National 5
Coursework
Assessment Task

# National 5 Computing Science
# Assignment
# Finalised Marking instructions

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# Marking instructions

## General marking principles

This information is provided to help you understand the general principles that must be applied when marking candidate responses in this assignment. These principles must be read in conjunction with the specific marking instructions, which identify the key features required in candidate responses.

a Marks for each candidate response must **always** be assigned in line with these general marking principles and the specific marking instructions for this assessment.

b Marking should always be positive. This means that, for each candidate response, marks are accumulated for the demonstration of relevant skills, knowledge and understanding: they are not deducted from a maximum on the basis of errors or omissions.

c Deputy Principal Assessors will provide guidance on marking specific candidate responses which are not covered by either the principles or specific marking instructions

# Specific marking instructions

| Task | Expected response | Additional guidance | Marks available | |
|---|---|---|---|---|
| **1** | **Software design and development** | | | |
| 1a | 1 mark each for:<br>♦ If structure correct (3 if statements or if with elseif statements)<br>♦ if conditions correct for each size of dog<br>♦ appropriate messages are stored | Weights ranges may be indicated as:<br>♦ between 110 and 140<br>♦ from 110 to 140<br>♦ >=110 and <=140<br><br>Additional else for 'not recommended' statement is not required<br><br>If display is not indicated assume the message is stored<br><br>Ignore errors in design shapes | 3 | Design |

| Task | Expected response | | Additional guidance | Marks available | |
|---|---|---|---|---|---|
| **1** | **Software design and development** | | | | |
| 1b | Array used to store each weight | | Must be used and not simply declared | 1 | Implementation |
| | loop 5 times | | Loop must contain code | 1 | |
| | Input Validation | Input validation — conditional while loop used | | 1 | |
| | | Input validation — correct loop condition | < 0 or > 200 | 1 | |
| | | Input validation — input of weight within loop | Award 1 mark if implemented without input validation loop | 1 | |
| | | Input validation — error message displayed inside while loop | | 1 | |
| | Running total inside loop | | | 1 | |
| | selection statements | small and total between 110 and 140 | If conditions have a working range but have one repeating error in the conditions,<br>>110 and <140<br>>330 and <440<br>>690 and <900<br>award 2 marks out of 3.<br><br>Check operators carefully as incorrect use of AND, OR, NOT may invalidate condition | 3 | |
| | | medium and total between 330 and 440 | | | |
| | | large and total between 690 and 900 | | | |
| | | Structure matches design (nested or else ifs used) | | 1 | |
| | Calculate average weight | | | 1 | |
| | Display 5 weight inputs within a second loop | | | 1 | |
| | Display total value and the correct stored message from supplied design | | No need to display total with additional text to construct a message | 1 | |
| | Display rounded average to 1dp | | No need to display rounded average with additional text to construct a message | 1 | |

| Task | Expected response | Additional guidance | Marks available | |
|---|---|---|---|---|
| **1** | **Software design and development** | | | |
| 1ci | Printed evidence of test run including all inputs and the output message displayed. | Required inputs:<br>134.23<br>74.99<br>25.31<br>112.33<br>53.78<br>medium<br><br>Required output message:<br>This weight of food is suitable for your medium dog.<br><br>Output could be used as evidence of inputs. | 1 | Testing |
| 1cii | 1 mark each for:<br><br>♦ Test 1 Expected Result - This weight of food is not recommended for the size of dog<br>♦ Test 2 Inputs – Weights 1 to 5 should total between 110 and 140 size of dog should be small | Expected output could also be message from candidate's code. | 2 | |
| 1d | Evaluation of the following for:<br><br>(efficiency) 1 mark each for:<br>♦ identifying efficient code in own program<br>♦ justify why it is efficient<br><br>(robustness) 1 mark:<br>♦ how robust the program is, including if it copes with unexpected inputs<br><br>(readability) 1 mark:<br>♦ readability — comment on one aspect of readability in the candidate's own code | Efficiency examples could include:<br>♦ use of array<br>♦ nested ifs<br>♦ running total inside same loop as inputs<br>♦ use of a loop<br><br>Evaluation must contain an element of evaluation rather than simple statements of terms. For example "I have used white space to highlight structures in my program" not "I have used white space". The candidate's code must also show evidence of this for a mark to be awarded. | 4 | Evaluation |

| Task | Expected response | Additional guidance | Marks available | |
|---|---|---|---|---|
| **2** | **Database design and development** | | | |
| 2a | 1 mark for identifying:<br>♦ Reference code<br><br>1 mark for identifying the following seven property details:<br>♦ House number<br>♦ Street<br>♦ City<br>♦ Postcode<br>♦ Asking price<br>♦ Estimated property value<br>♦ Number of bedrooms | Names given to property details could differ from bullet list.<br><br>Allow SellerID to be included in the property details (as a foreign key). | 2 | Analysis |
| 2b | 1 mark each for identifying:<br><br>♦ Both Primary Keys<br>♦ the Foreign key | PK<br>Seller.SellerID<br>Property.PropertyRef<br>FK<br>Property.SellerID | 2 | Design |
| 2ci | 1 mark each for:<br><br>♦ `UPDATE Property SET askingPrice = 112000`<br>♦ `WHERE propertyRef = "DUN-101";` | " can be '<br><br>Alternative conditions that will give the same result (as these are all unique values in the database associated with this record):<br>♦`WHERE postcode = "DD10 0QM"`<br>♦`WHERE askingPrice = 105500`<br>♦`WHERE street = "George Avenue"`<br>♦`WHERE SellerID = "3896"`<br>♦`WHERE houseNumber = 99`<br>♦`WHERE estimatedValue = 111000` | 2 | Implementation |

| Task | Expected response | Additional guidance | Marks available | |
|---|---|---|---|---|
| **2** | **Database design and development** | | | |
| 2cii | 1 mark each for:<br>♦ `INSERT INTO Seller(sellerID, sellerName, sellerAddress, email, telephoneNumber)`<br>♦ `VALUES ("1502", "Eve Grace", "128 Cameron Drive Edinburgh EH4 5DS", "EveGrace@yehoo.net", "0131 279100");` | Also accept<br>♦ `INSERT INTO Seller`<br>♦ `VALUES (1502, "Eve Grace", "128 Cameron Drive Edinburgh EH4 5DS", "EveGrace@yehoo.net", "0131 279100");`<br><br>Although sellerID is a text field the insert statement will still execute if the "" are not included around 1502 | 2 | Implementation |
| 2ciii | 1 mark each for:<br>♦ `SELECT email, telephoneNumber, postcode FROM Seller, Property`<br>♦ `WHERE seller.sellerid = property.sellerid`<br>♦ `AND numberOfBedrooms = 3`<br>♦ `AND askingPrice < 150000;` | SELECT - order of fields may be different from that shown<br><br>The order of the conditions in the WHERE clause is not important<br><br>Do not award a mark if SQL created by application: MS Access example<br>`SELECT Seller.email, Seller.telephoneNumber, Property.postcode FROM Seller INNER JOIN Property ON Seller.sellerID = Property.sellerID WHERE (((Property.numberOfBedrooms)= 3) AND ((Property.askingPrice) <150000));` | 4 | |
| | Expected Output for 2ciii | | | |

| email | telephoneNum | postcode |
|---|---|---|
| ksimp@eyecloud.com | 01382 52196 | DD9 8PN |
| ckane@msnopy.com | 0131 676221 | EH48 8MH |
| marioph@liive.com | 01738 66045 | IV47 2YQ |
| Humphry@liive.com | 01738 48908 | IV10 3RH |
| cpark@eyecloud.com | 01738 31943 | PH38 9TA |
| terry@aeioul.com | 01738 80979 | PH9 7GU |
| boftx@coldmail.com | 01786 19187 | FK11 4TA |
| iansutherland@gmile.com | 01786 55483 | FK10 9MG |

| Task | Expected response | Additional guidance | Marks available | |
|---|---|---|---|---|
| **2** | **Database design and development** | | | |
| 2d | 1 mark each for:<br>♦ town field doesn't exist<br>♦ price field doesn't exist | | 2 | Testing |
| 2e | 1 mark for stating the database meets all the requirements. | If the functional requirements are listed in the answer, all four are required. | 1 | Evaluation |

| Task | Expected response | Additional guidance | Marks available | |
|---|---|---|---|---|
| **3** | **Web design and development** | | | |
| 3a | End-user requirements could include any one of the following for 1 mark:<br><br>The user would like to..<br>♦ see images of the cake designs<br>♦ watch the video of a cake being iced<br>♦ view different types of cake<br>♦ find out how to register for rewards<br><br>Functional requirements could include any two of the following for 1 mark each:<br><br>The website should…<br>♦ display images of cakes<br>♦ display information about cake categories<br>♦ play a video of a cake being iced<br>♦ provide navigation between pages<br>♦ provide external links to similar sites<br>♦ provide information about rewards<br>♦ provide information about the company (title/slogan)<br>♦ provide information about the company promise | | 3 | Analysis |

| Task | Expected response | Additional guidance | Marks available | |
|---|---|---|---|---|
| **3** | **Web design and development** | | | |
| 3b | 1 mark each for:<br>♦ consistent layout<br>♦ content for 'recommend a friend' page | The consistent layout should indicate:<br>♦ original banner (company name, slogan, logo)<br>♦ space for additional content<br>♦ bottom link section (home)<br><br>The content section should indicate:<br>♦ message(s)<br>♦ an image<br>♦ (external) link | 2 | Design |
| 3c | Using the printout of the orders HTML file, confirm the following for 1 mark each:<br>♦ add the following in correct place:<br>o h1 heading<br>o motto paragraph<br>o bannerimage.jpg<br>o home page link<br>♦ four messages<br>♦ working link to external page<br>♦ graphic inserted to correct size 300x240 | Four messages<br>♦ you will receive a free slice of cake when a friend purchases<br>♦ you and your friend will receive 20% off<br>♦ most orders are delivered within three days<br>♦ take part in the 'Recommend a Friend' scheme by emailing their friend's name and email address<br><br>Graphic could be sized in CSS. | 4 | Implementation |
| 3d | Video added to home.html | `<video width="320" height="240">`<br>`  <source src="cakeVideo.mp4" >`<br>`</video>` | 1 | |

| Task | Expected response | Additional guidance | Marks available | |
|---|---|---|---|---|
| **3** | **Web design and development** | | | |
| 3e | Using the printout of the CSS file, confirm the following for 1 mark each:<br>♦ Three divs now the same colour DeepSkyBlue (#00BFFF)<br>♦ Company motto text now Arial and size 22<br>♦ external link text orangeRed (or #ff4000) and size 16 | Check with HTML that the CSS is implemented for the three changes.<br><br>Do not award a mark if link 'a' style is changed to orangeRed. An id or class should be used to only change the external link colour. | 3 | Implementation |
| 3f | 1 mark each for:<br><br>♦ statement that their website is/ is not fit for purpose, matching their website<br>♦ justification of above (all the requirements have/have not been implemented) | If an error in 3c and 3d mean the functional requirements aren't met, do not award a mark if the candidate states their code is fit for purpose.<br><br>If the candidates website is fit for purpose do not award a mark if the candidate states it is not fit for purpose.<br><br>If the functional requirements are listed in the answer, all five are required. | 2 | Evaluation |

| Task 1 – Software Design and Development | | Marks Available | Marks Awarded |
|---|---|---|---|
| **1a – Design** | IF structure | 1 | |
| | All conditions | 1 | |
| | Stored message | 1 | |
| | | | **/3** |

| **1b - Implementation** | | | |
|---|---|---|---|
| Array used to store each weight | | 1 | |
| loop 5 times | | 1 | |
| Input validation | Conditional loop used | 1 | |
| | Correct loop condition | 1 | |
| | Input of weight (within loop) | 1 | |
| | Error message displayed | 1 | |
| Running total inside loop | | 1 | |
| Selection | Small and between 110 and 140 | 1 | |
| | Medium and between 330 and 440 | 1 | |
| | Large and between 690 and 900 | 1 | |
| | if structure matches design | 1 | |
| Calculate average weight | | 1 | |
| Display 5 weight inputs within a second loop | | 1 | |
| Display total value and stored message | | 1 | |
| Display rounded average to 1dp | | 1 | |
| | | | **/15** |

| **1c(i) – Testing** | Evidence of inputs and outputs | 1 | **/1** |
|---|---|---|---|

| **1c(ii) – Testing** | Test 1 - food not recommended | 1 | |
|---|---|---|---|
| | Test 2 – total weight 110-140, small | 1 | |
| | | | **/2** |

| **1d – Evaluation** | Efficiency (identify, justify) | 2 | |
|---|---|---|---|
| | Robustness | 1 | |
| | Readability | 1 | |
| | | | **/4** |

| Task 2 – Database Design and Development | | Marks Available | Marks Awarded |
|---|---|---|---|
| **2a – Analysis** | Reference code | 1 | |
| | Seven property details | 1 | |
| | | | **/2** |

| | | | |
|---|---|---|---|
| **2b – Design** | Both Primary keys | 1 | |
| | Foreign key | 1 | |
| | | | **/2** |

| | | | |
|---|---|---|---|
| **2c(i) – Implementation** | UPDATE statement | 1 | |
| | WHERE clause | 1 | |
| | | | **/2** |

| | | | |
|---|---|---|---|
| **2c(ii) – Implementation** | INSERT statement | 1 | |
| | VALUES statement | 1 | |
| | | | **/2** |

| | | | |
|---|---|---|---|
| **2c(iii) – Implementation** | SELECT statement | 1 | |
| | WHERE (join) | 1 | |
| | AND (numberOfBedrooms = 3) | 1 | |
| | AND (askingPrice < 150000) | 1 | |
| | | | **/4** |

| | | | |
|---|---|---|---|
| **2d – Testing** | town should be city | 1 | |
| | price should be askingPrice | 1 | |
| | | | **/2** |

| | | | |
|---|---|---|---|
| **2e – Evaluation** | fitness for purpose | **1** | **/1** |

| Task 3 – Web Design and Development | | Marks Available | Marks Awarded |
|---|---|---|---|
| **3a – Analysis** | End-user requirement | 1 | |
| | Functional requirements | 2 | |
| | | | **/3** |

| | | | |
|---|---|---|---|
| **3b – Design** | Consistency of design | 1 | |
| | Additional content | 1 | |
| | | | **/2** |

| | | | |
|---|---|---|---|
| **3c – Implementation HTML** | Heading, motto, logo, home | 1 | |
| | Four messages | 1 | |
| | External link | 1 | |
| | Graphic inserted – 300 x 240 | 1 | |
| | | | **/4** |

| | | | |
|---|---|---|---|
| **3d – Implementation** | Video inserted | 1 | **/1** |

| | | | |
|---|---|---|---|
| **3e – Implementation CSS** | Divisions same colour | 1 | |
| | Text formatting | 1 | |
| | External link text | 1 | |
| | | | **/3** |

| | | | |
|---|---|---|---|
| **3f - Evaluation** | Fitness for purpose statement | 1 | |
| | Justification of above | 1 | |
| | | | **/2** |

| | Marks Available | Marks Awarded |
|---|---|---|
| **Assignment total** | **40** | |

**[END OF MARKING INSTRUCTIONS]**