**DEGREE:** BSc (Hons) Computer Science and Digitisation

**Module:** Statistics for Data Analysis

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**Assignment Title:** Descriptive and Inferential Statistics for Strategic Business Decision-Making

**Assignment Type:** Written assignment

**Word Limit: 2000 words (+/- 200)**

**Weighting:** 100%

**Issue Date:**

**Submission Date:**

**Feedback Date:**

**Issued by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Plagiarism:**

When submitting work for assessment, students should be aware of the InterActive/Canvas guidance and regulations in concerning plagiarism. All submissions should be your own, original work. Please note that you must not submit the same assignment for two different modules within your course.

**You must submit an electronic copy of your work. Your submission will be electronically checked.**

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| **Learner declaration** |
| **I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.**  **Student signature: Date:** |

**Harvard Referencing:**

The Harvard Referencing System must be used. The Wikipedia, UKEssays.com or similar websites must **not** be used or referenced in your work.

**Introduction**

**Learning Outcomes:**

**LO1.** Demonstrating an understanding and concepts of descriptive statistics which can be used to analyse the data better.

**LO2**. Demonstrating an understanding and concepts of inferential statistics which can be used to analyse the data better and infer the business value from this data.

**LO3.** Implementing statistical tests to implement inferential statistics and derive insights from a sample for the population parameters

**Assessment Criteria: Weighting 100%**

**2000 words**

**Tasks**

1. Write an introduction for your written assignment.
2. You are provided with data on air quality. Perform the following tasks.
3. Clean the dataset by finding the noises, outliers using statistical methods and fixing missing values.
4. Use statistical methods to describe the distribution of the data.
5. Normalize a dataset and use data visualization techniques to extract information from the dataset.
6. Comment on inferential statistics regarding this data.
7. Conclude by summarizing key concepts.

**GUIDANCE ON ASSESSMENT**

All materials must be properly referenced under Harvard conventions. The length required is 2000 words with tasks equally weighted. The writing style should be formal academic / report writing style with in-text referencing to support your comments and observations. Originality, quality of argument and good structure are required. The written assignment should demonstrate sound understanding and ability to apply knowledge and theory of statistics. Additional marks being awarded for juxtaposition and insight of issues.

**Grading Criteria**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Generic Criteria** | **90 - 100** | **80 - 89** | **70 - 79** | **60 - 69** | **50 - 59** | **40 - 49** | **30 - 39** | **0 - 29** |
| **Level 4** | **Knowledge of contexts, concepts, technologies and processes**  The extent to which knowledge is demonstrated:  *relevant contextual or theoretical issues are identified, defined and described*  *historical or contemporary practices are identified, defined and described*  *appropriate technologies, methods and processes are identified, defined and described* | Outstanding breadth of knowledge of fundamental contextual and theoretical issues and critical concepts and their relationship to historical and contemporary practices  Extensive knowledge of relevant and specialist technologies and processes | Extensive knowledge of fundamental contextual and theoretical issues and critical concepts and a widening appreciation of historical and contemporary practices  In depth and broadening knowledge of appropriate technologies and processes | Significant knowledge of fundamental contextual and theoretical issues and critical concepts and a widening appreciation of historical and contemporary practices  Significant knowledge of appropriate technologies and processes | Confident familiarity with fundamental contextual and theoretical issues and critical concepts  Thorough knowledge of appropriate technologies and processes | Familiar with fundamental contextual and theoretical issues and critical concepts  Sound knowledge of appropriate technologies and processes | Adequate knowledge of fundamental contextual and theoretical issues and critical concepts  Adequate knowledge of appropriate technologies and processes | Limited knowledge of fundamental contextual and theoretical issues and critical concepts  Limited knowledge of appropriate technologies and processes | Little or no knowledge of fundamental contextual and theoretical issues or critical concepts  Little or no knowledge of appropriate technologies or processes |
| **Understanding through application of knowledge**  The degree to which research methods are demonstrated:  *relevant knowledge and information is compared, contrasted, manipulated, translated and interpreted*  *knowledge and information is selected, analysed, synthesized and evaluated in order to generate creative ideas, practices, solutions, arguments or hypotheses* | Relevant knowledge is explored and interpreted when proposing solutions to projects and problems which demonstrate evidence of independent thought  Outstanding ability to analyse and synthesise knowledge to produce own creative practice in standard situations and to evaluate results | Deep level of comprehension and exploration of relevant knowledge in seeking solutions to projects or problems  Outstanding ability to analyse and synthesise knowledge in order to produce creative practice in standard situations and to evaluate the results | Deep level of comprehension of relevant knowledge in seeking solutions to projects or problems  Strong ability to apply and analyse knowledge to produce creative practice in standard situations, with some evaluation of the results | Strong comprehension of relevant knowledge in seeking solutions to projects or problems  Sound ability to apply and analyse knowledge to produce creative practice in standard situations | Sound comprehension of relevant knowledge in seeking solutions to projects or problems  Sound ability to apply knowledge to produce creative practice in standard situations | Surface-level comprehension of relevant knowledge in seeking solutions to projects or problems  Competent application of knowledge to the production of creative practice in standard situations | Incomplete comprehension of relevant knowledge in seeking solutions to projects or problems  Limited ability to apply knowledge to produce creative practice in standard situations | Little or no comprehension of relevant knowledge in seeking solutions to projects or problems  Little or no ability to apply relevant knowledge to produce creative practice in standard situations |
| **Application of technical and professional skills**  The degree to which:  *appropriate materials and media are selected, tested and utilised to realise and present ideas and solutions*  *appropriate technologies, methods and processes are demonstrated*  *transferable, professional skills are effectively demonstrated*  *self management and independent learning are demonstrated* | Accomplished and fluent application of appropriate practical and technical skills  Outstanding application of appropriate transferable and professional skills  Significant ability to learn independently and critically evaluate own progress using a wide range of feedback sources | Relevant, accomplished and fluent application of basic practical and technical skills  Outstanding application of fundamental transferable and professional skills  Substantial ability to work independently and use feedback to reflect critically on own progress | Relevant and accomplished application of basic practical and technical skills  Highly effective application of fundamental transferable and professional skills  Strong ability to work independently and use feedback to plan future tasks effectively | Strong application of basic practical and technical skills  Strong application of fundamental transferable and professional skills  Evidence of developing well as an independent learner | Sound application of basic practical and technical skills  Sound application of fundamental transferable and professional skills  Evidence of beginning to develop as an independent learner | Competent application of practical and technical skills  Competent application of fundamental transferable and professional skills  Adequate evidence of beginning to develop as an independent learner | Rudimentary application of basic practical and technical skills  Limited application of fundamental transferable and professional skills  Limited evidence of ability to learn independently | Scant application of basic practical and technical skills  Ineffective application of fundamental transferable and professional skills  Little or no evidence of ability to learn independently |