Cambridge IGCSE

INFORMATION AND COMMUNICATION TECHNOLOGY	**0417/03**
Paper 3 Data Analysis and Website Authoring	**For Examination from 2016**
SPECIMEN MARK SCHEME	
	2 hours 30 minutes

MAXIMUM MARK: 80

This document consists of **17** printed pages and **1** blank page.

CAMBRIDGE
International Examinations

[Turn over

Task 1 – Evidence Document

This mark scheme includes screenshots of the printed evidence that candidates should have included within their Evidence Document.

Task 2 – Spreadsheet

You are going to prepare a spreadsheet for Supa-Scuba. You will use the spreadsheet to create a chart and calculate the costs of diving trips. Display all currency values in dollars to 2 decimal places.

No.	Steps	Mark
1	**Using a suitable software package, load the file P3SHEET.CSV** **Save this file with your Centre number and candidate number, e.g. ZZ999_9999** **Insert a new row above row 1.** 1 mark for correctly inserted row	[1]
2	**In cell A1 enter the title Supa-Scuba Trips 2012-13** – **Supa-Scuba Trips 2012-13** entered in A1 (1 mark) – set as title (1 mark)	[2]
3	**Merge cells: B2 to E2; F2 to I2; J2 to M2; N2 to Q2** **Format these cells so that: text is centre aligned with a black, 18 point, sans-serif font; each has a grey background colour and a thin black border.** Row 2 merged: – B2 to E2; F2 to I2; J2 to M2; N2 to Q2 (1 mark) – sans-serif centre aligned font (1 mark) – text – black, 18 point font (1 mark) – cells – each with grey background colour (1 mark) – cells – thin, black border (1 mark)	[5]
4	**Format cells A2 and R2 so that they appear the same as those formatted in step 3.** – A2 and R2 formatted as cells in Step 3 (1 mark) – display is consistent (1 mark)	[2]
5	**In cell E4 use a function to calculate the number of trips in April, May and June.** – =SUM(B4:D4) (1 mark)	[1]
6	**In cell E5 use a function to calculate the total income from April, May and June.** – =SUM(B5:D5) (1 mark)	[1]
7	**In cell E6 use a function to calculate the total expenditure from April, May and June.** – =SUM(B6:D6) (1 mark)	[1]

8	**Replicate the formulae entered in steps 5, 6 and 7 to calculate and display the data for quarters 2, 3 and 4.** – replication correct to other 3 sub-total columns (see example screenshot) (1 mark)	[1]
9	**Calculate the profit for each month and each quarter.** **[Profit = Income – Expenditure]** in cell B7: – =B5–B6 (1 mark) – replication of formula to other months and sub totals (1 mark)	[2]
10	**Calculate the total number of trips, income, expenditure and profit for the year.** Year totals: – in cell R4, =E4+I4+M4+Q4 (1 mark) – formula replicated to R5, R6 and R7 (1 mark)	[2]
11	**On the left in the footer add your name, Centre number and candidate number.** **On the right in the footer add the automated file name and path.** – left footer – candidate name, Centre number and candidate number correct (1 mark) – right footer – correct automated file name and path (1 mark)	[2]
12	**In cell B9 use a function to display the greatest monthly profit.** =MAX(B7:D7,F7:H7,J7:L7,N7:P7) =MAX function (1 mark) (B7:D7,F7:H7,J7:L7,N7:P7) (1 mark)	[2]
13	**In cell B10 use a function to display the lowest monthly profit.** =MIN (B7:D7,F7:H7,J7:L7,N7:P7) =MIN function (1 mark) (B7:D7,F7:H7,J7:L7,N7:P7) (1 mark)	[2]
14	**In cell B11 use a function to display the average monthly profit.** =AVERAGE(B7:D7,F7:H7,J7:L7,N7:P7) (1 mark)	[1]
15	**Apply appropriate formatting to all cells except row 2.** Formatting: – Numeric values in 5, 6, 7, 9 and 10 all in $ to 2 decimal places (1 mark) – Average profit displayed as $ to 0 decimal places (1 mark) – All currency values right-aligned (1 mark)	[3]

16	Edit the formula in cell B11 so that it also rounds this value to the nearest whole dollar. Display the contents of this cell so that it shows only integer values. =ROUND(AVERAGE(B7:D7,F7:H7,J7:L7,N7:P7),0) =ROUND(… …) (1 mark) ,0 (1 mark)	[2]
17	Save and print the spreadsheet showing formulae. Make sure: it is in landscape orientation; the row and column headings are displayed; the contents of all cells are fully visible. – landscape orientation (1 mark) – row and column headings displayed (1 mark) – contents of all cells visible (1 mark)	[3]
18	Print the spreadsheet showing the values. Make sure: the printout fits on a single page; the contents of all cells are fully visible. – printout on one page **and** all cell contents fully visible (both correct 1 mark)	[1]
19	Update the spreadsheet with the following data for *December*: The income was **$45 000**; The expenditure was **$42 000** Data entry: – December income $45,000.00 and December expenditure $42,000.00 (1 mark) Results: – $3,000.00 and $11,015 (1 mark)	[2]
20	Print the spreadsheet showing the values. Make sure: the printout fits on a single page; the contents of all cells are fully visible. – printout fits on single page **and** contents of all cells are fully visible (both correct 1 mark)	[1]

[Total: 37]

Task 3 – Web Page

You are going to help develop a web page for Supa-Scuba. The web page will be part of a website used to sell scuba-diving holidays around the world.

No.	Steps	Mark

21	Open the stylesheet P3STYLE.CSS in a suitable software package. The stylesheet was not finished and contains a number of errors. Correct and complete this stylesheet using the information above.
	
	Save this stylesheet in your P3_html folder. Use the filename STYLE followed by your candidate number. For example, if your candidate number is 9999 then you will call the file STYLE9999.css
	
	Filename 'style' & cand number (1 mark)
	h1
	color #FFFF00 (1 mark)
	font-family Trebuchet (1 mark)
	     , Arial (1 mark)
	     , sans-serif (1 mark)
	font-size 24pt (1 mark)
	text-align center (US spelling) (1 mark)
	h2
	font-size 16pt (1 mark)
	text-align right (1 mark)
	h2 & h3
	color #0000CC (1 mark)
	h3
	text-align center (US spelling) (1 mark)
	h3 & li & p
	font-size 12pt (1 mark)
	
	li
	text-align left (1 mark)
	
	body
	hyphen changed from underscore (1 mark)
	color changed from colour (1 mark)
	color #00CCFF (1 mark)
		[16]

22	Using a suitable software package, open the file P3SUPA.HTM Attach the stylesheet saved in step 21 to this web page. – stylesheet attached to web page (1 mark)	[1]
23	Replace the text *candidate name*, *Centre number*, *candidate number* with your name, Centre number and candidate number. – all correct (1 mark)	[1]
24	Set the table border to 2. – border = 2 (1 mark)	[1]

25	**Set the cell padding of the table to 8 pixels.** – style = "padding:8" (1 mark)	[1]
26	**Set the table to fill the width of the window.** – width = 100% (1 mark)	[1]
27	**Replace the text *Place logo here* with the image P3LOGO.JPG** – correct insertion of logo in top left cell (1 mark)	[1]
28	**Select the most appropriate image from those located for Task 3 – Web Page and use it to replace these three texts: *Place starfish here; Place shark here; Place turtle here*.** Starfish – top right Shark – centre right Turtle – lower right – 3 correct insertions of image (2 marks) – 2 correct insertions of image (1 mark) – 1 correct insertion of image (0 marks)	[2]
29	**Resize the images placed in step 28 so they are 200 pixels wide and maintain their aspect ratio.** – 3 images: width set to 200 with aspect ratio maintained (1 mark)	[1]
30	**Make the image P3LOGO.JPG a hyperlink to send an email message to supa-scuba@cie.org.uk with a subject line Holiday enquiry** "mailto: (1 mark) Anchorfrom **p3logo.jpg** (1 mark) supa-scuba@cie.org.uk (1 mark) ?subject= (1 mark) Holiday%20enquiry" (1 mark)	[5]

[Total: 30]

Task 4 – Trainee notes

31	Examine the file P3TRAINING.RTF and open it in the most appropriate software package. Make sure that your name, Centre number and candidate number are placed within these notes. Replace each <Answer here> with a suitable method of reducing the dimensions of an image for use in a web page. – html set width or height attribute (1 mark) – resize and save in graphics package (1 mark)	[2]
32	Replace each <Advantage of method here> with an evaluation of why you would choose each method selected in step 31. – higher resolution image uploaded (1 mark) – faster upload speed of image/page (1 mark)	[2]
33	Replace <Evaluation here> with your evaluation of the appropriateness of the stylesheet saved in step 21 for this web page. – appropriate evaluations of candidate's stylesheet for this page related to the purpose of the website (1 mark for each)	[3]
34	Replace each <Layer> with the name of the web development layer and for each layer explain what it is used for. *Save* and print your notes for the trainees. – content layer (1 mark) – content and structure of web page (1 mark) – presentation layer (1 mark) – used for formatting and styles (1 mark) – behaviour layer (1 mark) – for scripting/action/doing something within the page (1 mark)	[6]

[Total: 13]

	E4	=SUM(B4:D4)	1 mark
	E5	=SUM(B5:D5)	1 mark
	E6	=SUM(B6:D6)	1 mark
	Replication	To other 3 sub-total columns	1 mark
	B7	=B5-B6	1 mark
	Replication	Other months & sub-totals	1 mark

	A	B	C	E	F	G	H	I	J
1	**Supa-Scuba Trips 2012-13**								
2	Quarter	1					2		
3	Month	April	May	June	Sub-total	July	August	September	Sub-total	October
4	Number of trips	5	3	3	=SUM(B4:D4)	8	2	7	=SUM(F4:H4)	11
5	Income	16515	15087	12048	=SUM(B5:D5)	42424	3974	36036	=SUM(F5:H5)	38698
6	Expenditure	8896	9379	11724	=SUM(B6:D6)	23975	3521	19014	=SUM(F6:H6)	19345
7	Profit	=B5-B6	=C5-C6	=D5-D6	=E5-E6	=F5-F6	=G5-G6	=H5-H6	=I5-I6	=J5-J6
8										
9	Best month	=MAX(B7:D7,F7:H7,J7:L7,N7:P7)								
10	Worst month	=MIN(B7:D7,F7:H7,J7:L7,N7:P7)								
11	Average profit	=ROUND(AVERAGE(B7:D7,F7:H7,J7:L7,N7:P7),0)								

	B9	=MAX function	1 mark
		(B7:D7,F7:H7,J7:L7,N7:P7)	1 mark
	B10	=MIN function	1 mark
		(B7:D7,F7:H7,J7:L7,N7:P7)	1 mark
	B11	=ROUND(… …)	1 mark
		,0	1 mark
		=AVERAGE(B7:D7,F7:H7,J7:L7,N7:P7)	1 mark

A Candidate, XX999, 9999

Full file path and file name

K	L	M	N	O	P	Q	R
3			4				Year
November	December	Sub-total	January	February	March	Sub-total	Total
2	0	=SUM(J4:L4)	8	12	10	=SUM(N4:P4)	=E4+I4+M4+Q4
6532	0	=SUM(J5:L5)	42008	66168	44220	=SUM(N5:P5)	=E5+I5+M5+Q5
4360	0	=SUM(J6:L6)	13172	54143	27003	=SUM(N6:P6)	=E6+I6+M6+Q6
=K5-K6	=L5-L6	=M5-M6	=N5-N6	=O5-O6	=P5-P6	=Q5-Q6	=E7+I7+M7+Q7

Year Totals
= E4+I4+M4+Q4   1 mark
Replicated   1 mark

Row headings & column headings visible   1 mark
Fully visible   Formulae & labels   1 mark
Orientation   Landscape   1 mark

Printout 2
(1 of 2)

Row 1   New row inserted   1 mark
Supa-Scuba Trips 2012-13
          100% correct   1 mark
          Set as title   1 mark

Row 2 Merged
          B2:E2, F2:I2, J2:M2, N2:Q2   1 mark
          Grey background   1 mark
          Black 18 point text   1 mark
          Sans-serif centre aligned font   1 mark
          Thin black border   1 mark
Format   Cells A2 & R2 like rest of row 2   1 mark
          Consistency of display   1 mark

Supa-Scuba Trips 2012-13

Quarter	1				2				3				4				Year
Month	April	May	June	Sub-total	July	August	September	Sub-total	October	November	December	Sub-total	January	February	March	Sub-total	Total
Number of trips	5	3	3	11	8	2	7	17	11	2	0	13	8	12	10	30	71
Income	$16,515.00	$15,087.00	$12,048.00	$43,650.00	$42,424.00	$3,974.00	$36,036.00	$82,434.00	$38,698.00	$6,532.00	$0.00	$45,230.00	$42,008.00	$66,168.00	$44,220.00	$152,396.00	$323,710.00
Expenditure	$8,896.00	$9,379.00	$11,724.00	$29,999.00	$23,975.00	$3,521.00	$19,014.00	$46,510.00	$19,345.00	$4,360.00	$0.00	$23,705.00	$13,172.00	$54,143.00	$27,003.00	$94,318.00	$194,532.00
Profit	$7,619.00	$5,708.00	$324.00	$13,651.00	$18,449.00	$453.00	$17,022.00	$35,924.00	$19,353.00	$2,172.00	$0.00	$21,525.00	$28,836.00	$12,025.00	$17,217.00	$58,078.00	$129,178.00

Best month	$28,836.00
Worst month	$0.00
Average profit	$10,765

Formatting
          Numeric values in rows 5,6,7,9,10 all in $ 2 decimal places 1 mark
          Average profit displayed as $ 0dp   1 mark
          All currency values right aligned   1 mark
Fit to   Single page, all visible   1 mark

Footer   Left   Name & Numbers   1 mark
          Right   Full path & filename   1 mark

A Candidate, XX999, 9999

Full file path and file name

Data entry   Dec income $45,000.00
             Dec expenditure $42,000.00   1 mark
Results $3,000.00 and $11,015   1 mark
             Single page wide, all visible   1 mark

Supa-Scuba Trips 2012-13

Quarter	1				2				3				4				Year
Month	April	May	June	Sub-total	July	August	September	Sub-total	October	November	December	Sub-total	January	February	March	Sub-total	Total
Number of trips	5	3	3	11	8	2	7	17	11	2	0	13	8	12	10	30	71
Income	$16,515.00	$15,087.00	$12,048.00	$43,650.00	$42,424.00	$3,974.00	$36,036.00	$82,434.00	$38,698.00	$6,532.00	$45,000.00	$90,230.00	$42,008.00	$66,168.00	$44,220.00	$152,396.00	$368,710.00
Expenditure	$8,896.00	$9,379.00	$11,724.00	$29,999.00	$23,975.00	$3,521.00	$19,014.00	$46,510.00	$19,345.00	$4,360.00	$42,000.00	$65,705.00	$13,172.00	$54,143.00	$27,003.00	$94,318.00	$236,532.00
Profit	$7,619.00	$5,708.00	$324.00	$13,651.00	$18,449.00	$453.00	$17,022.00	$35,924.00	$19,353.00	$2,172.00	$3,000.00	$24,525.00	$28,836.00	$12,025.00	$17,217.00	$58,078.00	$132,178.00

Best month	$28,836.00
Worst month	$324.00
Average profit	$11,015

A Candidate, XX999, 9999

Full file path and file name

Name and candidate number   Centre number

<u>Evidence document</u> – Changed from:

```
h1    { color: reddy-green; font-family:
        Arial; font-size: mega big;
        text-align: centre }
h2    { color: darkish blue; font-family:
        Arial; font-size: biggish;
        text-align: left }
h3    { color: darkish blue; font-family:
        Arial; font-size: medium;
        text-align: centre }
li    { color: black; font-family:
        Arial; font-size: middle;
        text-align: lett;
        list-style-type: disc }
p     { color: black; font-family:
        Arial; font-size: medium;
        text-align: left }
body { background_colour:
        brightish blue }
```

Stylesheet printed as screenshot		
Filename	'style' & cand number	1 mark
h1		
color	#FFFF00	1 mark
font-family	Trebuchet	1 mark
	, Arial	1 mark
	, sans-serif	1 mark
font-size	24pt	1 mark
text-align	center (US spelling)	1 mark
h2		
font-size	16pt	1 mark
text-align	right	1 mark
h2 & h3		
color	#0000CC	1 mark
h3		
text-align	center (US spelling)	1 mark
h3 & li & p		
font-size	12pt	1 mark

Screenshot showing
Filename

```
h1    { color: #FFFF00; font-family: Trebuchet, Arial, sans-serif;
font-size: 24pt; text-align: center }
h2    { color: #0000CC; font-family: Arial; font-size: 16pt; text-
align: right }
h3    { color: #0000CC; font-family: Arial; font-size: 12pt; text-
align: center }
li    { color: #000000; font-family: Arial; font-size: 12pt; text-
align: left; list-style-type: disc }
p     { color: #000000; font-family: Arial; font-size: 12pt; text-
align: left }
body       { background-color: #00CCFF }
```

li		
text-align	left	1 mark
body		
hyphen	Changed from underscore	1 mark
color	Changed from colour	1 mark
color	#00CCFF	1 mark

Name and candidate n | Centre number

> Browser   Cand details replaced text   1 mark
> Logo top left cell   1 mark
> Starfish – top right   3 correct = 2 marks
> Shark – centre right   2 correct = 1 mark
> Turtle – lower right   1 correct = 0 marks

> Stylesheet   Correctly attached   1 mark
> Border 2   1 mark
> Width 100%   1 mark
> Css: style="padding:8"   1 mark

```
<!doctype html public "-//w3c//dt        4.0 transitional//en">
<html>
<head>
   <title>Supa-Scuba</title>
   <link rel=stylesheet type=text/css href="style9999.css">
</head>
<body><a name="top"></a>
<table border=2 style="padding:8"; width=100%>
   <tr valign=middle align=center style="background-color:#000000;">
      <td>
<a href= "mailto:supa-scuba@cie.org.uk?subject=Holiday%20enquiry">
<img src="p3logo.jpg"></a></td>
```

> Mailto   "mailto: 1 mark
> Anchor from **p3logo.jpg**   1 mark
> supa-scuba@cie.org.uk   1 mark
> ?subject=   1 mark
> Holiday%20enquiry"   1 mark

```
      <td colspan=2>
```

Name and candidate number   Centre number

```
      <h1>Supa-Scuba</h1></td></tr>
  <tr valign=middle align=center>
    <td colspan=3>
      <h3>With over 70% of the world covered in water, you may be
missing opportunities to see some of the world's most fascinating
sights. See vibrant creatures like fish, shrimps, and an array of
underwater flora like spectacular corals. Look to us for adventures
in the deep, see a different perspective on the
world.</h3></td></tr>
  <tr valign=middle align=center>
    <td rowspan=3><img src="j13sunset.jpg" width=366></td>
    <td>
      <h2> Jewels of the ocean, see these stars...</h2></td>
    <td><img src="J1332img6.jpg" width=200></td></tr>
```
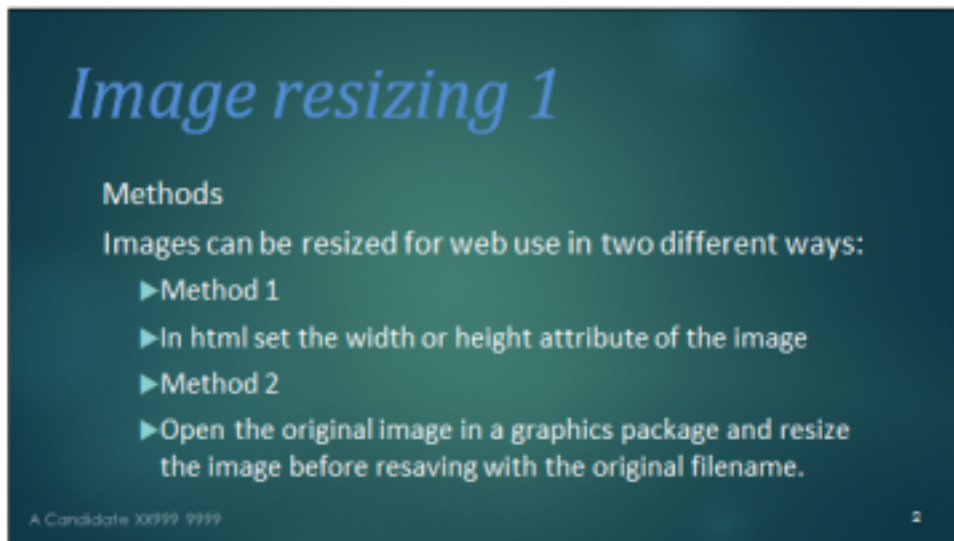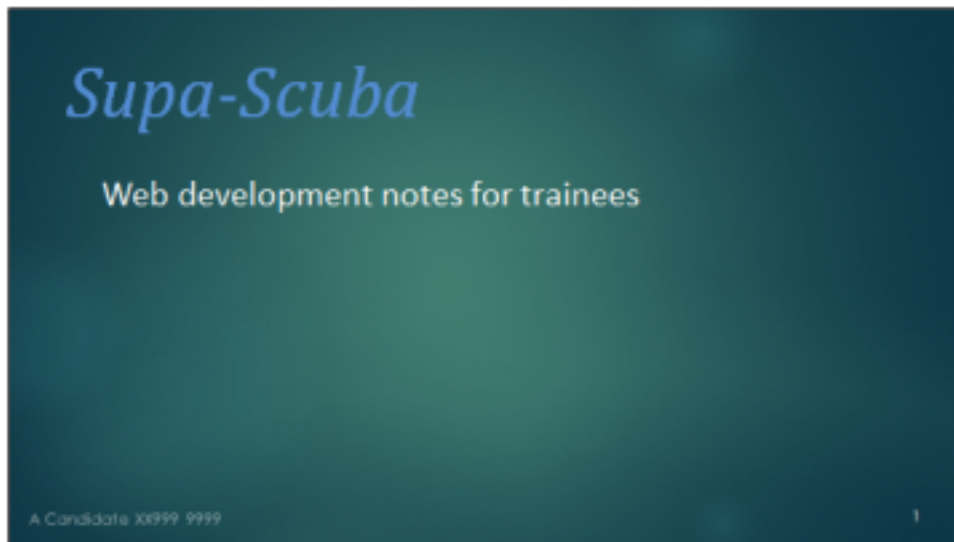
3 Images   Width set to 200 with aspect ratio   1 mark

```
  <tr valign=middle align=center>
    <td>
      <h2>Try a close up shark experience with gentle nurse
sharks</h2></td>
    <td><img src="j1332img5.jpg" width=200></td></tr>
  <tr valign=middle align=center>
    <td>
      <h2>Turtle experiences, join these gentle giants in their
natural habitat</h2></td>
    <td><img src="J1332img1.jpg" width=200></td></tr>
</table>
  <p><a href=" #top">Click here</a> to return to the top of the
page.</p>
  <p>Webpage last edited by candidate name, Centre number, candidate
number</p>
</body>
</html>
```

Slide 1:
Supa-Scuba
Web development notes for trainees
A Candidate XI999 9999   1

Slide 2:
Image resizing 1
Methods
Images can be resized for web use in two different ways:
▶Method 1
▶In html set the width or height attribute of the image
▶Method 2
▶Open the original image in a graphics package and resize the image before resaving with the original filename.
A Candidate XI999 9999   2

Methods	
Html set width or height attribute	1 mark
Resize and save in graphics package	1 mark
Advantages	
Higher resolution image uploaded	1 mark
Faster upload speed of image/page	1 mark

Candidate name   Centre number   candidate number

Image resizing 2

Reasons
- ▶ Method 1
- ▶ The image uploaded tends to be higher resolution so if copied becomes less pixelated than those reduced in size before uploading
- ▶ Method 2
- ▶ Faster upload speed of image/web page as reduced file size for transmission

A Candidate XX999 9999   5

Stylesheet evaluation

Evaluation of the attached stylesheet
- ▶ Blue colour theme matches the sea and background colour of images on page
- ▶ Background colour could be closer to that in the images if hexadecimal code was changed.
- ▶ Font sizes could be increased to improve readability
- ▶ Alignment of h2 could be made left or centre to improve readability

A Candidate XX999 9999   4

Candidate name   Centre number   candidate number

Methods
3 appropriate evaluations of the candidate's stylesheet for this page related to the purpose of the website

3 marks

Web development layers

The 3 layers

▶ Content layer to enter the content of a web page and create web page structure.

▶ Presentation layer to format whole web page/s or individual elements.

▶ Behaviour layer to enter scripting language to a web page or an individual element.

A Candidate XX999 9999

5

Content layer	1 mark
Content and structure of webpage	1 mark
Presentation layer	1 mark
Used for formatting & styles	1 mark
Behaviour layer	1 mark
For scripting/action/doing something within the page	1 mark

Candidate name   Centre number   candidate number

BLANK PAGE