INFORMATION TECHNOLOGY **9626/04**

Paper 4 Advanced Practical **May/June 2017**

MARK SCHEME

Maximum Mark: 110

Published

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Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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This document consists of **11** printed pages.

			Mark
Task 1a Graphics Creation	**Hungry Logo**	Logo has a square background with black border (200 × 200)	**1**
		Background has two evenly spaced stripes across	**1**
		Each stripe on background has a gradient fill within borders	**1**
		The gradient fill is black to white, top to bottom	**1**
		Two circles are present with thick black borders	**1**
		Text HUNGRY is present	**1**
		Text is fit to shape of circle	**1**
		Letter H is present inside smaller circle and has a gradient fill	**1**
		H gradient fill is white to black, top to bottom	**1**
		Logo is saved in a compressed file format	**1**
			10

			Mark
Task 1b Graphics Creation	**Bitmap:**	Valid answers include:	**6 from**
		Bitmap images are stored as a collection of tiny dots/squares/pixels	
		Each pixel is assigned a colour	
		The pixels are arranged in an order/pattern to create the image	
		Bitmap images can distort/lose quality when made larger or smaller	
	Vector:	Valid answers include:	
		Created using mathematical formulae/equations/properties	
		The mathematical formula construct lines and curves to create a shape	
		The shape is redrawn using the formula when made larger or smaller	
		Can use layers	
		Vector images do not lose quality when made larger or smaller	
			6

			Mark
Task 2 Animation	**Key frame animation**	Frame size set to 512 by 288	1
		Pale blue canvas/background at start	1
		2 second pause before animation	1
		The text 'HUNGRY' appears a letter at a time over 3 seconds	1
		The text is white, size 48pt and in a sans serif font	1
		Text 'HUNGRY' disappears	1
		The image 'Man.png' appears in bottom right corner (after 'Hungry' disappears)	1
		A white rectangle appears in the centre of the frame (after 'Hungry' disappears)	1
		The text 'Our staff are warm and welcoming' is displayed in the rectangle	1
		The text 'Our food is delicious' is then displayed in the rectangle	1
		Both text entries fade in and fade out smoothly	1
		The timing of each text animation (fade in/out) is 3 seconds	1
		Both text entries are black, size 32pt and in a sans serif font	1
		The 'Man.png' image and the rectangle plus text disappear after the text fades out	1
		The 'Hungry' logo appears small in centre of screen immediately	1
		The logo grows to fill centre of screen and remains for 2 seconds	1
		The logo rotates 360 degrees as it grows	1
		The animation of the logo animation growing and rotating is smooth	1
		The animation is set to loop	1
		The animation is exported in a suitable format for the web	1
			20

			Mark
Task 3 Database and file concepts	**Relational Database**	Customer and Bookings files have been imported	**1**
		Booking_ID is the primary key for the Bookings table	**1**
		Party_number and Number_of_courses fields are set to number	**1**
		Party_number is set to only accept numbers between 1 and 10 …	**1**
		...A suitable error message is set for the Party_number field validation	**1**
		Customer ID is set as the primary key for the Customer table	**1**
		1 to Many relationship is established between the tables on Customer ID fields	**1**
			7

			Mark
Task 4(a) Database and file concepts	**Database form**	The Hungry logo is shown at a suitable size at the top of the form and on the right	**1**
		The top section has a black background	**1**
		A suitable title is shown at the top of the form	**1**
		The title text is in a white sans serif font	**1**
		The form body has a grey background	**1**
		All other text and data are in a black sans serif font	**1**
		All the fields of a customer record are shown and all are completely visible	**1**
		Data (bookings) for single customers are shown in a sub-form	**1**
		The sub-form displays all the booking fields with the exception of the Customer_ID	**1**
		The sub-form is the correct size (5 rows) with no horizontal scroll bar …	**1**
		…the sub-form displays the vertical scroll bar only when necessary	**1**
		All labels and fields are sized and aligned as shown in the question paper	**1**
		Date entry via the form is disabled	**1**
		Suitable navigation and search buttons have been added under the sub-form	**1**
		The default form navigation controls are not visible	**1**
			15

			Mark
Task 4(b) Database and file concepts	**Advantages and disadvantages of a relational database** **Any 6 from:**	Valid answers include:	**6 from**
		A relational database has multiple tables that are linked together / A flat file database has one single table	
		A relational database is suitable for large amounts of data..from a number of different entities / A flat file is suitable for a small amount of data	
		A relational database can mean that duplicated data can be removed A flat file database may have duplicating data that is not efficient	
		Reducing data duplication reduces the amount of data which needs to be stored thus making the database smaller	
		A relational database reduces need for data entry and the risk of error	
		A relational database is more complex to create /A flat file database is easier to create	
	Answers not related to spreadsheets or manual systems	A relational database is more complex to maintain / it is easier to inadvertently corrupt data, leading to broken records.	
		A relational database may contain a number of tables and relationships / this effects the performance in responding to queries	
		A relational database makes it harder to extract information by inspection	
			6

			Mark
Task 5 Mail Merge	**Selection**	Evidence of Query/Selection method to select recipients is shown	**1**
		All the required fields are present	**1**
		Evidence of method to count number of bookings is shown	**1**
		Result of selection show only customers with >=2 Bookings	**1**
		Result of selection show only customers who booked >=2 Courses	**1**
	Hungry Merge document	The logo and the date (shown as a field) have been inserted	**1**
		Forname & surname mergefields have been inserted in the body of the **Letter** and in the voucher with the correct spacing	**1**
		A conditional mergefield has been inserted for Number_of_courses =3	**1**
		…the conditional text reads "We consider you a very valued customer."	**1**
		A conditional mergefield has been inserted for Number_of_courses =2	**1**
		…the conditional text reads "We value your custom at Hungry."	**1**
		An ELSE condition set for all other values………….	**1**
		…the conditional text reads "We hope to see you soon."	**1**
		A conditional mergefield has been inserted for displaying the correct discount …	**1**
		… the conditional text sets the discount at 10% for 2 courses	**1**
		… the conditional text sets the discount at 15% for 3 courses	**1**
		A mergefield for the count of bookings is inserted	**1**
			17

			Mark
Task 5 Mail Merge	**Discount Merged Letters**	The date is in the correct format (e.g. 01-01-2017)	**1**
		The forename and surname is shown in the body of the letter and in the voucher	**1**
		The letter to Daniel Chua shows 3 bookings, the text, 'We consider you a very valued customer.' and 15% discount	**1**
		The letter to Maria Velasquez shows 4 bookings, the text, 'We value your custom at HUNGRY.' and 10% discount	**1**
		The letter to David Ferrarin shows 2 bookings, the text, 'We hope to see you soon.' and 10 % discount	**1**
		The letter to Rachel Jackson shows 4 bookings, the 'We hope to see you soon.' text and 15% discount	**1**
		The letter to Fatima Hedge shows 2 bookings, the text, 'We hope to see you soon.' and 10% discount	**1**
		All the letters are 'proofed' and fit for purpose	**1**
			8

			Mark
Task 6a Programming for the web	**Online form**	The Forename form field validated to not be blank	**1**
		The alert displays suitable message for blank Forename field	**1**
		Programmer's comment inserted at Forename validation stage of script	**1**
		The Surname form field validated to not be blank	**1**
		The alert displays suitable message for blank Surname field	**1**
		Programmer's comment inserted at Surname validation stage of script	**1**
		The Telephone number form field validated to not be blank	**1**
		The alert displays suitable message for blank Telephone number field	**1**
		Programmer's comment inserted at Telephone number validation stage of script	**1**
		The Number in party form field validated to not be blank	**1**
		The alert shows for blank Number in party field	**1**
		The alert shows for numbers outside 1-10 range	**1**
		Alert displays a suitable message for Number in party error	**1**
		Programmer's comment inserted at Number in Party validation stage of script	**1**
		No error message if all fields completed correctly	**1**
		The form is intact and as provided (**if any code added)**	**1**
			16

			Mark
Task 6(b) Programming for the web	**Counting and condition loops** **Any 5 from**	Valid answers include:	**5 from**
		Counting loops repeat a set number of times	
		A count is added to/updated each repetition until the set count total is met	
		A condition loop repeats till a condition is met	
		A condition loop repeats until a condition stops being met	
		The condition is set and tested in each loop	
		Any valid example used for a counting loop e.g. For loop	
		Any valid example used for a condition loop e.g. While loop	
			5
		Total Paper	**110**