

COMP110 WORKSHEET 9: TIS-100

Version 3.0
Computing
COMP110

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Introduction

TIS-100 is a puzzle game released in 2015 by independent developers Zachtronics. The gameplay consists of writing assembly code for a fictional parallel computer architecture, and as such requires skills in low-level programming.

To complete this worksheet:

- (a) **Play** TIS-100 — it is available on the PCs in the Games Academy, or can be purchased from Steam for around £5;
- (b) **Complete** the first thirteen levels of the game, upto and including “Signal Multiplier”;
- (c) **Complete** the optional stretch goals.

“The Tesselated Intelligence System is a massively parallel computer architecture comprised of non-uniformly interconnected heterogeneous nodes. The Tesselated Intelligence System is ideal for applications requiring complex data stream processing, such as automated financial trading, bulk data collection, and civilian behavioural analysis.”

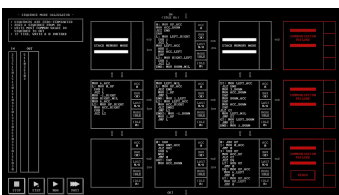
— TIS-100 Reference Manual

Submission instructions

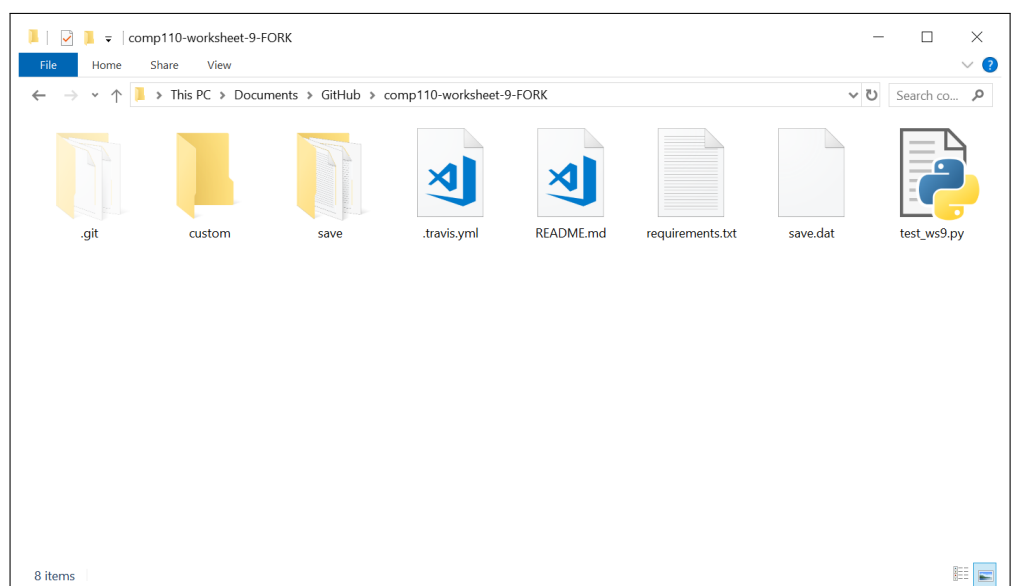
Begin by **forking** the GitHub repository at the following URL:

<https://github.com/Falmouth-Games-Academy/comp110-worksheet-9>

Play TIS-100. Once you are ready to upload your work, click the “Open Save Directory” button within the game (on the level select screen), navigate up one directory, and commit and push the contents of this directory to your GitHub repository. The contents of your repository should look like the following — noting the `save.dat` file in the root, and the `save` directory containing your actual solutions:



TIS-100 is a puzzle game in which players must write assembly code to process data streams in increasingly complex ways.



Stretch goals

The basic task for this worksheet is to complete the first 13 non-sandbox levels of the game, upto and including "Signal Multiplier". Partial credit will be awarded for completing some portion of these levels — if you are stuck on a particular level, skip it and carry on to solve the rest.

Extra marks are available for completing one or more of the following stretch goals:

- Solve "Differential Converter" in 250 cycles or fewer;
- Solve "Sequence Counter" in 4 nodes or fewer;
- Continue progressing through the game to unlock the bottom row of the level select screen, and solve "Sequence Sorter". (I was stuck on this level for several weeks when I first played TIS-100!)

Marking Rubric

Criterion	Weight	Refer for Resubmission	Adequate	Competent	Very Good	Excellent	Outstanding
Basic competency threshold	30%	A reasonable attempt at the worksheet was not submitted by the formative deadline.	A reasonable attempt at the worksheet was submitted by the formative deadline. There is no evidence of academic misconduct.				
PROCESS: Task completion	70%	No tasks have been completed.	At least one level has been completed.	The first 13 levels have been completed.	The first 13 levels have been completed. One of the stretch goals listed above has been completed.	The first 13 levels have been completed. Two of the stretch goals listed above has been completed.	The first 13 levels have been completed. All three of the stretch goals listed above has been completed.