UNIVERSITY OF CAMBRIDGE
Cambridge Centre for Teaching and Learning

Assessment design and strategies for student learning

Foundations in Assessment paper 3

March 2022

This briefing paper is the third in a series planned to supplement Cambridge's *Framework for Assessment* by providing fuller definitions and explanations of key terms and concepts around assessment practices.

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1. Introduction: assessment design options in the Cambridge context

The *Framework for Assessment* (2022-23) presents details of approved modes and methods of assessment, as well as advice about steps to follow to make further changes. It also encourages Faculties and Departments to consider other discipline-specific or creative assessment modes or methods not captured in the approved framework, while noting that assessment needs to be designed to align with a course's or paper's learning outcomes.

This means that effective design of assessment ensures that course aims or learning outcomes are addressed through the assessment of the course and/or through the assessment of the course's constituent units of study or individual papers. The weighting, volume, timing and types of assessment tasks, as well as the clarity of assessment criteria, are important factors in enabling students to demonstrate their achievement of the intended learning outcomes and in maintaining the standards of degree awards.

A clearly planned and communicated assessment strategy is valuable as it facilitates feedback, reflection and dialogue between students and supervisors, as well as amongst the whole course teaching team.

Assessment drives student learning	Assessment is more than grades	Assessment should be strategic
• How we design and communicate expectations for [both formative and summative] assessment is a key influence on how students learn. (Ramsden 1997) • The assessment strategy of a particular course or paper has a major impact on student activity and influences their approach to learning e.g. exams with fact-based questions encourages rote or 'surface' learning, rather than 'deep' and sustainable learning. (Biggs 2003)	• The intended learning outcomes (the knowledge and skills we want students to acquire and be able to demonstrate), as well as clearly communicated criteria for success, are at the heart of a well-coordinated assessment strategy. (Boud *et al* 2013) • Assessment in higher education is neither value-neutral nor culture-free: within its procedures, structures and systems it codifies cultural, disciplinary and individual norms, values and knowledge hierarchies. (Hanesworth 2019)	• Developing a consistent assessment strategy – with coherence between strategy and practice – is dependent on a clear and widely agreed view of the role and position of assessment in relation to teaching and learning. (Price *et al* 2010) • Iterated or scaffolded assessment tasks give students the opportunity to see how assessment criteria are applied by teachers and move towards using those criteria in their own learning. (Morell 2019)

Figure 1 Key premises of assessment drawn from literature

2. Assessment strategies: designing for student learning

An assessment strategy is the coordinated set of practices and processes involving assessment. In involves a whole-course level rationale that is integrative and proactive "rather than an atomised response to individual assessment issues" (Advance HE, 2020 p.5). A strategic approach to assessment design means paying attention to how and whether current and new assessment methods are relevant, valid and inclusive, so that all students are confident that they have been given opportunities to develop and demonstrate their acquisition of relevant knowledge and skills, and are then appropriately evaluated on their learning.

This means that any choices you make about formative or summative tasks demonstrate your conceptual and strategic approach to assessment. For instance, tasks that occur at the end of year may be useful in providing a target for learning, or an opportunity for **assessment *of* learning**. However, we know that students learn in anticipation of assessment as much as they learn from the tasks themselves. Some of this learning occurs from their own realisation of what they can or cannot do but, importantly, they also learn from the helpful comments provided to them by others. The role of **assessment *for* learning**, often called formative assessment, needs careful design and planning to ensure that key learning outcomes are addressed and that engagement in the task prompts the kind of learning most desired.

Assessment *of* learning:
This is how we may traditionally view assessment, where students' end of paper or year performance allows us to make judgements of their summative achievements. The data produced in the evaluation process is mainly oriented towards the benefit of the University since it is used for certification or progression purposes and acts as a focus for quality assurance and institutional accountability; for instance, the number of first-class degrees awarded. It performs a primarily evaluative function in measuring student achievement, and has been critiqued for the way it positions students as passive subjects in the assessment process and for encouraging rote learning.

Assessment *for* learning:
This is formative and diagnostic, providing information about student achievement which allows teaching and learning activities to be adapted in response to the needs of the learner (Sambell *et al*, 2013). If assessment is not 100% weighted towards the end of the paper or year, then a sequence of summative assessment tasks might incrementally provide students with opportunities to build on from the previous task. Assessment *for* learning performs a developmental function, where the assessment task – whether formative or summative - helps to contribute to how students learn and their skills development. Feedback on students' progress and performance on assessment is a vital component of assessment for learning.

Assessment *as* learning:
This is where assessment is embedded in all aspects of a course rather than being something that just happens at the end. It is similar to assessment for learning, in that it actively involves students' engagement in self-assessment and their active participation in directing their own learning, where students are encouraged to think about the way they learn. It places emphasis on student reflection where they regulate and monitor their learning progress. As well as student reflection, assessment *as* learning often involves self- and peer-assessment. Importantly, it involves familiarising students with the learning outcomes and marking criteria, so that they are encouraged to focus on the knowledge and skills that they must demonstrate, rather than grades.

Figure 2 Three conceptual approaches to understanding the purpose and role of assessment

The assessment strategy of a particular course or paper will have a major impact on student learning. That is, a well-designed assessment strategy, in tandem with multiple teaching and learning approaches,

complements individual students' different ways of learning by enabling them to experience new techniques and develop and practise new skills and qualities. On the other hand, there is evidence of a significant negative 'backwash effect' (Biggs, 2003) on student learning and achievement from poorly coordinated assessment strategies. That is, students may be encouraged to take a 'surface' approach to their learning if the assessment drives them to focus on memorisation of knowledge rather than grasping the overall meaning of their studies, so that they "develop limited conceptual understanding of the material and have poor-quality learning outcomes" (Bloxham & Boyd, p. 17). Additionally, opportunities to enhance students' effort, approach and outcomes can be overlooked when formative assessment practices in supervisions and practicals are not clearly aligned to the assessment expectations, when supervisors and teachers are not encouraged to pay attention to these specific expectations in their feedback and learning activities, or when available data about students' learning gathered through formative assessment is not shared across the course team.

3. Assessment design strategies

Whole-of-course assessment design

One of the key principles underpinning the guidance of the UK Quality Assurance Agency for Higher Education (UK QAA) is that "assessment design is approached holistically" (Principle 3, p.5). That is, a whole-of-course approach should be taken to assessment design, so that it is designed to develop across stages as the student develops, according to levels of study, and in light of the overall intended course learning outcomes. The weighting, volume, timing, methods and modes of assessment tasks, as well as the clarity of assessment/marking criteria provided to students and staff, are all important factors in enabling students to demonstrate their achievement of the intended learning outcomes while also maintaining the standard of awards.

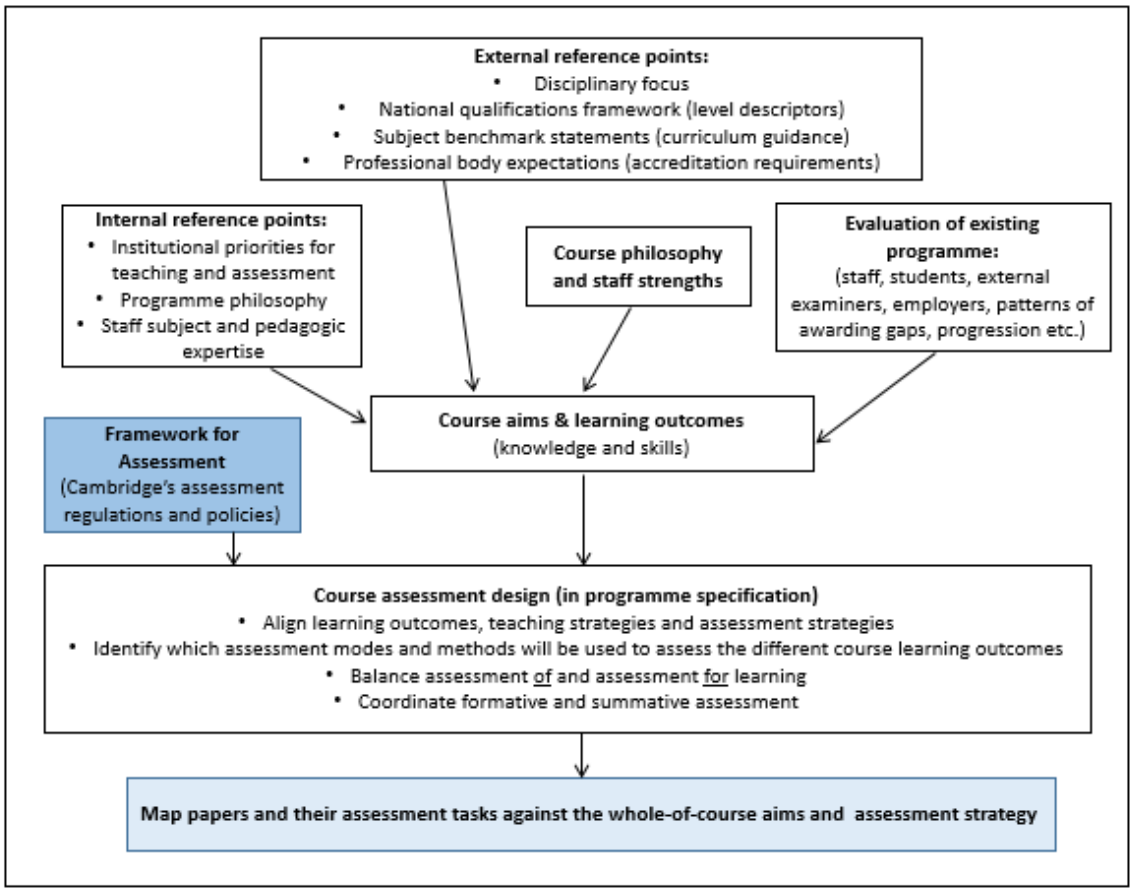

Figure 3 Designing a whole-of-course assessment strategy (adapted from Bloxham & Boyd, 2007 p.160)

The above flow diagram outlines the decision steps to be made when developing or reviewing a whole-of-course assessment strategy.

Importantly, a variety of assessment tasks across a course can help students to develop a range of relevant knowledge, skills and competencies, while providing opportunities to assess a range of learning preferences so that every student has an opportunity to demonstrate their achievement through the assessment process, without disadvantaging a specific group or individual student.

The course's teaching and assessment strategies should be designed to work in parallel to progressively enhance students' assessment literacy to enable them to self-evaluate and self-regulate their own learning and performance. To that end, course teams are strongly encouraged to consider their assessment strategies in light of their overarching course aims and learning outcomes, and then work backwards to map out the opportunities that students are given to develop a range of knowledge, skills and competencies relevant to their discipline (UK QAA Principle 6, p.5).

Individual paper or module assessment design

With a well-designed set of course learning outcomes, assessment task design becomes a little easier to plan and coordinate within individual papers. That is, when learning and teaching activities are designed in alignment with clearly articulated knowledge- and skills-based outcomes, there is an opportunity for students' understanding and skills to be developed (formative assessment) before or even while their learning is more formally measured and evaluated (summative assessment). The following flow diagram provides a useful reminder of the decisions that need to be made when developing an assessment strategy for a particular paper or module within a course.

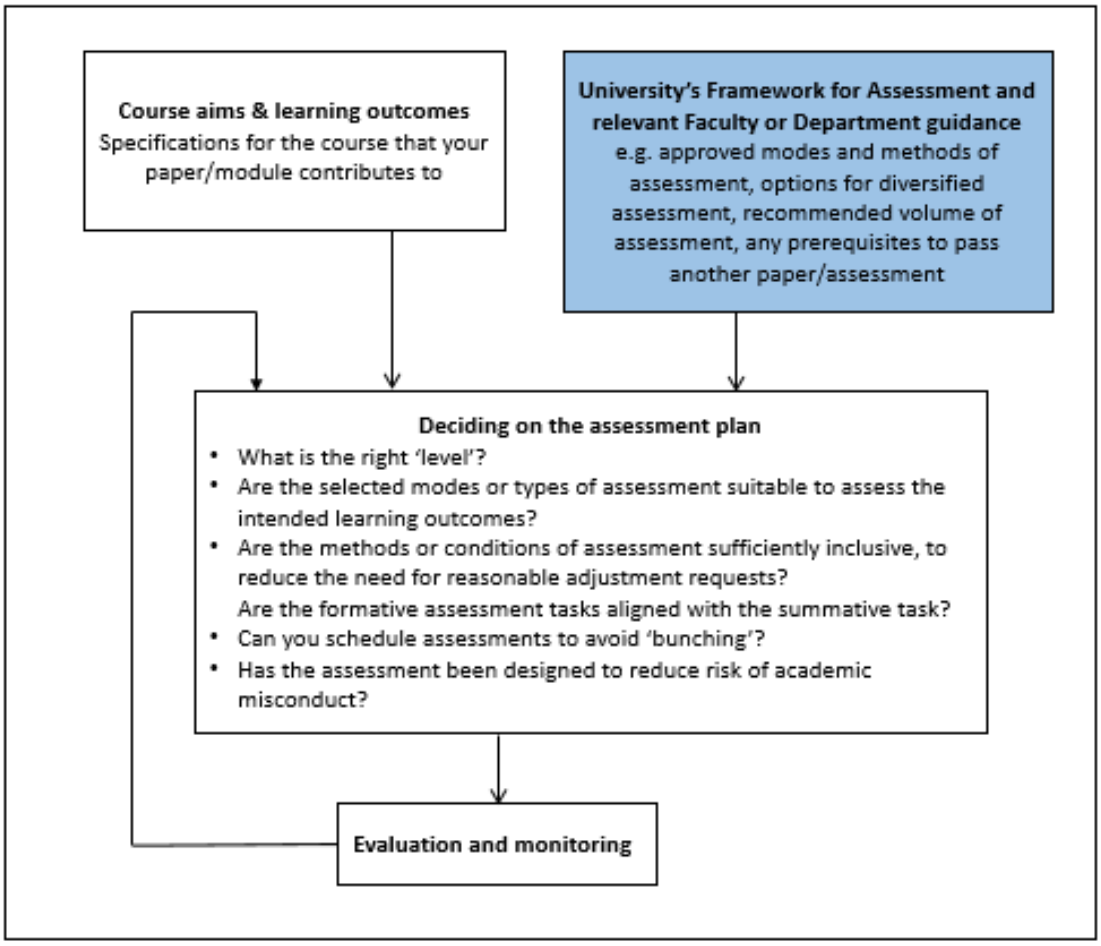

Figure 4 Designing a paper or module assessment plan (adapted from Bloxham & Boyd, 2007 p.177)

4. Components of assessment design to ensure consistency, reliability and validity

Research into assessment acknowledges that providing fairness, consistency and reliability in marking is a significant challenge: it can be difficult to pin down individual academic views on standards and marking inclinations, which are often subjective. This is why so much of the current guidance foregrounds the importance of aligning assessment to intended learning outcomes, so that concerns about validity and reliability are addressed in the design of the assessment method as well as the marking process.

The following are commonly used tools or components of assessment. In the graphic below, they are presented in the form of an assessment rubric, although they will be conceived of and designed into the overarching assessment strategy well before a rubric will be developed.

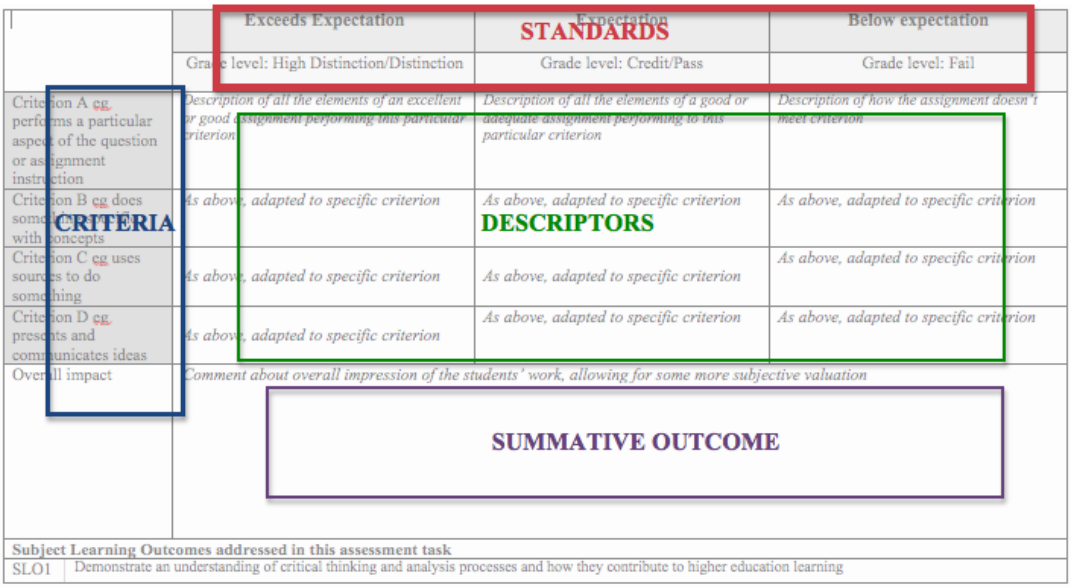

Figure 5 Components of an assessment (as presented in a rubric)

Assessment (marking) criteria

The expectation is that assessments should be judged primarily against a set of criteria, and not relative to other students' performance. Assessment criteria are helpful in clarifying expected standards and assisting the learner in understanding their strengths and weaknesses. They are more specific to a particular assessment task than the broader and more generic grading descriptors (see below); they might include such things as the quality of the argument, application of a particular theory or skill, accuracy, use of evidence and presentation.

The first Guiding Principle for assessment is that both "assessment methods and criteria are aligned to learning outcomes and teaching activities" (UK QAA, p.4). Assessment or marking criteria, just like learning outcomes, should reflect the course and module aims, use appropriate descriptors and consistent language, and be developed in accordance with the appropriate academic level of study. That is, you might anticipate that a first-year assessment task and a final-year assessment task would be evaluated by different assessment criteria, because they would take into account the incremental stages of a student's development of intended learning outcomes.

Assessment or marking criteria are particularly useful as they work to identify the aspects of an assessment task that the marker will take into account when making their judgement. To ensure shared understanding

of assessment expectations, they should be made available to all students and teaching staff, so that they can be used to inform formative assessment and feedback as well as summative assessment.

Standards:

These are the levels of performance which might be achieved by students against each individual criterion in the marking rubric. Standards might be expressed in a variety of ways, for example by *excellent / good / satisfactory / poor* or *above / meets / below expectations.*

At Cambridge these are commonly expressed for undergraduate degrees as *1st, 2.1, 2.2, etc,* although this risks conflating standards with classes. It is increasingly recognised that standards can only be achieved through a 'community of assessment practice' (Rust, 2014), and that instructions and rubrics need to be contextualized and refined through regular conversation and review amongst a teaching team. That is, a rubric is only as good as the conversations about them amongst staff, or between staff and students.

Grading descriptors:

A full set of grade descriptors for a course, Tripos or Department will involve statements of standards across the different levels of degree award – and possibly also across years of study, as the expectations of the quality of students' work increase in line with their development and mastery. They are often developed and published as a framework to provide greater consistency in marking across different papers or disciplines; at Cambridge these are presented as classes. However, these should not normally be used as a proxy for assessment or marking criteria, for specific assessment tasks.

When used for a particular assessment task, for instance in an assessment or marking rubric, the descriptors are normally presented as the short explanations that describe the qualities required to demonstrate achievement of each standard for each criterion. These descriptors should be as specific as possible to the assessment task – if they are too general or vague they might result in misunderstandings by markers and students.

Summative outcome:

This may include a combination of marks and comments by the marker on the overall quality of the student's performance in the assessment task. A good rubric will allow flexibility in the evaluation of a particular student's work, where some element not anticipated in the published assessment criteria provides a reason for additional marks / a higher grade. Space for a comment by the marker highlighting this is encouraged.

5. The role of assessment rubrics

A rubric is the device with a set of *descriptors* of the *criteria* against which student work will be judged and the *standards* against which that work will be assessed. Insofar as each task is different, with a range of different criteria to evaluate a student's work, these rubrics should be unique to each assessment task. They are sometimes also called: marking sheets, marking rubrics, marking guides, scoring schemes, grading guides etc. Moodle uses the term 'rubric' to refer to an empty and adaptable template that will eventually form an assessment rubric when filled with criteria, standards and descriptors.

It is basically a marking scheme for an assessment task which combines both the **assessment criteria** and standards (for example, from a set of **grade descriptors**) and provides the detail about how performance in each of the criteria will be graded. It is the view of the UK QAA that clear, public assessment criteria and marking schemes / rubrics are important in ensuring that marking is carried out fairly and consistently across all papers and disciplines.

Although they are not the universal solution to accurate marking, assessment rubrics do have a number of important benefits as they can provide:

- a starting point for Faculty and College teaching staff about assessment expectations
- a shared understanding and language to talk about assessment expectations between staff and students
- confidence and guidance to novice markers and help them become part of the assessment community more quickly
- some standardising effect on marking across multiple assessors
- an infrastructure to defend and support marking decisions
- more transparent outcomes about marking for students
- a diagnostic opportunity for students by providing a guide to learning and improving achievement
- a framework to write feedback

The graphic below indicates where assessment rubrics fit into the overall stages for the design of an effective assessment strategy:

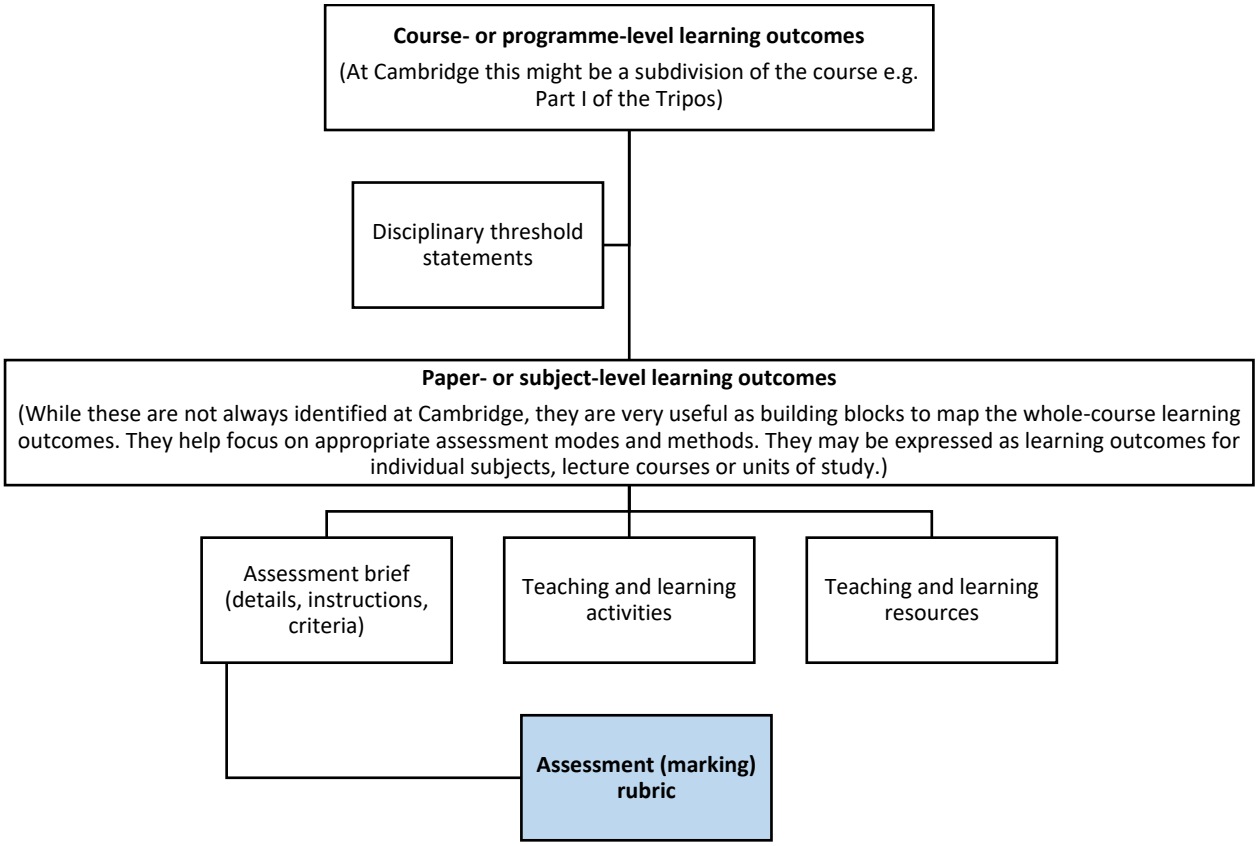

Figure 6 Assessment rubrics in the context of learning outcomes, teaching activities and assessment-related resources

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