COMP21111 Assignment 5
20 marks

Show your working.

Deadline: 12th Nov., time: 12:00, SSO
Deadlines are strict

Problem 1 (10 marks)

Consider the set consisting of the following clauses:

$$\neg p_0 \vee \neg p_1 \vee p_2, \quad p_0 \vee p_2, \quad \neg p_0 \vee p_1, \quad p_1 \vee \neg p_2, \quad \neg p_0 \vee \neg p_1 \vee \neg p_2.$$

Apply
1) GSAT and

2) WSAT to find a model of this set starting with the initial random interpretation $\{p_0 \mapsto 1, p_1 \mapsto 0, p_2 \mapsto 0\}$.

Problem 2 (10 marks)

1) Apply semantic tableaux to check whether

$$\neg(p \vee q \rightarrow ((p \wedge q) \vee p \vee \neg q)).$$

is satisfiable.
If it is satisfiable, find a model of this formula from a semantic tableaux for it.

2) Apply semantic tableaux to check whether

$$(p \rightarrow q) \equiv (\neg q \rightarrow \neg p)$$