School of Languages, Linguistics and Film Assessed Coursework Coversheet

For undergraduate (BA) modules coded:
CAT-, COM-, EAL-, FLM-, FRE-, GER-, HSP-, LAN-, LIN-, LLU-, POR-, RUS-, SML-

Please read and note the following guidelines:

1. To assist with anonymous marking, please use your nine-digit student ID number only: do **NOT** use your name anywhere on your coursework.
2. Normally you will be required to submit one electronic copy of coursework via QMPlus at https://qmplus.qmul.ac.uk/login/index.php. Most deadlines in this School are set for a Sunday night (23:55). You will be informed by the module organiser of any exceptions to this procedure, either regarding the time or method of submission. It is your responsibility to ensure that you know and meet the submission requirements for each piece of coursework.
3. You must keep a copy of all coursework you have submitted.

4. Extensions to deadlines may ONLY be granted by the Senior Tutor for your year of study. In order to be granted an extension, you must submit a claim for Extenuating Circumstances BEFORE the coursework deadline. SLLF has an online EC claim form. Details and links to the form can be found at http://sllf.qmul.ac.uk/Extenuating_Circumstances.

5. Late submission, without an agreed extension due to extenuating circumstances, will be penalised according to the SLLF regulations relevant to your level of study.
6. Work submitted within 5 DAYS of the deadline will be accepted but subject to a late submission penalty against the marks awarded. The work will be marked normally, and then a late submission penalty of five marks (or 5% of the marks if not marked out of 100) per 24 hour period will then be applied.
7. Work that is more than 5 DAYS late will not be accepted and will not be marked and will receive a mark of ZERO.

You are reminded that plagiarism, that is copying someone else's words or ideas without attributing them to that person, is cheating. This is a serious examination offence and at the very least will result in a mark of zero being awarded for this piece of work; it could result in your expulsion from Queen Mary.

By handing in this coursework you acknowledge that it represents your own, unaided work and that you have appropriately acknowledged all sources.

Please complete the following details:

Student ID Number:(9-digit number): 190141051
Module CODE and TITLE: LIN6209 – Coding for Linguists
Title of Coursework: Mini-Project, Part 1
Essay no:
Number of words written:
Module Organiser: Peter McGinty
Seminar Tutor (if applicable):

Please continue your coursework on the next page

German verb conjugator

This project will be a tool for users to generate a table containing the inflectional paradigm for any verb in German. It will accept any valid citation form (in German this is the infinitive) of a German verb return the full paradigm of the verb.

German verbs inflect for the following forms, which will all need to be captured by my conjugator:

- Person/number: 1st singular, 1st plural, 2nd singular, 2nd plural informal, 2nd singular/plural formal, 3rd singular, 3rd plural
- Tense/aspect: present, imperfect, perfect, pluperfect, future (I and II)
- Mood: indicative, subjunctive (I and II), imperative

This program will need to take the following aspects of German verb morphology into account:

- Irregular “strong” verbs – these verbs have three irregular stems for certain present tense forms, all imperfect tense forms, and the perfect participle.
- “Separable” verbs – these verbs are comprised of two parts – the base verb and an appended prepositional particle – which are separated in most forms; when the verb is in any position other than final, the prepositional element remains separated at the end of the clause. Certain prefixes appear between this particle and the verb.
- In the perfect tense, a handful of verbs (typically verbs of movement) employ the use of *sein* (“to be”) as an auxiliary verb as opposed to *haben* (“to have”).
- For some verbs, syllable structure restrictions requires that an epenthetic *-e-* is inserted between the verb stem and certain personal endings.

In terms of the data required, I will need to create a dictionary of German strong verbs containing the different verb stems for each. For this I will need to search for a list of such verbs and their stems. I have ready access to several free online German dictionaries, such as Duden, Leo, and even Wiktionary. I can use these websites to easily obtain information on a given verb’s conjugation and stems, and to thereby compare the expected results against my program’s actual output. I can likewise create a set of verbs which take *sein* as an auxiliary in the perfect tense.

A tentative list of important functions might be:

- `vb_validate(input)` – validate the user's input, reject if the input is not a valid verbal infinitive
- `get_stem(input, stem)` – looks up a strong verb in the dictionary and returns the specified stem, returns a regularly derived weak verb stem if no strong verb found
- `generate_table()` – generates the full conjugation table as an output
- `conjugate_present(input)` – returns a list of present tense forms for an inputted verb; similar functions would exist for each tense and mood combination, though alternatively this could be handled in a single large function.

Admittedly, an approach to testing the software using `assert()` is going to require some additional thought. What I am likely to do is create a limited set of test cases covering all special cases and rules I might need to consider. For the final table, I can ensure I get the correct layout by using placeholder values corresponding to each individual cell of the table; if these values display in the correct places, then the table works as intended and can be filled with the actual values. The final tables will be compared against conjugation tables provided by online dictionaries to ensure that I haven't missed anything.

In terms of the software I intend to use for this project, I will use IDLE to create the program, and LaTeX to write/compile the project diary to go with it.