

```
import random
```

```
import string
```

```
def generate_password(length):
```

```
    if length < 4:
```

```
        return "Password must be at least 4 characters long."
```

```
    # Define character sets
```

```
    lowercase = string.ascii_lowercase
```

```
    uppercase = string.ascii_uppercase
```

```
    digits = string.digits
```

```
    symbols = string.punctuation
```

```
    # Combine all characters
```

```
    all_chars = lowercase + uppercase + digits + symbols
```

```
    # Ensure at least one character from each category
```

```
    password = [
```

```
        random.choice(lowercase),
```

```
        random.choice(uppercase),
```

```
        random.choice(digits),
```

```
        random.choice(symbols)
```

```
    ]
```

```
    # Fill the rest with random characters
```

```
    password += random.choices(all_chars, k=length - 4)
```

```
# Shuffle the result to avoid predictable order
```

```
random.shuffle(password)
```

```
# Convert list to string
```

```
return ''.join(password)
```

```
# Get input from user
```

```
try:
```

```
    user_length = int(input("🔒 Enter desired password length: "))
```

```
    password = generate_password(user_length)
```

```
    print(f"✅ Generated Password: {password}")
```

```
except ValueError:
```

```
    print("❌ Please enter a valid number.")
```