Teaching Block 1 – Optional Unit Coursework Brief

Part A – Unit Specific Coursework

Unit Number: COMSM0101
Unit Name: Internet Economics and Financial Technology (with Coursework)
Unit Director: John Cartlidge

Assignment Name: Coursework: Report + Code

Assignment Weighting: 100%

Assignment Description:

8-page technical report on exploration and development of trading agent algorithms using the Bristol Stock Exchange (BSE). For full coursework specification details, see file: *IEFT-CW-22.pdf.*

You should use the latest version of BSE (v1.7.1):
https://github.com/davecliff/BristolStockExchange/archive/refs/tags/v1.7.1-beta.zip

This coursework is individual work. You must not collaborate with other students, which would be considered cheating.

Support provided to students during coursework period:

The following support is available during the coursework period:

- BB Forum for Questions
- Bookable Drop-in Sessions (Weekly with TA, 3-5pm Tuesday)

Please note that teaching team will be able to advise on technical problems you are facing (e.g., installing software) and will be able to clarify requirements (i.e., explain what you are expected to do) but will ***not*** provide feedback on work in progress or suggest directions for future work.

Submission Details:

Blackboard submission:

- 8-page report (Turnitin)
- Submission of code (one ZIP file)

Coursework must be submitted by **1pm on Thursday 8th December (Week 11)** at the very latest. The intention is that you submit by 12pm and keep the last hour as emergency reserve for, e.g., technical problems. In case of problems with your submission, you must e-mail coms-info@bristol.ac.uk before the 1pm final deadline to avoid your work being counted as late.

Marking Criteria (to be provided to students):

Grade Range	Descriptor
40-49, a.k.a. 3rd	A report that details your exploration and evaluation of PRDE parameters *k* and *F* but has limitations in some of the following areas: incorrect formatting, poor motivation of experimental design, missing details in experimental method (that would make it difficult/impossible to replicate), visualisations used are not appropriate, statistical tests are missing or incorrectly applied, conclusions drawn are incorrect.
50-59, a.k.a. 2.ii	A good report detailing your exploration and evaluation of PRDE parameters *k* and *F*, including motivation of experimental design, detail of experimental methodology, visualisation and analysis of results, and conclusions drawn. The report demonstrates correct understanding of topics covered in the unit.
60-69, a.k.a. 2.i	A very good report, correctly formatted, that describes explorations and evaluation of PRDE parameters *k* and *F*, including motivation of experimental design, well considered design choices, detail of experimental methodology at a level that enables replication, appropriate visualisation and statistical analysis of results, and appropriate conclusions drawn. The report should also demonstrate good understanding of topics covered on the unit, and additional understanding of concepts not directly taught in lectures or assessments.
70+, a.k.a. 1st	For a mark of 70 and above, your report must meet the description, above. In addition, your report must **also** present your work on extending PRDE to improve performance. As an extension, you can choose to draw inspiration from multi-armed bandits (MAB); or you could use a revised/extended form of differential evolution such as JADE; or you could choose any other form of contemporary machine learning algorithm to explore. The choice is yours. Once you have introduced your new/extended algorithm, you should then attempt to demonstrate that your new or extended trader outperforms the original PRDE. Your report must include a detailed description of your new/extended trader, a description of your design and execution of experiments, appropriate visualisations of your results, and appropriate statistical tests used to determine whether your new trader-agent is ***more profitable*** than the original PRDE. Finally, appropriate conclusions must be drawn. If you attempt this extension, you should clearly delineate this work by beginning a new section called “Extending PRDE” or similar.

We will be assessing your report using the following criteria:

- Good use of written language, formatting, and presentation of work.
- Appropriate style of referencing.
- Good understanding of trading agents and BSE platform demonstrated.
- Good motivation of experimental design and appropriate design choices.
- Experimental methodology is detailed enough to enable replication.
- Appropriate visualisation and statistical analysis.
- Appropriate conclusions drawn.
- Extension (for first class)
    - Good understanding of topics not covered on the unit
    - Appropriate implementation of topics not covered on the unit
    - Appropriate methodology for comparison experiments, appropriate visualisation and statistical analysis, appropriate conclusions drawn.

<u>Part B – Universal Coursework Details (please do not alter)</u>

Deadline

The deadline for submission of all optional unit assignments is 13:00 on Thursday 8th of December (the University discourages Friday deadlines !). Students should submit all required materials to the "Assessment, submission and feedback" section of Blackboard - it is essential that this is done on the Blackboard page related to the "With Coursework" variant of the unit.

Time commitment

You are expected to work on both of your optional unit courseworks in the 3-week coursework period as if it were a working week in a regular job - that is 5 days a week for no more than 8 hours a day. The effort spent on the assignment for each unit should be approximately equal, being roughly equivalent to 1.5 working weeks each. It is up to you how you distribute your time and workload between the two units within those constraints.

You are strongly advised NOT to try and work excessive hours during the coursework period: this is more likely to make your health worse than to make your marks better. If you need further pastoral/mental health support, please talk to your personal tutor, a senior tutor, or the university wellbeing service.

Academic Offences

Academic offences (including submission of work that is not your own, falsification of data/evidence or the use of materials without appropriate referencing) are all taken very seriously by the University. Suspected offences will be dealt with in accordance with the University's policies and procedures. If an academic offence is suspected in your work, you will be asked to attend an interview with senior members of the school, where you will be given the opportunity to defend your work. The plagiarism panel are able to apply a range of penalties, depending the severity of the offence. These include: requirement to resubmit work, capping of grades and the award of no mark for an element of assessment.

Extenuating circumstances
If the completion of your assignment has been significantly disrupted by serious health conditions, personal problems, periods of quarantine, or other similar issues, you may be able to apply for consideration of extenuating circumstances (in accordance with the normal university policy and processes). Students should apply for consideration of extenuating circumstances as soon as possible when the problem occurs, using the following online form:
https://www.bristol.ac.uk/request-extenuating-circumstances-form

You should note however that extensions of any significant length are not possible for optional unit assignments. If your application for extenuating circumstances is successful, you may be required to retake the assessment of the unit at the next available opportunity (e.g. during the summer reassessment period).

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