



**Instructions:**

- 1- Create a folder with your full name on the desktop.
- 2- Create 10 Text Documents inside the folder and name them Q1, Q2 ... Q9.
- 3- Save your codes inside the Text Documents.

**Q1.** Write a program (by using function) that takes the user's age as input and returns their year of birth.

Sample Output

```
Enter your age: 20
You were born in 2006
```

**Q2.** Write a program (by using function) to check if the entered password is correct. If it's "secure123", print "Access granted", otherwise "Access denied".

Sample Output

```
Enter password: secure123
Access granted
```

Sample Output

```
Enter password: 012
Access denied
```

**Q3.** Write a program (by using function) that will allow a user to input 2 numbers and perform basic arithmetic operations including addition, subtraction, multiplication, and division for these two numbers.

Sample Output

```
Input first number
8
Input Second number
9
8 + 9 = 17
8 - 9 = -1
8 * 9 = 72
8 / 9 = 0.888889
```

**Q4.** Update the Q3 to ask user to choose specific operation to perform.

Sample Output

```
Input first number
6
Input Secondnumber
7
Input one of + - * /
/
6 / 7 = 0.857143
```



**Q5.** Write a program using a function (with a boolean return type) that allows a user to input an integer. The function should check whether the number is even or odd.

Sample Output

```
Enter an integer: 4
The number is Even
```

**Q6.** Write a program (using functions) that allows a user to input a double. The function should check if the number is positive or negative. The program should prompt the user to continue checking other integers or stop the program.

Sample Output

```
Enter a number: 5
The number is Positive
Do you want to check another number? (y/n): y
Enter a number: -3
The number is Negative
Do you want to check another number? (y/n): n
```

**Q7.** Write a function that counts how many vowels are in a text entered by the user.

**Vowels:** (a – e – i – o – u)

Sample Output

```
Enter a text: Programming
Number of vowels: 3
```

**Q8.** Write a program that allows the user to input 5 numbers into an array. Use a function to compute the sum of the array's elements.

Sample Output

```
Enter 5 numbers:
7
2
1
5
3
Sum of the elements: 18
```



**Q8.1.** Update Q8 to find how many even numbers are inside the array.

**Q9.** Write a program that calculates the sum of all elements in the following matrix.

**Note:** You should use a two-dimensional array and a function.

3	4	1	6
2	0	7	5

**Q10 (H.W).** Imagine the company has requested the development of a menu application with three options:

**Sample Output**

```
Welcome to our service!  
Would you like to order something? (yes/no): yes  
Main Menu:  
1. Start  
2. Help  
3. Exit  
Please enter the number of your choice: 1
```

1. **Start:** If the customer selects this option, present a list of food options.

```
Food Menu:  
1. Burger - $5.99  
2. Pizza - $8.49  
3. Salad - $4.99
```

2. **Help:** If the customer selects this option, provide instructions on how to use the app.

```
You selected: Help  
  
Help Center - Frequently Asked Questions:  
Q1: How do I order food?  
A: Choose option 1 (Start) to see the food menu.  
Q2: What happens if I choose Exit?  
A: The program will close and thank you for visiting.  
Q3: Can I see the menu again?  
A: Just restart the program to see the menu again.
```



3. **Exit:** If the customer selects this option, terminate the program.

```
You selected: Exit
```

```
Thank you for visiting! Have a great day!
```

**Q11 (H.W).** Determine the output of the following four code snippets and fix any mistakes.

<pre>void Cube(double y) {     y = y*y*y; }  int main () {     double g = 4.0;     Cube(g);     cout &lt;&lt; g&lt;&lt;endl;     system("pause");     return 0; }</pre>	
<pre>int foo(int x) {     return x+1; }  int main() {     int x = 13;     int y = 16;     cout &lt;&lt; foo(y) &lt;&lt; endl;     return 0; }</pre>	



<pre>void Unit_Array (int* a, int n) {   for (int j = 0; j &lt; n; j++)   {     a[j] = 1;   } } int main() {   int H[4] = {10, 20, 30, 40 };   Unit_Array (H, 4);   cout &lt;&lt; K[2] &lt;&lt; endl;   system("pause"); }</pre>	
<pre>#include &lt;iostream&gt; using namespace std; void bar(int* a) {   for (int j = 0; j &lt; 4; j++)   {     a[j] = j*100;   } } int main() {   int a[4] = {10, 20, 30, 40 };   bar(a);   for (int i = 3; i &gt;= 0; i--)   {     cout &lt;&lt; a[i] &lt;&lt; " ";   }   system("pause"); }</pre>	