

22P-9318__Ahmed-Ali__BS(SE-5B)

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```
[15]: import re
      #define custom exception classes
      class InvalidUsernameError(Exception):
          def __init__(self,message="Username must be at least 5 characters long and
          ↳contain only alphanumeric characters"):
              self.message=message
              super().__init__(self.message)

      class WeakPasswordError(Exception):
          def __init__(self,message="Password must be at least 8 characters long,
          ↳contain at least one uppercase letter, one lowercase letter, and one number"):
              self.message=message
              super().__init__(self.message)

      class AgeRestrictionError(Exception):
          def __init__(self, message="User must be at least 18 years old."):
              self.message=message
              super().__init__(self.message)
```

```
[16]: #implement user input validations
      def validate_username(username):
          if not re.match(r"^[A-Za-z0-9]{5,}$",username):
              raise InvalidUsernameError()

      def validate_password(password):
          if (len(password)<8 or
              not re.match(r".*[A-Z].*",password) or
              not re.match(r".*[a-z].*",password) or
              not re.match(r".*[0-9].*",password)):
              raise WeakPasswordError()

      def validate_age(age):
          if age<18:
              raise AgeRestrictionError()
```

```
[17]: #implementing the registration function with try-except-else-finally
      def register_user():
```

```

try:
    #accept user inputs
    username = input("Enter username: ")
    password = input("Enter password: ")

    #age input with validation for integer type
    age_input = input("Enter age: ")
    if not age_input.isdigit():
        raise ValueError("Age must be a number.")
    age = int(age_input)

    #validate inputs
    validate_username(username)
    validate_password(password)
    validate_age(age)

except InvalidUsernameError as e:
    print(f"Invalid Username:{e}")
except WeakPasswordError as e:
    print(f"Weak Password:{e}")
except AgeRestrictionError as e:
    print(f"Age Restriction:{e}")
except ValueError as e:
    print(f"Invalid input:{e}")
else:
    print("Registration successful!")
finally:
    print("Registration process complete.")

```

[18]: register_user()

Enter username: ali

Enter password: 678901Ss

Enter age: 18

Invalid Username:Username must be at least 5 characters long and contain only alphanumeric characters

Registration process complete.

[19]: register_user()

Enter username: Ahmed

Enter password: @678901Ss

Enter age: 17

Age Restriction>User must be at least 18 years old.

Registration process complete.

[20]: register_user()

```
Enter username: Ahmed
Enter password: @678901
Enter age: 18
```

```
Weak Password:Password must be at least 8 characters long, contain at least one
uppercase letter, one lowercase letter, and one number
Registration process complete.
```

```
[21]: register_user()
```

```
Enter username: Ahmed Ali
Enter password: ABC
Enter age: aa
```

```
Invalid input:Age must be a number.
Registration process complete.
```

```
[22]: register_user()
```

```
Enter username: ahmed_ali
Enter password: @678901SS
Enter age: 19
```

```
Invalid Username:Username must be at least 5 characters long and contain only
alphanumeric characters
Registration process complete.
```

```
[23]: register_user()
```

```
Enter username: Ahmed
Enter password: @678901Ss
Enter age: 18
```

```
Registration successful!
Registration process complete.
```

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[ ]:
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