C++ Programming

Mark	Requirement	What you did (short explanation)
	1) Create an appropriate sub-class of BaseEngine with an appropriate background which is different from the demos	Background emulates grass, randomising colour between different hard-coded green shades. Colours assigned in chunks of 5x5px instead of single pixels. *PsylhaEngine.cpp* *Line 19-40*
	2) Show your ability to use the drawing functions	To implement above requirement, squares were drawn to fill the 5x5px area (background), used in a loop. *PsylhaEngine.cpp* *Line 37* Also used in *Player* (foreground) as a backdrop for Health text. *Player.cpp* *Line 79 - 83*
	3) Provide a user controlled moving object which is a sub-class of DisplayableObject and different to the demos	*Player* is a subclass of ImageObject (subclass of DisplayableObject). User-controlled using arrow keys, shift keys and control keys. Object can use the horizontal space but still restricted vertically (leave left-side screen, appear on the right-side)
	4) Ensure that both keyboard and mouse input are handled in some way and do something	Shift keys – Prone/crouch position Control keys – Sprint Arrow keys – Movement *Idle animation plays with no input* (Listed in priority order) *Player.cpp* *Line 117 - 155* Left-click only within checked tiles – Resets colours and time *Player.cpp* *Line 231 - 246*
	5) Provide an automated moving object which is a sub-class of DisplayableObject and different from the one in requirement 3	*NonPlayableAnimal* – subclass of ImageObject. Movement and type of movement is automated. Illustrates panda. Movements include walking, standing, eating, sitting, playing. Movement type is randomised, with higher probability to walk. *NonPlayableAnimal.cpp* *Line 155 - 203*

	6) Draw some text on the <u>background</u>	"Hold SHIFT to prone" drawn to background at top-left corner. *PsylhaEngine.cpp* *Line 68*
	7) Have some changing text, refreshing/redrawing appropriately which is drawn to the <u>foreground</u> (not background), in front of moving objects	Health text – appears top-left of *Player*. Follows object wherever. Appears above object, seen when above *NonPlayableAnimal* object. *Player.cpp* *Line 85 - 90* Time text – appears underneath checked tiles. Updates every 100ms when tiles are green. Stops when tiles are red. *Player.cpp* *Line 91 - 95* *Line 162*
	8) Create your own subclass of TileManager	*PsylhaTileManager* Used for checked tiles. *PsylhaEngine.cpp* *Line 42 – 66* *PsylhaTileManager.cpp*
	9) Have at least one moving object interact correctly with the tile manager, changing a tile	*Player* interacts with tiles. When object crosses line first time, colours turn green and timer starts. When object crosses second time, colours turn red and timer stops. To restart, click within tiles. *Player* checks for tiles in the bottom-middle of object (contrary to default) to emulate focus on feet crossing. *Player.cpp* *Line 157 - 211*
	10) Have at least two moving objects interact with each other	*NonPlayableAnimal* will run away when *Player* collides. This takes priority, cancelling any previous movements. Animal moves only in the opposite direction of *Player*. Due to limited screen space, Player collision box is only lower half (waist down). *NonPlayableAnimal.cpp* *Line 123 - 153*