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Python Lab 5

Q1

The screenshot shows the VS Code interface with the Explorer, Open Editors, and Python files panels on the left. The main editor displays the file `lab5(1).py` with the following Python code:

```
1 def divide_numbers(a, b):
2     try:
3         result = a / b
4         return result
5     except ZeroDivisionError:
6         print("Error: Division by zero is not allowed.")
7         return None
8
9 numerator = 10
10 denominator = 0
11 result = divide_numbers(numerator, denominator)
12 if result is not None:
13     print(f"Result: {result}")
14
```

The bottom panel shows the TERMINAL output:

```
PS C:\python> python -u "c:\python\lab5(1).py"
Error: Division by zero is not allowed.
PS C:\python>
```

Q2

The screenshot shows the VS Code interface with the Explorer, Open Editors, and Python files panels on the left. The main editor displays the file `lab5(2).py` with the following Python code:

```
1 def access_element(data_list, index):
2     try:
3         element = data_list[index]
4         return element
5     except IndexError:
6         print("Error: Index out of range.")
7         return None
8
9 my_list = [1, 2, 3, 4, 5]
10 index_to_access = 6
11 result = access_element(my_list, index_to_access)
12 if result is not None:
13     print(f"Element at index {index_to_access}: {result}")
14
```

The bottom panel shows the TERMINAL output:

```
PS C:\python> python -u "c:\python\lab5(2).py"
Error: Index out of range.
PS C:\python>
```

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Python Lab 6

Q1

The screenshot shows the VS Code interface with the Explorer, Open Editors, and Python toolbars on the left. The main editor displays a file named `lab6(1).py`. The code defines a function `find_phone_number` that uses a regular expression to validate a phone number. The input string is "Please contact me at (123)-456-7890 or 987-654-3210.", and the output is "Valid phone number found: (123)-456-7890".

```
1 import re
2 def find_phone_number(input_string):
3     phone_pattern = re.compile(r'(\d{3})-\d{3}-\d{4}|\d{3}-\d{3}-\d{4}')
4     match = phone_pattern.search(input_string)
5     if match:
6         return match.group()
7     else:
8         return None
9
10 input_text = "Please contact me at (123)-456-7890 or 987-654-3210."
11 phone_number = find_phone_number(input_text)
12 if phone_number:
13     print("Valid phone number found:", phone_number)
14 else:
15     print("No valid phone number found.")
16
```

The terminal output shows the command `python -u "c:\python\lab6(1).py"` and the result "Valid phone number found: (123)-456-7890".

Q2

The screenshot shows the VS Code interface with the Explorer, Open Editors, and Python toolbars on the left. The main editor displays a file named `lab6(2).py`. The code defines a function `is_strong_password` that checks if a password is strong based on several criteria. The input password is "Christ@123", and the output is "Password is strong.".

```
1 import re
2 def is_strong_password(password):
3     if len(password) < 8:
4         return False
5     if not re.search(r'[A-Z]', password):
6         return False
7     if not re.search(r'[a-z]', password):
8         return False
9     if not re.search(r'\d', password):
10        return False
11    if not re.search(r'[!@#$%^&*()-_+=\{\}\[\];",.<>?\\|]', password):
12        return False
13    return True
14
15 password = "Christ@123"
16 if is_strong_password(password):
17     print("Password is strong.")
18 else:
19     print("Password is not strong.")
20
```

The terminal output shows the command `python -u "c:\python\lab6(2).py"` and the result "Password is strong.".