : 1159.20
4	480000	Assessed Value : 480000.00 Taxable Amount : 441600.00 Tax Rate for each Rs.100 : 1.05 Property Tax : 4636.80
5	100000	Assessed Value : 100000.00 Taxable Amount : 92000.00 Tax Rate for each Rs.100 : 1.05 Property Tax : 966.00
6	250348	Assessed Value : 250348.00 Taxable Amount : 230320.16 Tax Rate for each Rs.100 : 1.05 Property Tax : 2418.36

White List:

Black List: