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GF Summer School:
Progress in Maltese

Progress during Summer School

- Started from nothing

- Completed the Foods grammar

  - Based on Italian version

- Worked on Semitic verb morphology

- Partially completed for

  - Perfect, Imperfect / Imperative tenses

  - Some verb types (more later)

Semitic Verb Morphology

- No infinitive in Maltese
- Use of Perf. 3rd Pers. Masc. Sing. - "mamma"
  - English: *to write*
  - Maltese: *kiteb* (he wrote)
- Conjugations have predictable patterns
- Aim: Derive entire conjugation tables from this single form

Semitic Verb Morphology

1. Classification of verb root »

   - Strong   e.g. ĦAREĠ (Ħ-R-Ġ)

   - Defective   e.g. QATA' (Q-T-GĦ)

     - *Weak*   *e.g. MEXA (M-X-J)*

     - *Hollow*   *e.g. QAL (Q-W-L) or SAB (S-J-B)*

     - *Double*   *e.g. ĦABB (Ħ-B-B)*

   - Quadriliteral e.g. QARMEĊ (Q-R-M-Ċ)

Basic Procedure

2. Extraction of Root & Vowel Pattern

- E.g. KITEB → Root: K-T-B, Pattern: -i-e-

- E.g. BEŻA' → Root: B-Ż-GĦ, Pattern: -e-a-

3. Conjugation in Perfect Tense »

- Vowel arrangements always inferred

4. Conjugation in Imperative & Imperfect

- Overload for less-regular verbs »

5. Small lexicon (10 verbs!)

Example: Strong Verb

```
mkVerb "talab"

s . VPerf (Per1 Sg) => tlabt
s . VPerf (Per1 Pl) => tlabna
s . VPerf (Per2 Sg) => tlabt
s . VPerf (Per2 Pl) => tlabtu
s . VPerf (Per3Sg Masc) => talab
s . VPerf (Per3Sg Fem) => talbet
s . VPerf Per3Pl => talbu
s . VImpf (Per1 Sg) => nitlob
s . VImpf (Per1 Pl) => nitolbu
s . VImpf (Per2 Sg) => titlob
s . VImpf (Per2 Pl) => titolbu
s . VImpf (Per3Sg Masc) => jitlob
s . VImpf (Per3Sg Fem) => titlob
s . VImpf Per3Pl => jitolbu
s . VImp Sg => itlob
s . VImp Pl => itolbu
```

Example: Strong Verb (Overloaded)

```
mkVerb "ħanaq" "oħnoq" "oħonqu"
```

```
s . VPerf (Per1 Sg)    => ħnaqt
s . VPerf (Per1 Pl)    => ħnaqna
s . VPerf (Per2 Sg)    => ħnaqt
s . VPerf (Per2 Pl)    => ħnaqtu
s . VPerf (Per3Sg Masc) => ħanaq
s . VPerf (Per3Sg Fem) => ħanqet
s . VPerf Per3Pl       => ħanqu
s . VImpf (Per1 Sg)    => noħnoq
s . VImpf (Per1 Pl)    => noħonqu
s . VImpf (Per2 Sg)    => toħnoq
s . VImpf (Per2 Pl)    => toħonqu
s . VImpf (Per3Sg Masc) => joħnoq
s . VImpf (Per3Sg Fem) => toħnoq
s . VImpf Per3Pl       => joħonqu
s . VImp Sg            => oħnoq
s . VImp Pl            => oħonqu
```

Example: Defective Verb

```
mkVerb "qala'"

s . VPerf (Per1 Sg) => qlajt
s . VPerf (Per1 Pl) => qlajna
s . VPerf (Per2 Sg) => qlajt
s . VPerf (Per2 Pl) => qlajtu
s . VPerf (Per3Sg Masc) => qala'
s . VPerf (Per3Sg Fem) => qalgħet
s . VPerf Per3Pl => qalgħu
s . VImpf (Per1 Sg) => naqla'
s . VImpf (Per1 Pl) => naqilgħu
s . VImpf (Per2 Sg) => taqla'
s . VImpf (Per2 Pl) => taqilgħu
s . VImpf (Per3Sg Masc) => jaqla'
s . VImpf (Per3Sg Fem) => taqla'
s . VImpf Per3Pl => jaqilgħu
s . VImp Sg => aqla'
s . VImp Pl => aqilgħu
```

Example: Quadriliteral Verb

```
mkVerb "qarmeċ"

s . VPerf (Per1 Sg) => qarmiċt
s . VPerf (Per1 Pl) => qarmiċna
s . VPerf (Per2 Sg) => qarmiċt
s . VPerf (Per2 Pl) => qarmiċtu
s . VPerf (Per3Sg Masc) => qarmeċ
s . VPerf (Per3Sg Fem) => qarmċet
s . VPerf Per3Pl => qarmċu
s . VImpf (Per1 Sg) => inqarmeċ
s . VImpf (Per1 Pl) => inqarmċu
s . VImpf (Per2 Sg) => tqarmeċ
s . VImpf (Per2 Pl) => tqarmċu
s . VImpf (Per3Sg Masc) => iqarmeċ
s . VImpf (Per3Sg Fem) => tqarmeċ
s . VImpf Per3Pl => iqarmċu
s . VImp Sg => qarmeċ
s . VImp Pl => qarmċu
```

Problems Encountered

- Looked at Arabic grammar for inspiration

  - Inline comments often quite sparse

- No enforced conventions for

  - Function/Identifier naming

  - File separation

  - Module inheritance

- Problems with Unicode (not all GF-related)

Future Work

- Short term:

  - Finish tenses & verb forms

  - Incorporate Romance verbs (with Semitic rules)

  - Start on Miniature Syntax

- Medium term:

  - Looking for undergrad. dissertation title

  - Finish resource grammar for Maltese, graduate

Grazzi!