



البرمجة والخوارزميات

الجزء العملي

المحاضرة الخامسة

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The image shows a MacBook Pro screen with a Kintone application open. The application interface includes a navigation bar, a search bar, and a list of records. Below the interface, the Komodo IDE shows the source code for a Kintone plugin. The code is written in JavaScript and includes logic for handling form submissions and validation.

```
function beforeSubmit() {
    var unique_name = $X("unique_name");
    if ($X("unique_name").value) {
        if ($X("unique_name").value.length > 100) {
            $X("unique_name").setValidation("unique_name", "Le nom doit contenir moins de 100 caractères.");
        }
    }
}

function afterSubmit(result) {
    if (result.error) {
        $X("unique_name").setValidation("unique_name", result.error);
    }
}
```

MacBook Pro

التدريب الأول

لدينا مجموعة من الطلاب عددهم N تقدموا لامتحان مقرر البرمجة فكانت علاماتهم ضمن الشعاع ($score(n)$) وأسماء الطلاب ضمن الشعاع ($name(n)$). والمطلوب كتابة برنامج بلغة VB.Net من أجل:

- 1- قراءة علامات وأسماء الطلاب.
- 2- إيجاد متوسط علامات الطلاب.
- 3- حساب عدد الطلاب الناجحين إذا كانت علامة النجاح 60.
- 4- أوجد متوسط علامات الطلاب الناجحين فقط.
- 5- إيجاد أعلى علامة بين العلامات وطباعة اسم الطالب الحاصل على أعلى علامة.
- 6- ترتيب العلامات تصاعدياً.
- 7- أنشئ الشعاع ($V(K)$) حيث يحوي علامات الطلاب الراسبين ويمثل K عدد الطلاب الراسبين ثم أطبع هذه الشعاع.

التدريب الأول



```
Imports System.Console  
Imports System.Math  
Module Module 1  
    Sub Main()  
  
        Dim N As Integer  
        Do  
            Writeline ("input N"): N= Readline()  
        Loop While (N<=0)  
  
        Dim Score(n) As Double  
        Dim Name(n) As String  
        Dim I As Integer  
        For I = 1 To n  
            Write("Input Score(" & I & "):")  
            Score(I)= Readline()  
            Write("Input Name(" & I & "):")  
            Name(I)= Readline()  
        Next  
  
        Dim Sum, Avg As Double  
        Sum = 0  
        For I = 1 To N  
            Sum= Sum + Score(I)  
        Next  
        Avg = Sum / n  
        WriteLine("Sum = "&Sum)  
        WriteLine("Avg = "&Avg)
```

```
Dim Count, As Integer  
Count = 0  
For I = 1 To N  
    If Score(I) >=60 Then  
        Count += 1  
    End If  
Next  
WriteLine("Count = "& Count)  
Dim Count1 As Integer  
Dim Sum1, Avg 1 As Double  
Count1 = 0 : Sum1=0  
For I = 1 To N  
    If Score(I) >=60 Then  
        Sum1=Sum1+Score(I):Count1=Count1+1  
    End If  
Next  
If Count1>0 Then  
    Avg1 = Sum1 / Count1  
    WriteLine("Avg1 = "& Avg1)  
Else  
    WriteLine("No One Succeeded")  
End If  
Dim Max, As Double : Dim MaxName As String  
Max = Score(1) : MaxName= Name(1)  
For I = 2 To N  
    If Score(I) > Max Then  
        Max = Score(I) : MaxName=Name(I)  
    End If  
Next  
WriteLine("Max = "& Max)  
WriteLine("The Student Who have if "&MaxName)
```

```
Array.Sort (Score,1,n)  
For I = 1 To N  
    WriteLine( "Score(" & I & ")= " & Score(I))  
Next  
  
Dim V(N) As Double  
Dim K As Integer  
K = 0  
For I = 1 To N  
    If Score(I) < 60 Then  
        K += 1  
        V(K) = Score(i)  
    End If  
Next  
ReDim Preserve V(K)  
For I = 1 To K  
    WriteLine( "V(" & I & ")= " & V(I))  
Next  
  
Readline()  
End Sub  
End Module
```

التدريب الثاني

لدينا المصفوفة الأحادية (شاع) [X[n] والمطلوب اكتب برنامج بلغة VB.Net يقوم بما يلي

1- تعريف جميع المتغيرات، وقراءة عناصر المصفوفة من المستخدم.

2- طباعة عناصر المصفوفة.

3- إيجاد أكبر عنصر ضمن المصفوفة ورقمها (ترتيبه) ومن ثم إظهارهما.

4- إيجاد أصغر عنصر ضمن المصفوفة ورقمها ومن ثم إظهارهما.

5- حساب وإظهار متوسط قيم عناصر المصفوفة وإظهار جميع القيم الأصغر منه.

6- إظهار عدد الأرقام الزوجية ضمن المصفوفة وطباعتها.

7- إظهار عدد الأرقام الفردية ضمن المصفوفة وطباعتها وحساب وسطي لهذه الأعداد.

8- ترتيب عناصر المصفوفة بشكل تصاعدي وطباعتها.

9- ترتيب هذه العناصر بشكل تنازلي وطباعتها.



التدريب الثاني



```
Imports System.Console  
Imports System.Math  
Module Module1  
    Sub Main()  
        Dim N, i As Integer  
        Do  
            Writeline("input N"): N = Readline()  
            Loop While (N <= 0)  
  
        Dim X(N) As Integer  
        For i = 1 To N  
            Write("Input X(" & i & ")")  
            X(i) = Readline()  
        Next  
  
        For i = 1 To N  
            Write("X(" & i & ")=" & X(i))  
        Next  
  
        Dim MaxEl, NMaxEl As Double  
        MaxEl = X(1) : NMaxEl = 1  
        For i = 2 To N  
            If X(i) >= MaxEl Then  
                MaxEl = X(i) : NMaxEl = i  
            End If  
        Next  
        WriteLine("MaxEl = " & MaxEl & ", NMaxEl = " & NMaxEl)
```

```
Dim MinEl, NMinEl As Double  
MinEl = X(1) : NMinEl = 1  
For i = 2 To N  
    If X(i) < MinEl Then  
        MinEl = X(i) : NMinEl = i  
    End If  
Next  
WriteLine("MinEl = " & MinEl & ", NMinEl = " & NMinEl)  
  
Dim Sum As Integer = 0  
Dim Avg As Double  
For i = 1 To N  
    Sum = Sum + X(i)  
Next  
Avg = Sum / N  
WriteLine("Avg = " & Avg)  
For i = 1 To N  
    If X(i) < Avg Then  
        Writeline(X(i))  
    End If  
Next  
  
Dim EvenCount As Integer = 0  
WriteLine("The Even Number in this Array are")  
For i = 1 To N  
    If X(i) Mod 2 = 0 Then  
        Writeline(X(i)) : EvenCount += 1  
    End If  
Next  
WriteLine("EvenCount" & EvenCount)
```

```
Dim OddCount As Integer = 0  
Dim Sum1 As Integer, Avg1 As Single  
WriteLine("The Odd Number in this Array are")  
For i = 1 To N  
    If X(i) Mod 2 <> 0 Then  
        Writeline(X(i))  
        Sum1 = Sum1 + X(i) : OddCount += 1  
    End If  
Next  
WriteLine("OddCount" & OddCount)  
If OddCount > 0 Then  
    Avg1 = Sum1 / OddCount  
    Writeline("The Average for odd number = " & Avg1)  
Else  
    Writeline("No odd number")  
End If  
  
Dim y As Double, j As Integer  
For i = 1 To N-1  
    For j = i+1 To N  
        If X(j) < X(i) Then  
            y = X(i)  
            X(i) = X(j)  
            X(j) = y  
        End If  
    Next  
    Next  
    For i = 1 To N  
        Write(X(i))  
    Next
```

التدريب الثاني



Dim z As Double , k As Integer

For i= 1 to N-1

For j= i+1 to N

If X(k) > X(i) Then

z = X(i)

X(i) = X(k)

X(k) = z

End if

Next

Next

For i = 1 To N

Write(X(i))

Next

Readline()

End Sub

End Module

The screenshot shows the Komodo IDE interface with the following code:

```
$this->XModel->factory("Field")->loadTemplate();
foreach ($this->getFields() as $field) {
    $field->render();
}

include('views/partials/footer.php');

function er_handle_registration_form() {
    $result = array('error'=>array());
    $username = null;
    $password = null;
    $usernameError = $this->option('er_username_error');
    $passwordError = $this->option('er_password_error');

    if ($this->isPost()) {
        $username = $this->Model->factory("Field")->loadTemplate();
        $username->name='username';
        $password = $this->Model->factory("Field")->loadTemplate();
        $password->name='password';
        $password->type='password';

        $username->value=$this->post('username');
        $password->value=$this->post('password');

        if ($username->validate() && $password->validate()) {
            $result['error'] = array();
            $result['username'] = $username->value;
            $result['password'] = $password->value;
        } else {
            $result['error'] = array(
                'username'=>$username->error(),
                'password'=>$password->error()
            );
        }
    }

    if ($result['error']) {
        $this->template('register')->assign('errors', $result);
    } else {
        $this->template('register')->assign('username', $result['username']);
        $this->template('register')->assign('password', $result['password']);
    }
}
```

MacBook Pro



نهاية المحاضرة

```
Kivy code from Accesos.kv:
```

```
screens:
    <LoginScreen>
    <RegisterScreen>

Builder:
    LoginWindow:
        screen_manager:
            screen:
                name: "Login"
                LoginScreen:
                    id: login_screen
                    email_input:
                        id: email_input
                        on_text_validate:
                            if len(email_input.text) > 0:
                                print("Email entered: " + email_input.text)
                            else:
                                print("Email field is empty")
                    password_input:
                        id: password_input
                        on_text_validate:
                            if len(password_input.text) > 0:
                                print("Password entered: " + password_input.text)
                            else:
                                print("Password field is empty")
                    login_button:
                        id: login_button
                        on_press:
                            if len(email_input.text) > 0 and len(password_input.text) > 0:
                                print("Attempting login...")
                            else:
                                print("Please enter both email and password")
                    register_button:
                        id: register_button
                        on_press:
                            print("Switching to Register screen")
                            screen_manager.current = "Register"
                RegisterScreen:
                    id: register_screen
                    email_input:
                        id: email_input
                        on_text_validate:
                            if len(email_input.text) > 0:
                                print("Email entered: " + email_input.text)
                            else:
                                print("Email field is empty")
                    password_input:
                        id: password_input
                        on_text_validate:
                            if len(password_input.text) > 0:
                                print("Password entered: " + password_input.text)
                            else:
                                print("Password field is empty")
                    register_button:
                        id: register_button
                        on_press:
                            if len(email_input.text) > 0 and len(password_input.text) > 0:
                                print("Attempting registration...")
                            else:
                                print("Please enter both email and password")
                    back_button:
                        id: back_button
                        on_press:
                            print("Switching to Login screen")
                            screen_manager.current = "Login"

Actions:
    <LoginAction>
        <on_start>
            self.root.ids['email_input'].text = "user@example.com"
            self.root.ids['password_input'].text = "password123"
        </on_start>
        <on_login>
            if self.root.ids['email_input'].text == "user@example.com" and self.root.ids['password_input'].text == "password123":
                print("Login successful!")
            else:
                print("Login failed")
        </on_login>
    <RegisterAction>
        <on_start>
            self.root.ids['email_input'].text = "user@example.com"
            self.root.ids['password_input'].text = "password123"
        </on_start>
        <on_register>
            if self.root.ids['email_input'].text == "user@example.com" and self.root.ids['password_input'].text == "password123":
                print("Registration successful!")
            else:
                print("Registration failed")
        </on_register>
    
```

MacBook Pro