For Windows® OS

User Manual

Website: www.computer-repair-simulator.com
Facebook: www.facebook.com/ComputerRepairSimulator/
Email: support@computer-repair-simulator.com
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Contents

Introduction

Computer Repair Simulator® is a Windows® based software and video game featuring build, break and troubleshoot style gameplay focused around computer and IT systems. The game is considered a simulator, offering many different customizations for gameplay and game modes. This includes player designed levels and scenarios along with real time customization. This is just not one single game, but a group of 3D experiences available as a library focused around education and fun. The gameplay also includes player money and XP which can be used to earn new skills (100 total skills) which unlocks more features of the game…like a larger toolbelt to hold more tools.

The best advice is to watch the online video tutorials and read the user manual before you start using the software. Many users have expected just jumping right into this game and became frustrated, but after working with them to teach them, they absolutely loved it. This software has a learning curve and does require knowledge of the hardware. It is a true simulator of putting you in the shoes of the technician and you must work through it. After playing for a while, the player will be able to start picking up on key menus, triggers, keyboard hotkeys and in game mechanics, but it will take time.

System Requirements

Operating System	Windows® 7, 8.1, 10
Architecture	32-/64-bit
DirectX®	9.0c or better
Memory / RAM	4GB
Video Resolution	Minimum: 1440×900 Recommended: 1920×1080 / 1920×1200 Maximum: 4K Resolutions (in Window Mode)
Video Memory GPU	2GB
Processor	Pentium® Processor or better
Graphics	3D Support, 2.0 Shaders
Hard Disk	Up to 3GB available

*Windows® 11 is still in testing, but preliminary testing appears to be positive. Please report any issues with this version of OS.

This software can be installed on a computer using the Installer, however it is assumed that user has Administrative rights and access to install and use the system. For instances where the end user cannot install / runt he software as an Administrator, do not use the installer, but rather download the .ZIP version and place it in a location that the end user has access to (i.e. Desktop, My Documents) and not in areas where they do not have access (i.e. ProgramData, Program Files). If you are not sure and need to learn more about different use cases, please contact us at support@computer-repair-simulator.com.

AntiVirus and Software Notice

Some antivirus programs may mistake this software as malware and/or ransomware. Don't be alarmed, we are actively working with these suppliers to remove the false positives. Please report these false positives to support@computer-repair-simulator.com or the antivirus company directly. All releases are scanned directly with Malwarebytes Professional, and submitted to the website VirusTotal.com. As of now there is only one company MaxSecure who is flagging for a Trojan, but based upon no other results were found and online research, this appears to be a false positive. We have attempted to reach out to this company but their website isn't using an HTTPS which is concerning. If you have any concerns or would like to find out more, please contact our support team.

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Helpful Links

Tutorials:
https://www.computer-repair-simulator.com/clickandbuilds/ComputerRepairSimulator/video-tutorial

Downloads:
https://www.computer-repair-simulator.com/clickandbuilds/ComputerRepairSimulator/alpha-game-downloads

Developer Log:
https://computer-repair-simulator.com/log/log.html

CD Key Help Page:
https://www.computer-repair-simulator.com/clickandbuilds/ComputerRepairSimulator/licensing-cd-key-help

User Accounts:
https://computer-repair-simulator.com/crs_accounts/login_home_software.php

Educational Use

This software has been used in many educational facilities to teach students about computers and technology. Not only has this software been deployed in schools, but also in VoTechs and prisons. To learn more, contact us at learn@computer-repair-simulator.com.

Main Game Features

The following main game features are available.

PC Repair Mode – Random failures on a PC have to be troubleshot, the PC must be taken apart and diagnosed and ultimately fixed and put back together before winning. This is an endless mode with a unique challenge based upon difficulty set in the options.

PC Building Mode – Build a new PC from scratch by purchasing all the parts or using what you have. This mode can take time and it is highly recommended you have enough money before going into this mode. The last thing you want is to run out of money midway through because you would have to give up and earn your money back through the Repair Mode.

Prototype – Want to go back in time? Play this legacy mode to see what our first prototype release looked like. This version contains bugs but is playable. It does not have many scenarios and was focused on basic game play techniques. The GUI is not polished. The game settings are local to this version and any setting you change in the GameLauncher will not change the Prototype since it used a different code base. Prototype settings can be changed in CRSPrototype/settings folder.

World / Lab Editor – Build and customize a new world or modify an existing. This mode in itself offers an unlimited amount of customizations including object placement, starting points, customized banners, customized music and soundFX, object basic functions (spinning, rotating, moving, etc), particle systems (fire, smoke, rain, snow, etc.) which can be applied to objects to create special effects like a burning trash can. Once the level is built, use the GameLauncher>>Mods>>Convert Level to integrate it into the game play and you can Repair or Build PCs using the new lab you created.

Game Modding – The GameLauncher>>Mods offers options to add new objects to the world, items to the game and inventory, customized banners to use for the level editor, music and sound FX, and level conversion.

Level / Lab Customization – The game supports placing of any item, anywhere, in the lab including furniture, paintings, computer cases, hardware, etc.

Software Limitations

The following notes are important to be aware of.

1. This software can only be used by 1 User Account on a PC due to the location used for saving files. The software saves all data to C:/Program Data/Computer Repair Simulator, which is a location that all users and admins can access, however any user who didn't originally create the file cannot read / write to this file location. This means that if an Admin account created the files (i.e. ran the software for the first time after installing), a subsequent user who logs in under a different account other than Admin won't be able to read / write to these files. In a school install, most setups we see is the Admin account will install the software, but not run it. They then log out and a user logs in and runs the software (for the first time) and from that point the files in Program Data can be read / accessed by that user only. If you need to support additional accounts, please let us know and we can look at the request.
2. In a multihead monitor setup, the software will always start on the Primary Screen. In Full Screen mode, it cannot be moved to another screen other than the primary screen. In Windowed Mode, the game can be dragged to a secondary or extended monitor just fine.

Getting Started

The website download is a fully loaded game, but if not licensed will have time and feature limitations. This option is used when the player wants to try before they buy. We offer this to our clients because we feel you should be able to try something first before investing. This Demo Option is limited to 5 minutes of gameplay before having to be restarted. No player data is saved and this mode is designed to allow the player to try before you buy. Many in game features are disabled.

When installed, the proper shortcuts should be located on the Desktop and Start menu. In the event the icons are not present, the typical installation folder is C:/Program Files(x86)/Computer Repair Simulator/, however if you use an online software distributor, the installation location can be anywhere.

The main executable is named "GameLauncher.exe" and found in the root folder of the /Computer Repair Simulator/ folder. When you open this file for the first time it will be delayed by up to 10 seconds due to initial setup. Subsequent launches will be almost immediate once the initialization has been done. When the software opens, it should automatically detect the video resolution, but any additional settings can be tweaked under Options. The main window will present several different options as seen below.
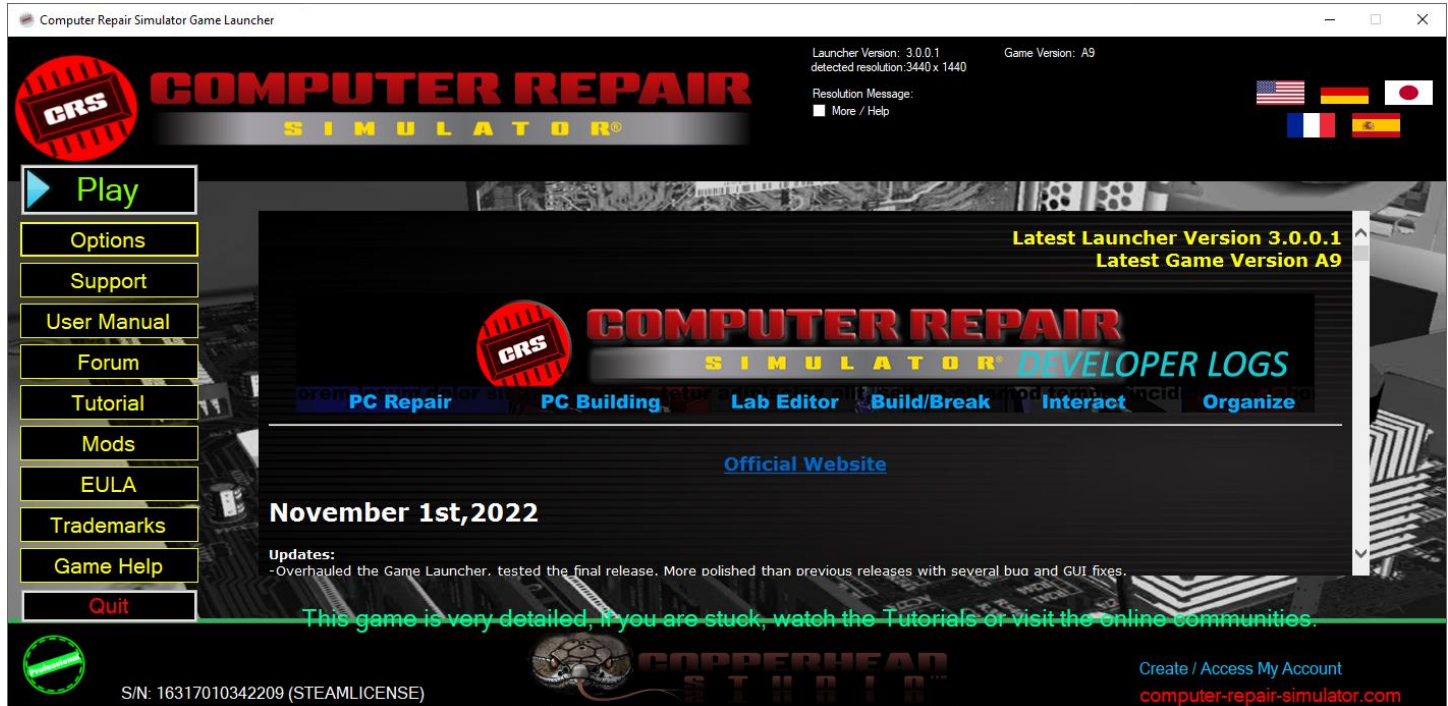
If you want to get right into gameplay, click the Play button and select one of the three profiles.
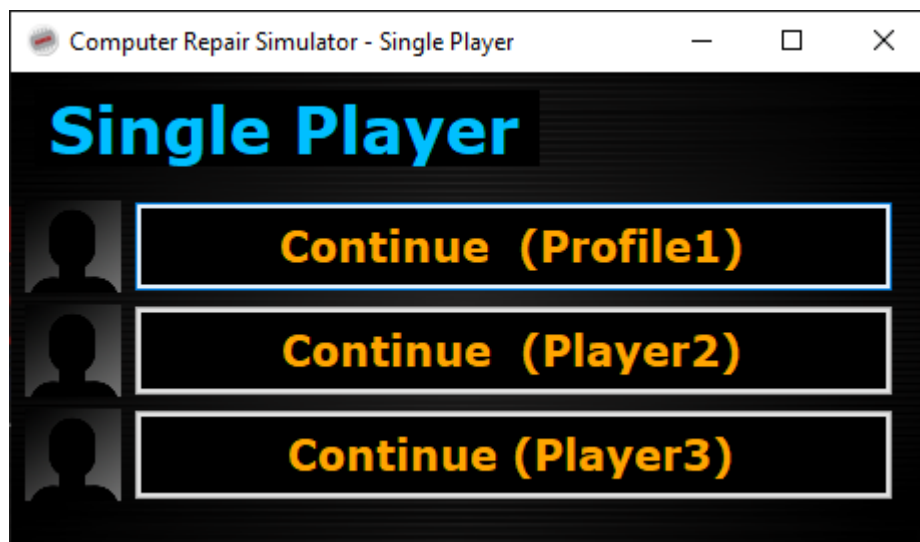
Once a profile is selected, you would see the next screen that shows the player profile along with different game modes that can be played. Now click on either PC Repair or PC Builder to start that game mode. A word of caution, the repair and build scenarios do not save the progress of the repair or build and should be completed in one sitting. You can use the in game option of Saving which is explained later, but in order to load again you must be in the same game mode (i.e. if you saved it while building a pc, you need to load the building pc mode and restore it, you cannot restore a pc build from a repair mode).
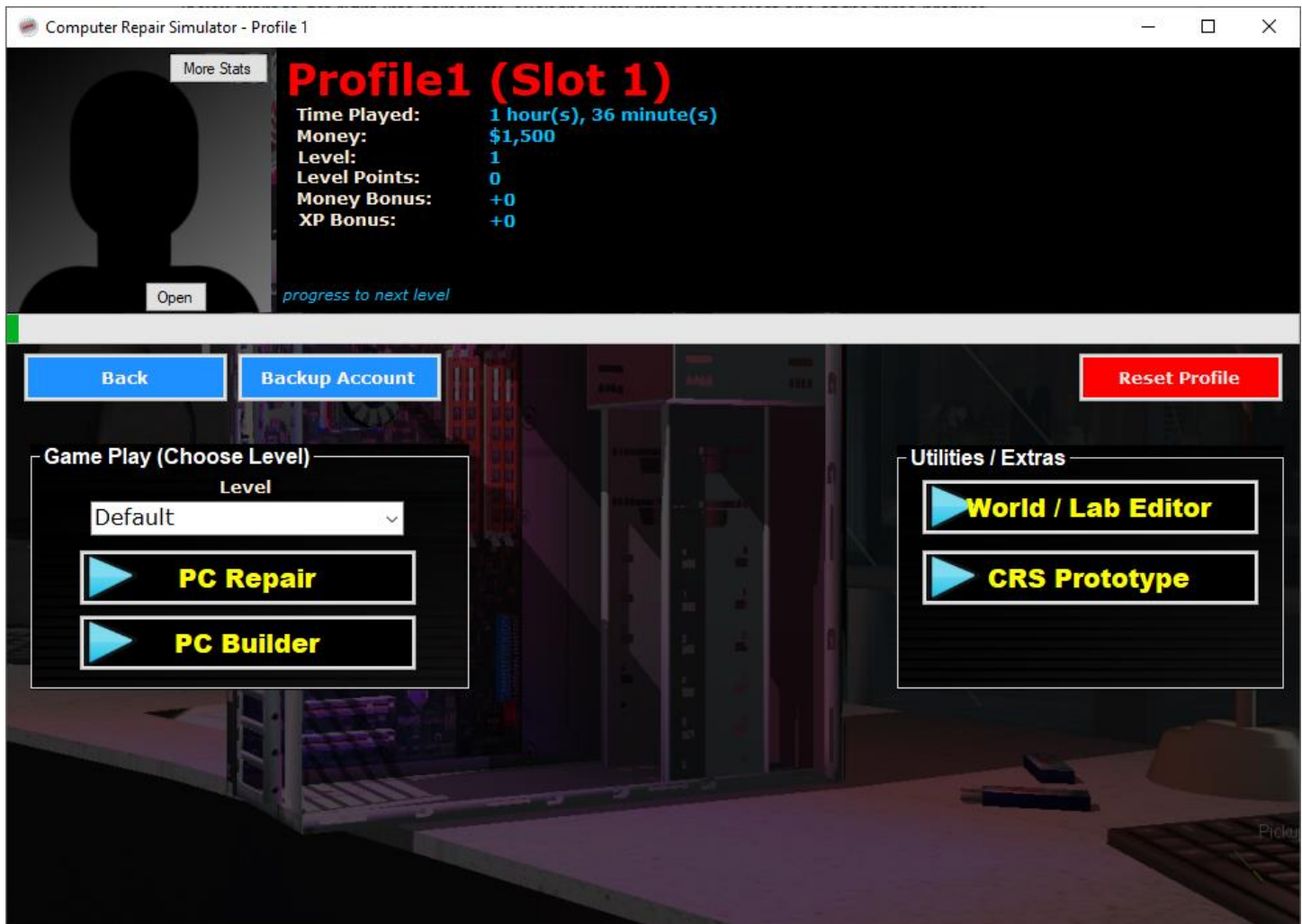
When the game loads, you will see several different things going on. It is recommended to follow the green help pointers to quickly cover the major buttons to play. It will take you a few moments to get familiar with the interface, but there are several ways to interact with the software.
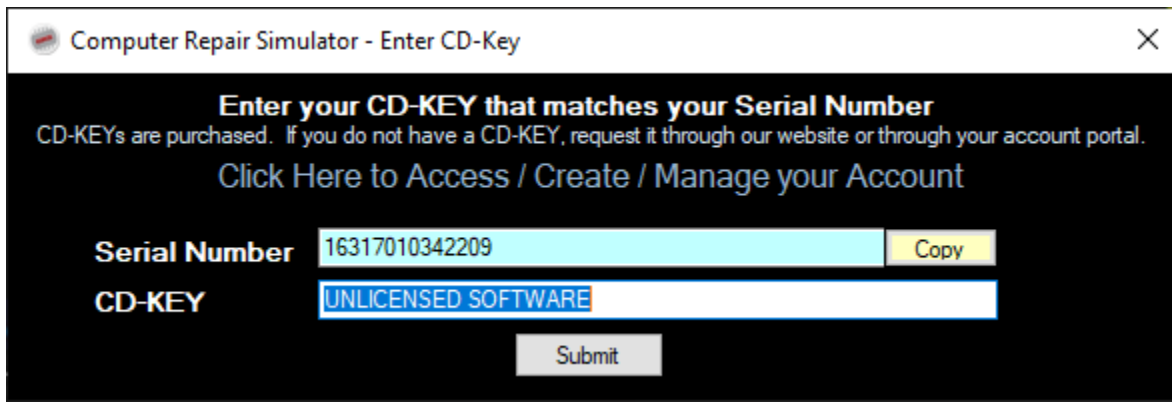
Software Licensing, Serial Number and CD-Keys

If you purchased the software from an online software distributor, your version should be licensed already. If you purchased the software from the official website, you can unlock all of the features of the software by purchasing a CD-Key. The process for this is as follows.

1. Purchase through website, the checkout page will generate a TICKET#. You use this TICKET# to trade it in on a License / CD-KEY.

2. Install the software and on the first page, the serial number and button to register the software is visible. The serial number is unique to your installation and is used to reference license keys.
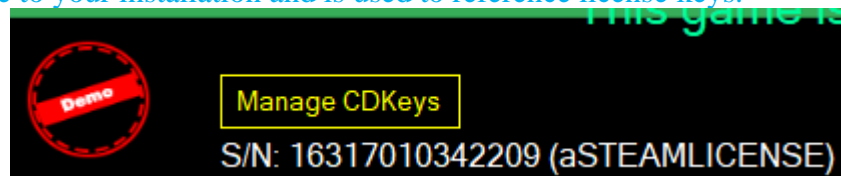
3. Clicking on the Manage CDKeys will open a new panel like the one below. You will want to Copy your Serial Number and leave this window open.

4. Open up a web browser and go to https://www.computer-repair-simulator.com/log/cdkey/index.php. Enter or Paste the Serial Number in, your email address, and the TICKET# you received from step 1. If you purchased a license but do not remember your TICKET#, you can create an account at https://computer-repair-simulator.com/crs_accounts/login_home_software.php and it will run several checks and if it finds a valid key from your browser session, it will show up as a new key. Click the blue key icon in the webpage where it says click here for a new key. See the next 3 images as a reference to step 4.

5. Go back to the GameLauncher and enter the CD-Key that was generated and press the OK / Apply button. The software should automatically restart afterwards, if it doesn't, please restart it.

Alternatively if you need a license key generated and emailed to you, we can provide that service. Once you receive the file, you can import it by using the GameLauncher home page at the top right. Click the Import License (file). Once imported the software should restart automatically, or if not needs to be restarted before changes take affect.
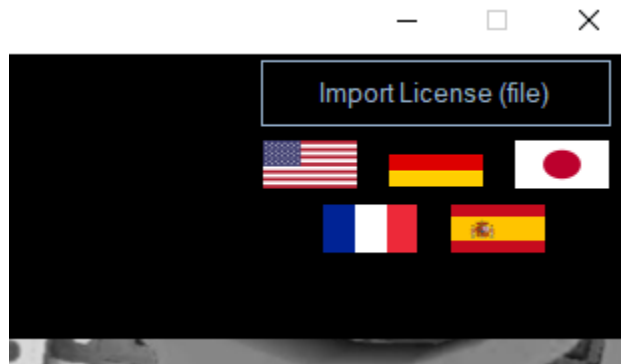
Software Updates

The Computer Repair Simulator software can be updated. We don't show a lot of how to do this in the interface because most of our releases required a new installation as we went through the testing stages and revamped the software. The way to do this though is to use the Support button on the homepage and typing in a key word. These key words will appear in the main launcher Developer Logs.

The GameLauncher.exe Explained

The Computer Repair Simulator GameLauncher.exe is the first starting file to load when playing. The launcher performs numerous functions including starting games, changing options, licensing the software, changing

languages, and many more features. This section will describe the GameLauncher main features. Other extra features will be explained later in the document such as Modding the software.
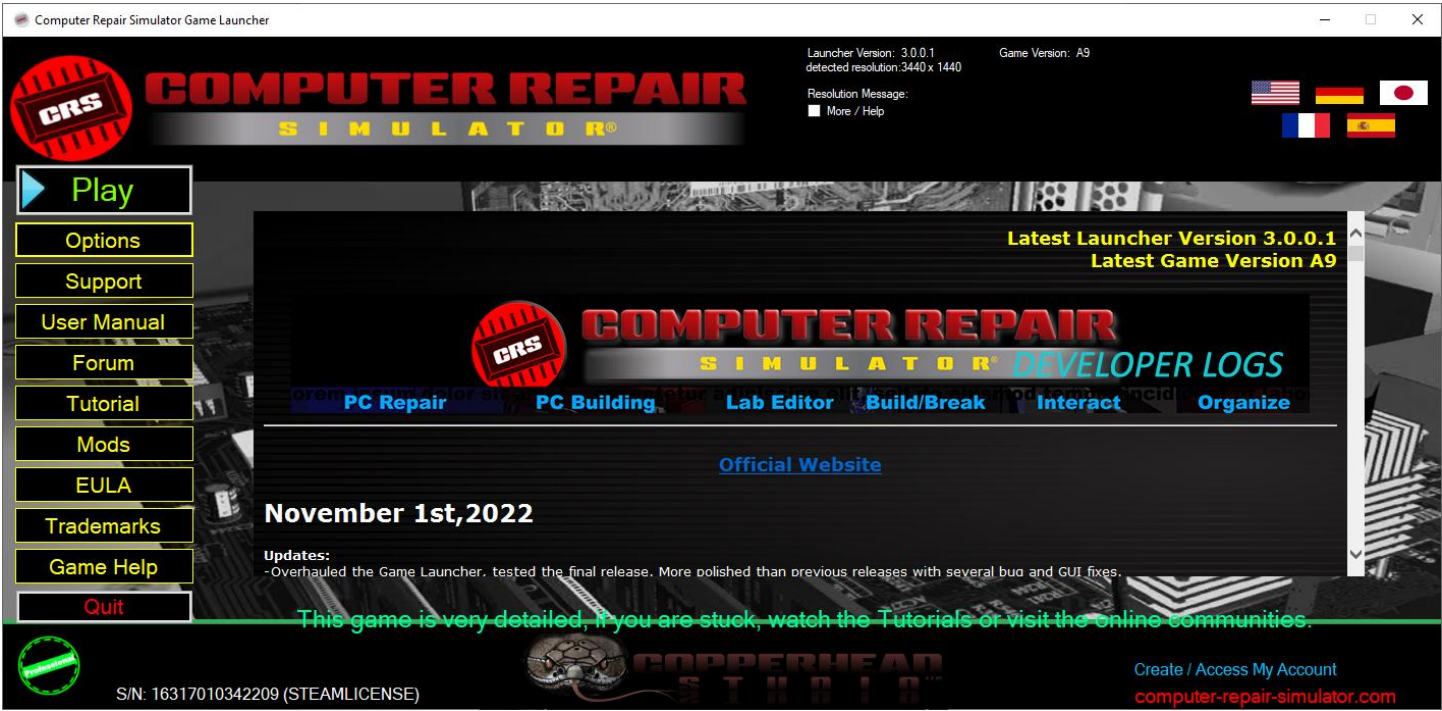
If you prefer a more simplified launcher, find the file "QuickLauncher.exe" in the same directory as the "GameLauncher.exe".
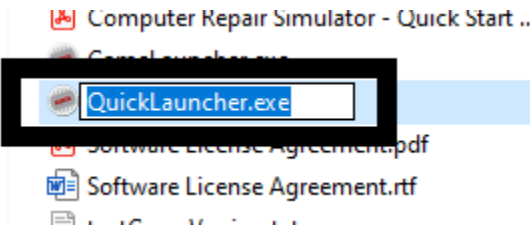
Software Main Game Options (GameLauncher.exe)
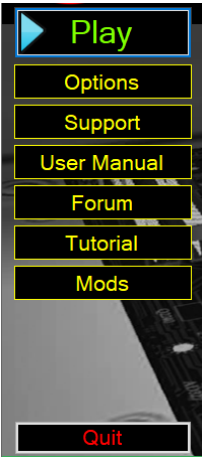
Play	This feature opens another window showing 3 different profiles that can be used. Select one of the profiles to get to the next window showing the different game modes that can be selected and started.

	Game Modes Available: Repair Mode PC Building Mode Level and Lab Editor Prototype Mode
Options	This feature opens up all of the General, Video, Audio, Controls, and other game settings. The user can adjust them as they see fit.
Support	This feature is used to perform software updates, or to allow our support team to generate a fix for you which can be quickly applied by entering a special code.
User Manual	This feature will open up this user manual.
Forum	This feature will take you to our official forums. This link is purposely not shared to reduce web crawlers. The Forum access is only provided from the Game Launcher.
Tutorials	This feature will open our website tutorial page. The tutorials are broken down into sections for easier learning.
Mods	This feature allows the user to customize the software which includes adding new objects to the lab, new hardware and software to the gameplay and inventory, unique customized banners, options to add music and sound FX, and convert Level Editor files into actual playable levels using the Repair / Build modes.
EULA	The End User License Agreement
Trademarks	Contains all direct and indirect trademarks and registered trademarks and owners with links to their websites.
Game Help	Opens a PDF summarizing the software and how to use it.
Quit	This feature will close the software.

Software Top Toolbar
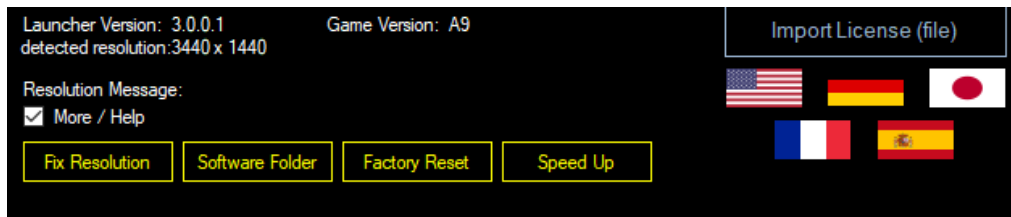
Launcher Version	This displays the installed Launcher version.
Game Version	This displays the installed Game version.
Detected Resolution	The launcher will auto detect the PC video resolution. If it isn't correct, it can be changed in the Options>>Video.
More / Help checkbox	When checked will show 4 additional buttons (Fix Resolution, Software Folder, Factory Reset, Speed Up).
Fix Resolution	This will run another scan on the PC video resolution and attempt to set the correct profile.
Software Folder	Used to get quick access to where the software is located.
Factory Reset	This will completely delete all user profiles and data. The launcher will restart and you will have default settings. This doesn't clear any of the MODs, only the User Profiles and data associated to them.
Speed Up	This feature will adjust some software settings to give better performance and reduce quality. Use this for older PCs running the software that are struggling.
Import License (file)	Used to import a license file instead of using the Manage CDKey features.
United States Flag	Changes language to English in the launcher and software as best as it can, and attempts to apply additional graphics to support the language.

German Flag	Changes language to German in the launcher and software as best as it can, and attempts to apply additional graphics to support the language.
Japanese Flag	Changes language to Japanese in the launcher and software as best as it can, and attempts to apply additional graphics to support the language. There is very limited translation within the gameplay due to limitations of characters.
French Flag	Changes language to French in the launcher and software as best as it can, and attempts to apply additional graphics to support the language.
Spanish Flag	Changes language to Spanish in the launcher and software as best as it can, and attempts to apply additional graphics to support the language.

The QuickLauncher.exe Explained

We offer a QuickLauncher which is a much more simplified version of starting the software. As seen below this option may be good for schools so that the user cannot modify the game settings.
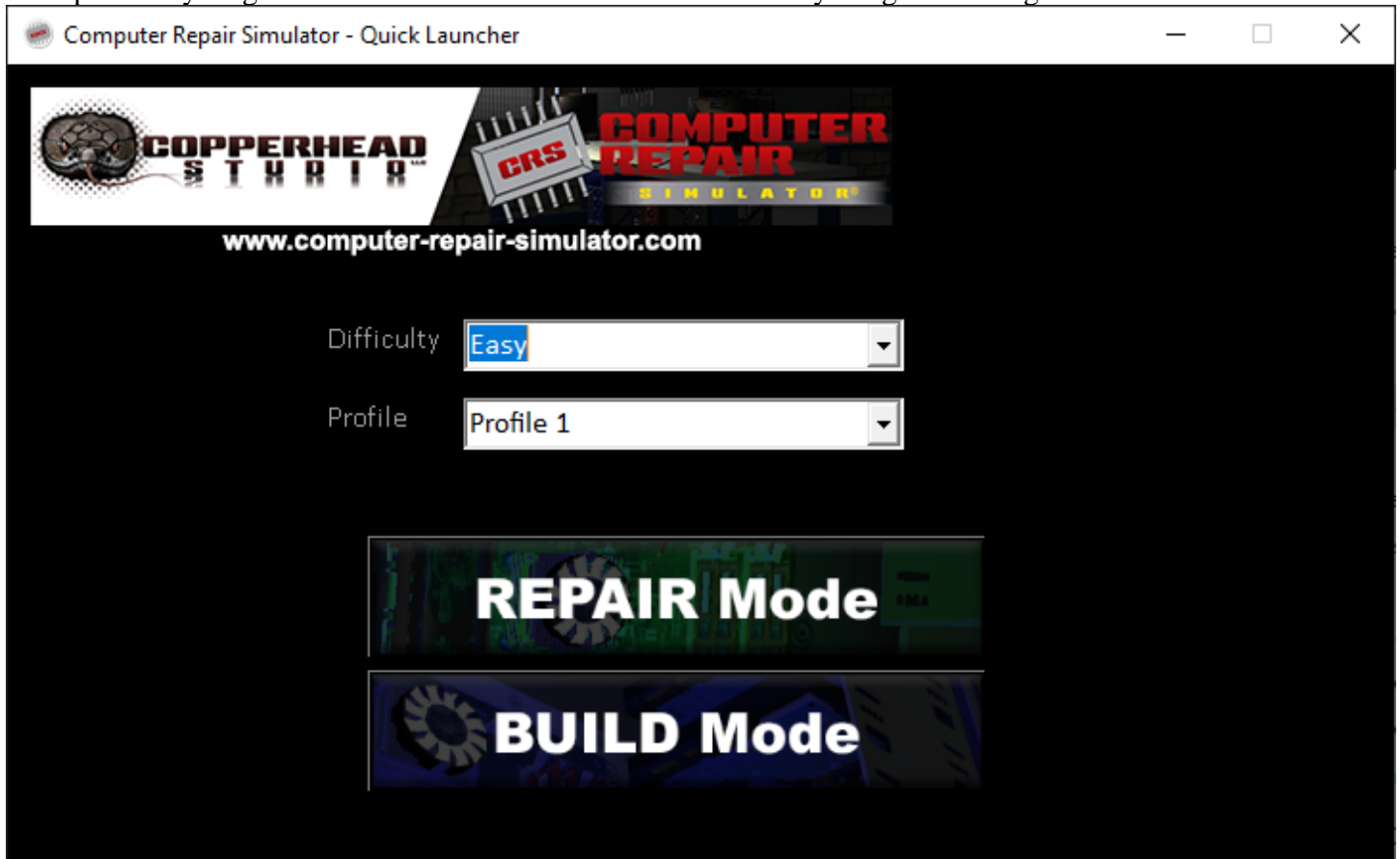
Player Profiles

The software supports up to 3 different profiles. The Player Profile window will show the player stats, allows for a profile picture to be added, backup account, resets the profile, change the level and selects a game mode. Each of these settings are explained below.
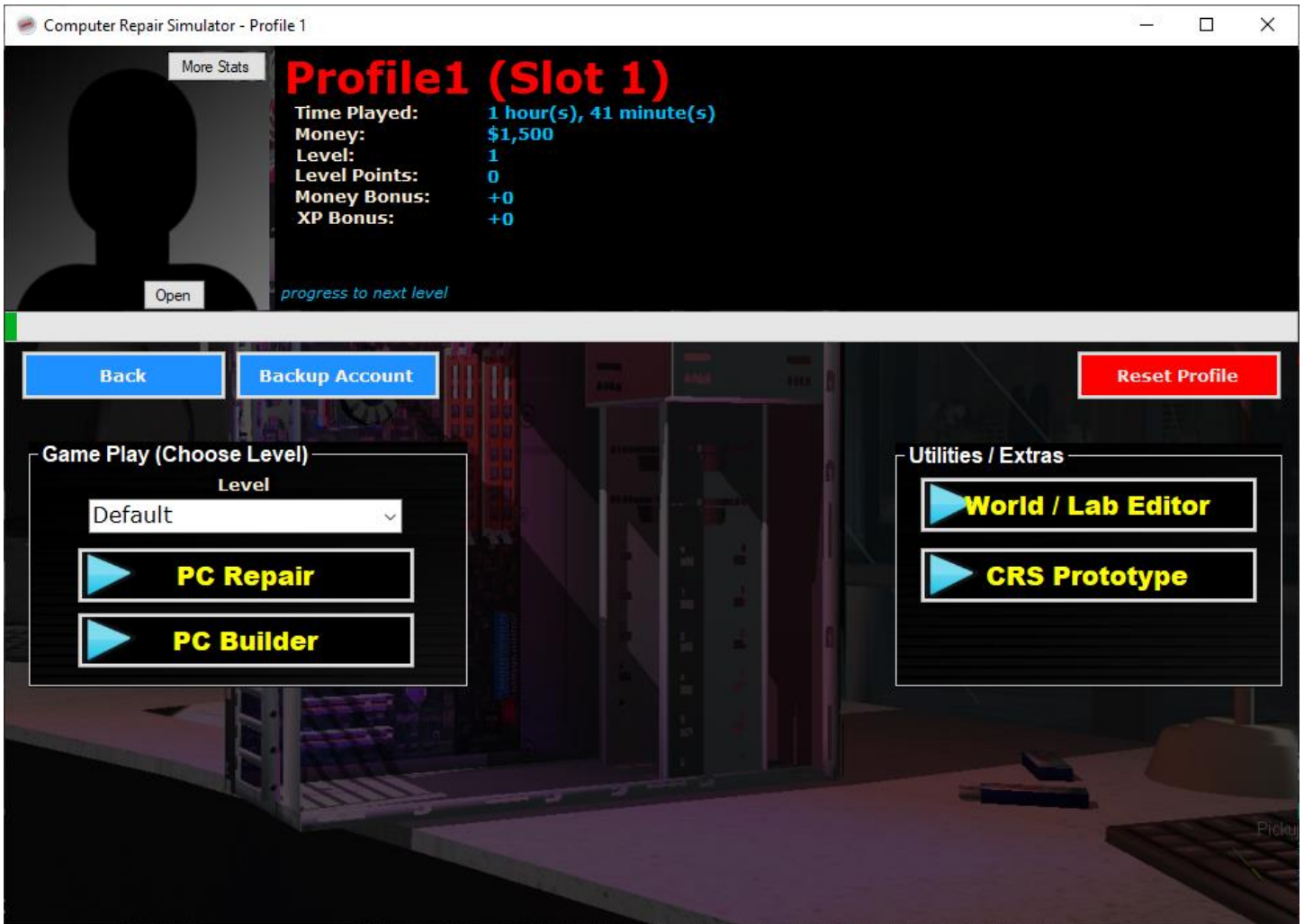
Note: By default there are default names used. To change your name, use the Reset Profile and create a new account to enter your unique player name.
Note: If you use the command "/more_xp" it could cause problems with the way the Progress Bar displays. To correct this, be sure to add / remove items until you stop leveling up.

More Stats	This feature shows the status of the player history.
Open	This feature is used to import a player profile image which is used throughout the software.
Back	Goes back a page to show the 3 different profiles.
Backup Account	This feature will copy the current profile to account_backups/Profile#. These backups will be cleared if a Factory Reset is done. It is recommended to copy this folder to a safe location if you want to keep it.
Reset Profile	This feature will default the currently selected profile so a new game can be started.
Level Dropdown	Before starting a PC Repair or PC Builder mode, select the level you want to play in. Choosing default will select map #2.
PC Repair	Click this button to start a PC Repair Game Play mode.
PC Builder	Click this button to start a PC Builder Game Play mode.
World / Lab Editor	This feature allows the user to open up the world / lab editor in order to create new content for the software.
CRS Prototype	This is just a fun extra to include. It is our original prototype of this software.

Software Options and Control Configuration

The Options Menu will allow you to adjust general game play options as described below. All options / configurations are saved into the folder the Launcher is run in which is typically the root software folder where it was installed. All files are saved as .txt files and easily editable if manual changes are needed. The options menu will simply modify the .txt files so that the game engine can quickly load them. Whenever a setting has been changed in any menu, the "Save" button will appear. Click the Save button to save any changes that were made. If you do not utilize the "Save" button after a setting change, the setting will be considered unchanged. When each menu loads, it will load your current configuration which was previously configured. If you wish to reset the settings, you can use the "Restore / Save..." button.

Note: The quick saving of files resembles Ransomware malware to some antivirus programs. Please send our support team or the antivirus program an email so they can review and mark as safe. We will be more than happy to do this as we find them, however help from the community would be great.

Warning

If at any time you decide to modify these configuration files manually, and you are outside of the game scope, the game launcher and/or Computer Repair Simulator® software may not run properly. You will need to Factory Reset the game to fix all corrupted files unless you backed your "settings" folder up. If any .txt file is considered "missing" or it has been deleted, the game launcher will crash. We recommend you utilize the game launcher to configure all settings as it will properly read/write files within the proper ranges.

General	General game play settings can be found on this page, allowing the user to slightly customize the game
Video	Video options that pertain how the game is presented to the monitor. Video Resolution and frame rate options are available in this menu
Audio	Audio options for the game, including those for sound FX and music

Movement Style	This may become more powerful in the future, but these settings tweak how the player interacts with the game
Controls	Player configurable controls that can be changed / modified
Network	Network related settings that pertain to the game
Back	Return to the previous page, usually the main menu of the launcher

General Options

The General Options menu will provide additional settings which control how the user interacts with the game but does not cover audio/video/network/control parameters. A brief description of each setting can be found below.

Page 1 Options

Difficulty	Determines the difficulty of the game. The higher the difficulty, the more you will utilize troubleshooting / patience skills. Choosing Easy will void parent/child dependencies which means you can remove a computer case without having to remove any other hardware. Choosing Easy will void any lower lying components. More difficult levels will have more failures that are more detailed.
Movement Speed Modifier	Modifies how fast the camera / player will move in the game, range is from 1 to 20, usually 2 or 3 is an optimal value
Max Click Distance	How far the mouse will interact with distant objects, set a max distance, default 1.2 meters
Sky Enabled	Controls the sky within the game, when enabled, the player can choose the sky color and weather type
Show Trees	Enable or disable the tree creation within the game. Usually can be disabled to increase frame rate
Day / Night Cycle	When enabled, the game will cycle through day / night cycles
Time	Can toggle between a 12 hour clock and 24 hour clock
Language	Set the language of the game. Some game items cannot translate and will be presented in English US
Currency	Set the currency for the game
Age	Picking an age group will change how the game presents problems / education to the player. Younger minds need an easier way of learning compared to someone going to college in their 20's
Action Speed	Uses either quick time for events / actions or real-time. Different options are available for each game mode.
More Options	Goes to Page 2 of settings (below)
Restore / Save	Factory Reset all settings on this page and save the settings. Used in case the settings need to be corrected

General Options Page 2

Debug Level	Level range from 0 to 6. If set on a lower value, fewer debug messages can be seen. If set to 6 every debug message will be seen. Also at setting 6, the Debug Log file is acted so all events are saved to the log file under the logs folder. During the gameplay, you can use the ? key to open the Debug Menu Panel
Use System Mouse	Simplified mouse for the game instead of using complicated icons and pointers
Turn Sensitivity	How fast the camera turns, default level is 5
Hints	If you wish to see additional messages and notifications during game play, enable this
Preferred Browser	Selecting the proper browser allows the users to click on in-game links to search for specs or work on the web, or to view product pages
Solo Menu	In the game there are several windows like skills, inventory, shop, etc. Sometimes if you are deep in menus trying to close them can be annoying. Enabling the Solo Menu forces other menus to close when you open a new one.
Level Limits	Turning this on allows the camera to stay within the level boundaries, no way to step outside of that. If turned off, the camera has no limits and can exit the level bounds. Be cautious disabling this feature will not be pretty when outside the levels
Level Editor Models	If you are editing a level and need to see the Dropped Items from your profile for that level 1 through 10, you can enable this. Be cautious as to not overload the engine, use this setting sparingly but having both the level editor and level editor models (especially if there are hundreds), it can be overbearing on the game. Remember game development isn't about quantity, its about quality.
Max Move Angle	This setting changes the increment in which the object you are working on spins or turns when activating the move buttons
Enable Bot	You can enable the companion bot or you can leave him out of the game play.

Video Options

The video options will allow you to create a customized view of the game, allowing you to adjust every aspect of the software including video resolution, refresh rate, and shadow characteristics.

Computer Repair Simulator - Options

COMPUTER REPAIR SIMULATOR®

General			
Video			
Audio			
Movement Style			
Controls			
Network			

Resolution	1920x1080	Custom	1905 X 1000	Cam Aspect	No
Screen	Full Screen				
Gamma			100% of default gamma		
Engine Alpha			100% alpha. Makes engine window transparent		
Color Depth	32				
Camera FOV	10000	Cuts off distant objects to increase FPS or performance			
FPS Max	60	Maximum Frames per Second			
Shadows	Off	Turn shadows on and off			
Shadow LOD	Best Performance	Shadow model reference			
Shadow Range			18% of Camera FOV		
Shadow Stencil	Z-Pass	Shadow rendering method			
Max Particles		10000 Particles			

More Video Options

Restore / Save All Video Page 1 Defaults

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Computer Repair Simulator - Options

COMPUTER REPAIR SIMULATOR®

General	
Video	
Audio	
Movement Style	
Controls	
Network	

AutoMaterial	Enabled	When enabled, models share textures in memory, otherwise each one is unique
Alpha Sort	Sort by XY	Determine how transparent objects are rendered
Alpha Ref		255/255 - transparency threshold for overlay textures
Alpha Type	Enabled	When enabled, the top left pixel is alpha, otherwise RGB 0:0:0 is
MipMapping	Anisotropic MipMapping	Used for blurring far surfaces, reducing aliasing
Anisotropy Lvl	3	Level of Anisotropy, enhances textures at an angle
Alpha Depth	32	Alpha Color Depth
AntiAlias	High	Blurs edges of polygons when enabled, helps with game smoothness
Bounding Box	Off	For debugging purposes, shows bounding boxes around all models
Texture Size	512	The maximum texture size, smaller = better frame rate
V-Sync	Off	Increases frame rate in full screen, but could cause tearing if enabled
Shaders	Enabled w/ Reflections	Determines the Shader usage, will change frame rate

More Video Options

Restore / Save All Video Page 2 Defaults

COPPERHEAD STUDIO

Resolution	Choose the video resolution in pixels (width / height) for the game engine. Custom Resolution: You may also choose to enter a custom resolution for the game engine. Keep in mind when in full screen mode with a customer resolution, be sure your monitor can output the custom resolution, otherwise what will occur is your monitor will blank out and not come back until pressing Alt +Tab to cycle out and closing the game
Screen	Choose between no video output, windowed mode, and full screen mode
Gamma	Set the gamma of the game, default is set to 50%, but the range can go between 50 and 150%
Engine Alpha	Sets the game engine transparency, good if you are monitoring items behind the game window such as emails or other software. Only supported in Window Mode. This option doesn't work in the Game Launcher, so you need to manually change the file settings/ OptionsAlpha.txt
Color Depth	Set the color depth to 16 or 32 bits, good for managing frame rate
Camera FOV	This controls the cameras Field of Vision, default is 5000. This will cut off any object or entity that is beyond its scope. This is measured in quants and can be between 100 and 50,000 quants. If the game is getting a lot of errors with DirectX or Textures, try turning this down. A good option to start with is 8,000
FPS Max	Set the maximum frames per second for the game. You may control this to get a smoother game play. You can set this between 20 and 60 Frames per Second
Shadows	You may enable or disable the game shadows. Turn shadows off to get better frame rate / smoother game play on older systems
Shadow LOD	Shadow Level of Detail, can choose between Better Performance or Best Quality
Shadow Range	The shadow range is the % of Camera FOV. So if your shadow range is set for 10, and your Camera FOV is set for 100, shadows will only be seen up to 10 quants from the

	camera. Default is 25%
Shadow Stencil	You can choose the method of creating shadows (video card and DirectX dependent). If shadows are not working well, you can tweak this option a bit to correct it. Symptoms may include shadows that stretch beyond their "normal" limits
Max Particles	Choose the maximum particle count, this is only for "visible" particles and once their lifespan is equal to 0, it will reset
Restore / Save	Factory Reset all settings on this page and save the settings. Used in case the settings need to be corrected
More Video Options	This is a button at the end of the Video Options menu to allow the user to enter the second Video Options page for additional options
AutoMaterial	When enabled, models will share the same texture that is stored in memory. For example, if there are 5 models of a RAM stick on the table, all of them would share one texture that is stored in memory rather than each having their own (difference of about 800KB and 4MB of memory)
Alpha Sort	Determines how transparent objects are rendered onto the screen. Can fix issues with transparency problems on models
Alpha Ref	The transparency threshold for overlay textures (0 to 255, default 255)
Alpha Type	When enabled, the first x/y pixel is used as an Alpha reference for the remainder of the texture, otherwise, all colors that are Red = 0, Blue = 0, and Green = 0 will be transparent (black areas)
MipMapping	Can be modified to blend far surfaces and reducing aliasing, default is Anisotropic MipMapping
Anisotropy Lvl	This is the level of anisotropy which enhances textures that are rendered at an angle
Alpha Depth	This is the alpha color depth of the transparent TGA textures which are used throughout the game, default is 32
AntiAlias	Blurs edges of polygons when enabled which can help increase game smoothness. This can also be adjusted to correct jerkiness on the screen when moving. Low = 1 pass, Med = 4 passes (default), High = 9 passes
Bounding Box	When On, you can see where every objects limits are for interaction / collision, can help determine why models are not moving where they should be. Default is Off
Texture Size	This determines the maximum size of the textures that can be used in the game. If a model has a larger texture than what is configured, the texture will be downscaled, hence increasing frames per second and smoothness, but quality of textures will be reduced. Default setting is 2048 pixels
V-Sync	Disable synchronization when in full screen which can offer better frame rate, but can also cause tearing in the frames. If you have tearing, you need to turn V-Sync off
Shaders	Offers several options for shader control. This deals more with how the objects are rendered (light fx, reflection, shadows, etc). Changing this option can greatly affect the frames per second. By default it is set to Enabled w/ Reflections
Render Distance	Change this to hide far models, you are just setting the threshold
Aspect Ratio	0 (default) use internal system 4:3 (1.333) 16:10 (1.6) 16:9 (1.777) If you want to use a specific resolution below, simply find the grouping and adjust the values accordingly (i.e. if you want to use 1440x900, set it to 1400x1050, then set Aspect Ratio to 16:10, then SAVE)

	1 320x200 (window only)
	2 320x240 (window only)
	3 320x400 (window only)
	4 400x300 (window only)
	5 512x384 (window only)
	6 640x480, 640x400, 640x352
	7 800x600, 720x480, 848x480
	8 1024x768, 1024x600
	9 1280x1024, 1280x800, 1280x720
	10 1400x1050, 1440x900
	11 1600x1200, 1680x1050
	12 1920x1200, 1920x1080
Onscreen Control GUI	When activated, a floating movement panel will display during gameplay. Using the mouse will move the camera view around instead of using keyboard input.
Restore / Save	Factory Reset all settings on this page and save the settings. Used in case the settings need to be corrected

Audio Options

The Audio Options panel will allow the music and sound FX volume to be adjusted. Explanations of each detail can be found below.

Master Volume	Select the Master Volume level, however this will change the audio card mixer settings and is considered a master volume. By default, we set this to -1 which is untouched, so that the computer services control the master audio
Music Volume	Choose the volume for all music media which include but not limited to intro music, in game music, menu music, special event music, and so on.
SndFX Volume	Controls the level of the in game SoundFX which include object interaction
CD Volume	Controls the volume of a active CD-ROM playing in the drive, used for in game music when players want to stream their own tunes instead of what the game offers.
Click Volume	Controls the volume of the button clicks / presses within the game
Restore / Save	Factory Reset all settings on this page and save the settings. Used in case the settings need to be corrected

Movement Options

Adjusting the movement style options by answering some basic questions can help find a suitable operating mode in terms of controls and movement. The game will adjust to the changes accordingly using different code combinations. Tweaking specific options may completely change the way you interact with the game. There is no explanation of each item here as it shouldn't be needed at this time, but many combinations are available which should hopefully be self explanatory.

Control / Key binding Options

This menu will allow you to configure each control within the game using a mixture of keyboard and mouse inputs. For a detailed description of each option, review the table found below. When the "Hotkey" option is enabled and not set as "---Unassigned---", key combinations would be enabled (*i.e. hold ALT hotkey and press W to move forward*). You may not have the same key configured for multiple actions, unless you are using it for the Camera Zoom In/Out option.

Camera Forward	Allows the player to move the camera forward
Camera Backward	Allows the player to move the camera backward
Camera Strafe Left	Allows the player to move the camera left
Camera Strafe Right	Allows the player to move the camera right
Camera Pan Left	Allows the player to pan / rotate the camera left
Camera Pan Right	Allows the player to pan / rotate the camera right
Camera Tilt Up	Allows the player to tilt the camera upward
Camera Tilt Down	Allows the player to tilt the camera downward
Camera Move Up	Allows the player to move the camera up and down to access different parts of the assembly
Camera Move Down	Allows the player to move the camera down and down to access different parts of the assembly
Camera Zoom In	Allows the player to zoom the camera in (linked with camera zoom out)
Camera Zoom Out	Allows the player to zoom the camera out (linked with camera zoom in)

Interact	What key is used to essentially click on items to select them.
Inventory	Toggles the player Inventory panel
Skills	Toggles the skills menu where players can spend in game achievements to unlock additional features
Statistics	Toggles the statistics panel
Store	Toggles the in game store
Toggle Build / Break Mode	Toggles between Building / Breaking mode. When you are in build mode, you will see outlines of parts that can be added, but when in break mode, you will be removing parts from the assembly. When you remove an item, break mode will be changed back to build mode due to the complexity of trying to disable it every time
Debug	Opens the debug menu for diagnosing game issues and problems, also allows you to enter special commands to control the game (see Index I)

Network Options

These features are currently not used in the software and will be available at a later time.

Published Server IP Address	This will display the official server IP address. This information comes from the website server and anytime it needs to change, we will post it here. This is nothing more than an HTML GET call to retrieve the information. This will allow us to notify of the server status in case the server is down.
Server IP Address	If the server IP address changes, you may modify it here, or to be used when joining local games
Server Port	Enter the port number of the Computer Repair Simulator® game service. By default the official server will always use port "30000"
Server Password	Allows you to enter a password for a local game, otherwise the official default password is "CRS"
Local User Name	Enter a local user name, mostly used for in game information when not online
Chat	Options to enable or disable chat. Foul language is not checked in the code, so if you do

	not wish to see others chat, simply disable the chat option.
Online Mode	In this mode the online features will be enabled
Restore / Save	Factory Reset all settings on this page and save the settings. Used in case the settings need to be corrected

Software Interface and GUI

When any game mode is started, you will see several different groups of icons on the screen as seen below. Each of these groups are described below.

1	Displays environment and player properties, also contains shortcuts to inventory, shop, skills, music, exit game, and camera reset
2	Toolbar that manages the build/break mode, help, flashlight, soldering iron and ESD
3	Toolbar that allows for quick selection of items, items like flashlights / soldering / ESD tools must be equipped here before they can be used.
4	Scenario control allows for timing of the job, total problems left, help, and give up
5	Info and Feedback panel

The Profile Window will show you information which includes your player name, your level, the temperature, how much ESD you have built up, how much money you have, along with several shortcut buttons below the panel. When you change the language in the Options, this menu will also update accordingly. You may move this window around if it doesn't fit in the top left hand of the screen. The descriptions of each function are below.

User Name	The user name is the first string in the panel, you shouldn't miss it
	Quits the game
	Represents your current level. The game supports unlimited levels, but each level is harder to get than the last
	Displays the temperature of the game in 2 different modes
	The ESD icon will show you how much ESD you have built up, be careful not to build up too much ESD or working on hardware can go wrong.
	Displays the amount of money you currently have. You may change the symbol of the money within the options of this game
	This button resets your camera view (height, pan, tilt, roll). It will also reset any open windows you have to a working position if they fall off the screen. This typically is used to realign your camera with the player direction so that you can use the forward button and continue walking forward and not in some other direction
	Click this to open your Inventory, can also be used to close Inventory if it is already open
	Click this to open your Skills, can also be used to close skills if skills are already open
	Click this to open your Store to buy new hardware, or if the store is already open, this button will close it
	Use this button to listen to some game sound tracks. You may use the play, pause, and forward/backward options.
	Click this button to enable a crosshair in the center of the screen so you can use the mouse to turn. Use the right click to disable this mode as you cannot navigate menus easily while in crosshair mode.

User Menu

When playing through a scenario, there will be several things which you will need to focus in on. These items will be presented below.

Scenario Control Panel – This panel is used to control the current scenario. You can see how much time you spend on the project along with checking in to see how many more issues there are. You can always ask for

help or get a tip but this will cost you money. If you wish to decline the scenario, you can use the red close button.

You will need to use the tool belt icons to help you through the game.

The hand icon is the toggle build/break mode, when activated the player may also choose to manipulate the hardware being worked on (move / turn / spin). This also lets the player turn off activity with the objects so they can navigate on a finer level without bumping into anything. The brain icon is the HELP option. If you click this any damaged hardware will begin to flash red for several seconds to help you define the problem. This function requires cool down. The flashlight icon will be disabled until you activate a flashlight from your inventory. Once you activate the flashlight, this icon will be enabled so you can see in the dark. The soldering iron icon allows the user to toggle the soldering mode during game play. Again, you will need to activate a soldering iron from the inventory first before this option is enabled. The ESD icon will allow the user to dissipate ESD while playing. The ESD equipment must be activated from the inventory before it will begin to work.

Inventory Menu

The Inventory Menu will manage your hardware. You can increase your inventory max capacity by increasing your skills. While in the inventory you may manage most items (sell, drop, repair, view specs, put in tool belt), however some items may not have all options available.
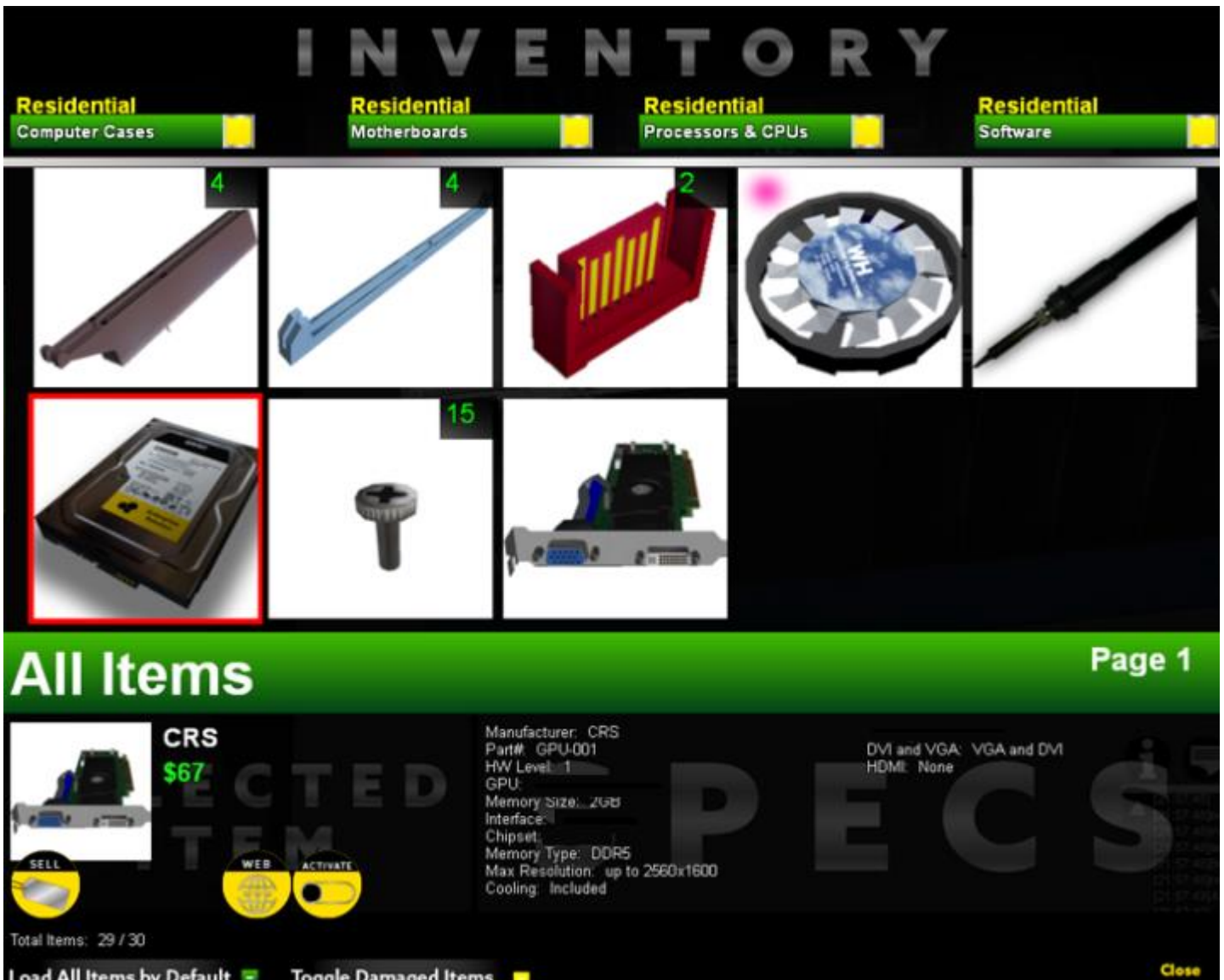
While in the inventory menu, simply click any hardware item to see additional options and specifications. When you begin to collect a lot of hardware, it is best to use the four (4) shortcuts at the top of the menu. You may use your left and right clicks to set a category so you can quickly sort out the hardware you need. You may also use the check boxes at the bottom of the inventory menu for loading all items by default or showing only fixed / broken items.

You may also notice that you can change the pages of the inventory since each page maxes out at 10 items. If you have more items in your inventory, you can page forward / backward.

The inventory will keep tracking of your current and maximum item count. This value can be found in the bottom left hand corner of the Inventory menu.

Dropping and Picking Items Up

You may drop items from your inventory into the lab (as well as pick them up if you are in build/break mode). Keep in mind that you shouldn't overload the level with 3d models as this could hinder game experience. When

you are in the inventory view and want to drop any item, you will have a new menu system appear on the screen resembling the one below. You can use the arrows to position the item, and the panel to change its angle, pan or tilt. You may also choose to drop object where it is positioned (even if it defies gravity), or drop the item and let gravity find its way.
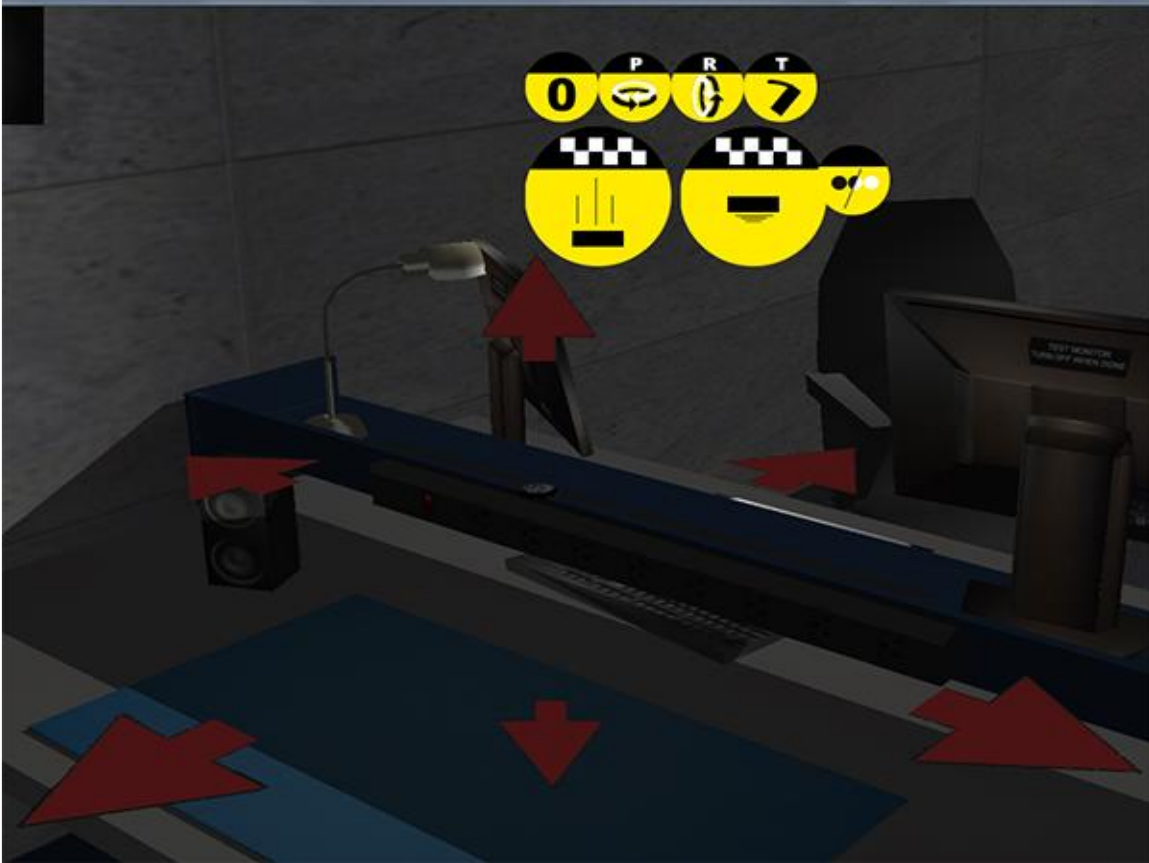
Moving the "Task" Around

At any time, you may enable the Build / Break option which will open up a secondary menu system allowing the player to manage the hardware location and position. These jobs can be moved around the room in order to accomplish a goal, or to simply have a better workspace. While moving the hardware, you may encounter odd glitches (i.e. you can place hardware within other objects), however you should try to fix them as best you can by removing the item for optimal game play. If you want to reset the hardware, you can use the reset button.

Information Panel

The info panel will show messages while you interact with he software. Pay attention to certain events as it will help with completing the task(s). Additional information can be gathered from the scenario manager panel for at a cost.

The menu can be scrolled up and down to see older messages in the event something is missed.
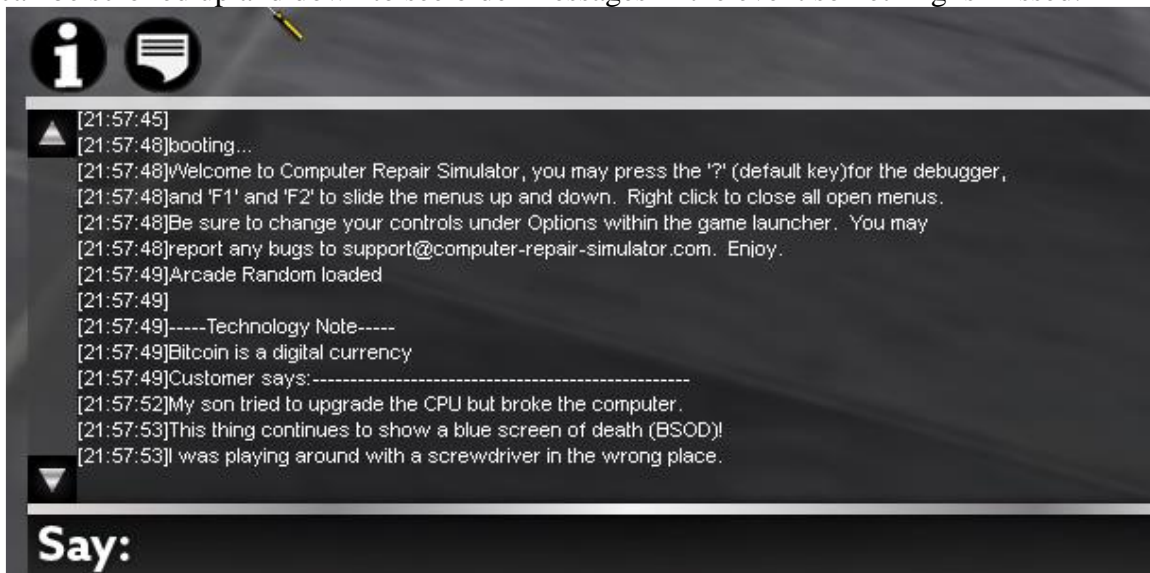
Skill Menu

The skill menu will allow a player to progress throughout the stages of the game. The skills interfaces allows players to gain Skill Points, and use them to purchase Skills which will help them along the way. Several skill categories ranging from hardware to software are up for grabs, along with some extra easter eggs. Skill Points are earned every time the player level is increased. Increase the player level by completing task(s).
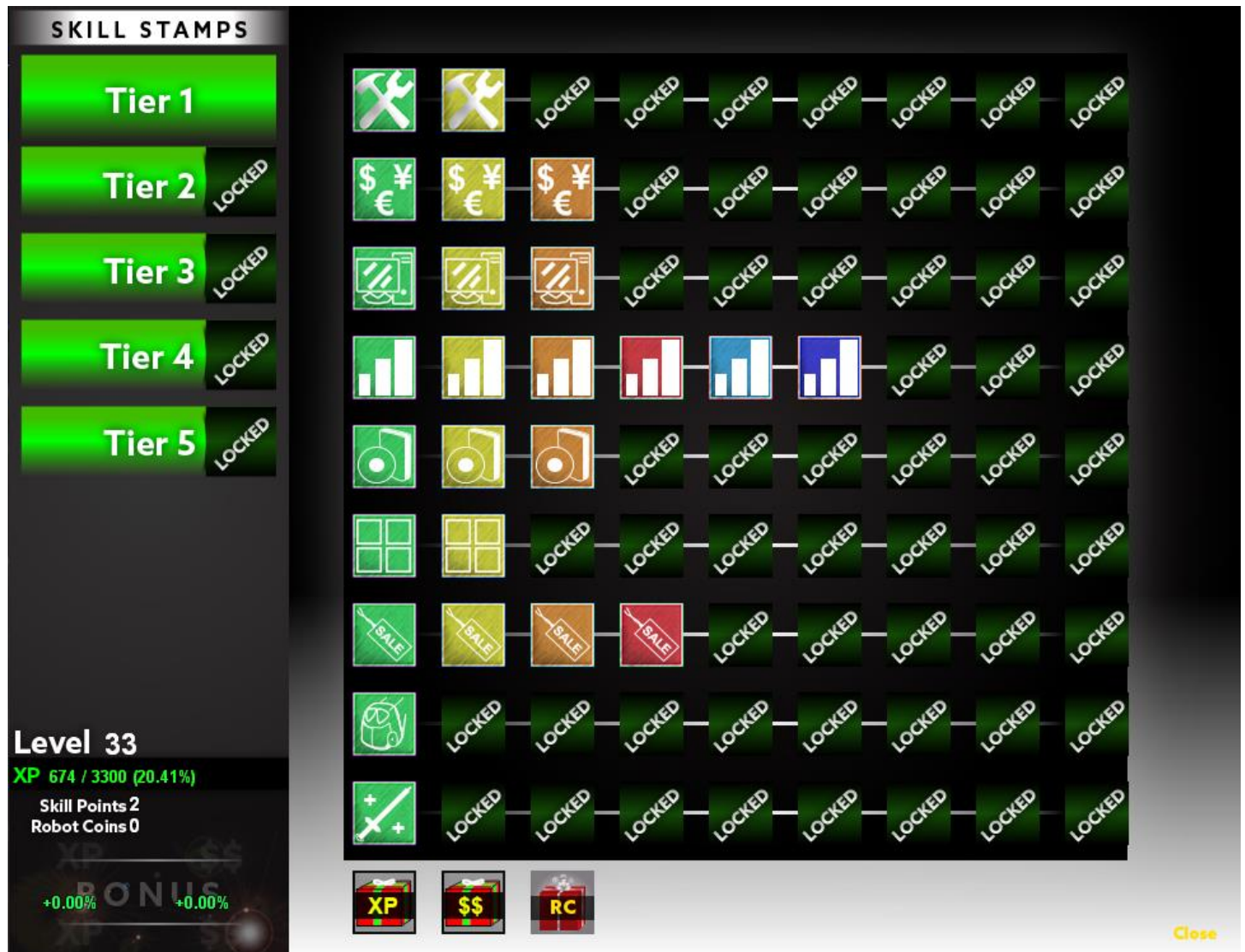
Mousing over any skill will show additional details.

Shop Menu

Hardware can be purchased from the shop to help support the player. Clicking the category and navigating the shop allows the player to purchase hardware, software, compliances, and much more.

1	The main navigation to access different hardware categories
2	Click this to change the main category, there are currently 3 categories (Residential, Commercial, Manufacturer)
3	This panel shows the image and specification of the new product
4	This will show you your price (after your skill discounts), also this area lets the user access a web page that may relate to this hardware. Once confirmed, use the Buy Now button to purchase the item.

Mods

The Mods area within the launcher will allow the developers and end users to customize the game. It allows users to streamline their own models / properties within the game itself so they can easily be interacted with. This allows for a more modular and customizable game play. You can read more about this in this section.

Currently Supported Items:

1. Importing .MDL files into the world editor (*300 models max each category, 1200 total models*)

2. Importing models (*.mdl format for models, JPG, BMP-alpha, PNG-alpha, TGA-alpha for textures*) / Technical Specs / Images of in game hardware to interact with (*great for custom releases, and users who want to use their own models, the game already knows what to do with it, you just may need to tweak the textures as it relates to rendering, or tweak the size of the model)(50 models max each category, except screws and hardware which is 30, total 40 categories, 1980 total models*)

3. Importing of SoundFX (.wav format) that can be applied in the World Editor and in the Scenario Editor (*up to 50 sound files max*)

4. Importing of Music (.wav format) that can be applied to the World Editor (*up to 50 music files max*)

5. Converting World Editor files to Scenarios so they can be played (*up to 100 scenarios max per DLC*)

Other good things to be aware of while modding

*Your root directory for the Inventory / In Game hardware is found in meshes/interactive/
*Your root directory for the World Editor objects is found in meshes/interactive_we/
     *You may need to put external textures in these folders when importing a model, manually
     *Read the __READ_ME.txt as this will guide you to what files are what
*If you want to change the default camera direction, weather, and time of day for a scenario, you can manually modify it today by finding the custom/worlds/scenarios folder, and then modifying the Level#Weather.txt file. The example below shows modifying the weather / day and night cycle within the first Scenario Level1Weather.txt.
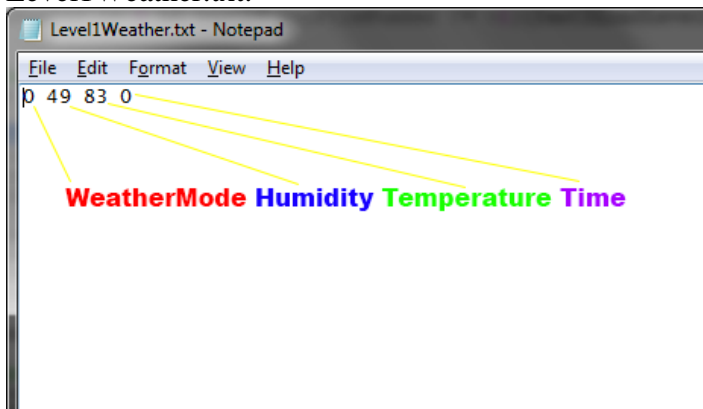
WeatherMode	0 = Automatic Random Weather, doesn't look at other variables.
	1 = Use Manual Settings (humidity, temperature, time)
Humidity	0 to 100, 0 being no rain / snow and 100 being heaviest rain / snow
Temperature	Controls the Temperature of the game, -20 to 110 degrees
Time	0 to 1440, 600 to 800 being prime daylight while 0 through 400 and 1000 to 1400 are nightime

*If you want to change the default loading direction of the camera / player, you can manually change it in custom/worlds/scenarios/, and you can find the file Level#PlayerStart.txt, and change the fourth variable (default it is 0, you can use 0 to 360).

Console Menu

The Game Debugger lets users watch active functions / variables for critical non-repeating calls, be able to enter commands to change the game parameters, and be able to log all actions in a data file found in your logs/ folder. If the Debug Level is set to 6, the logs are very detailed. On levels less than 6, less logs are saved. When debugging it is a good idea to set this to 6.
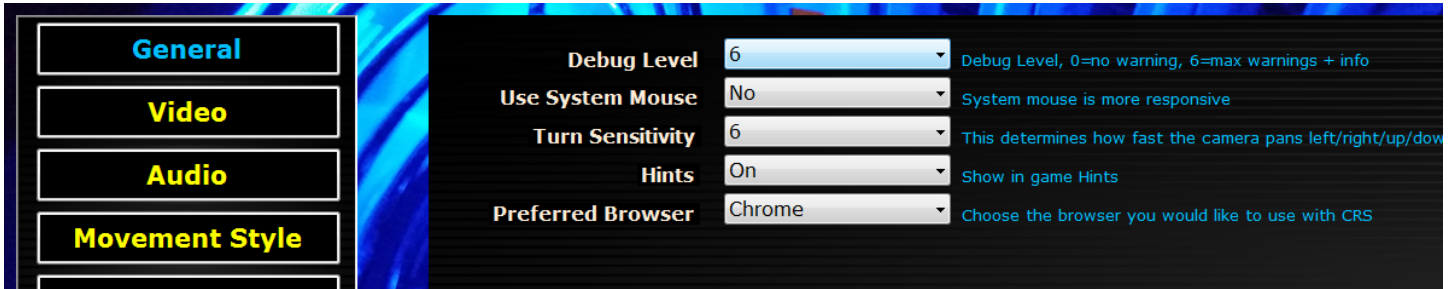
The default key to open the Debugger is "?", but it can be changed in your Options >> Controls. When the debug key is pressed, it will open the Debugger 2.0 Panel. This console will begin showing tasks / functions that are being executed along with important system health information. When this window is open, if the Enter key is pressed, a new command be entered. If the command needs to be repeated, click the ">exec last command" text to keep repeating it, good for changing weather.

All logs are saved in /log/logDebug.html file. This is very helpful for identifying issues with the software.
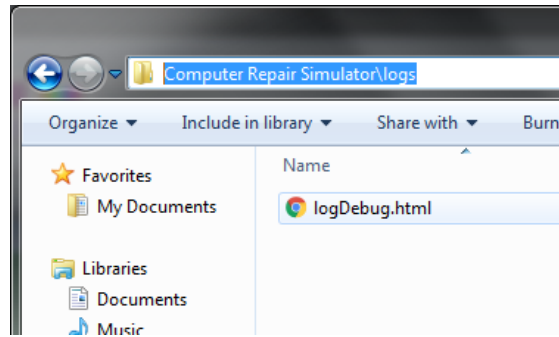
Level Editor

Content coming soon, available in-game just have not had time to write it up.

Console Commands

The unlicensed version does not support console commands. Below is a list of commands that can be entered in the game engine debug / console. To do this, open the "Debug" menu (default key "?"), and press the "Enter" key to place the cursor in the terminal. Once in the terminal, type the command starting with a "/" and press the "Enter" key once more to send the command.

/time - displays time
/time_up - turns up the game time by 150 (out of 1440)
/morning_now - changes time to morning
/day_now - changes time to mid day
/evening_now - changes time to evening
/night_now - changes time to night
/exit - exits the game engine
/humidity - displays the humidity
/humidity_up - turns up the humidity by 5
/humidity_down - turns down the humidity by 5
/temp_up - turns up the temperature by 5
/temp_down - turns down the temperature by 5
/vidmem - displays how much video memory is left
/nexus - displays how much nexus is left for models etc
/reset_player - if you get stuck, you can use this command to reset the player
/toggle_speed - used to run MUCH MUCH faster
/happyday - Turn off rain / snow, make sunny day
/reset_view – Resets the camera position back to default if you get twisted up
/no_gui - Turn off the GUI (cannot use game in this mode but good for clean pictures)
/gui - Turn on the GUI
/more_money- Gives the player money
/more_xp – Gives the player 5000 XP (be sure to check skills to verify the first number is not larger than the second, if it is, add or remove some parts to cycle the XP function to let it catch up)
/hints_on- Turn on the in game pop up hints / panels to help teach new players
/hints_off- Turn off the in game pop up hints / panels.
/change_level- Changes default level, software must be restarted after.
        "/change_level 1", changes current level to 1
        "/change_level 2", changes current level to 2
        "/change_level 3", changes current level to 3
/change_name – Changes the current player name
        "/change_name Spike", changes current account name to "Spike"
/activate_profile – Changes the default profile (value range: 1 (default), 2, or 3) software must be restarted after.
        "/activate_profile 1", activates profile 1 account
        "/activate_profile 2", activates profile 2 account
        "/activate_profile 3", activates profile 3 account
/change_difficulty – Changes the game difficulty level, only activated after the existing scenario is completed. software must be restarted after.
        "/change_difficulty easy", changes game mode to Easy
        "/change_difficulty medium", changes game mode to Medium
        "/change_difficulty hard", changes game mode to Hard
        "/change_difficulty expert", changes game mode to Expert
        "/change_difficulty insane", changes game mode to Insane

Reporting Bugs

If you encounter a bug, please report to support@computer-repair-simulator.com and send the following in an email:

- the debug file found at /log/logDebug.html (make sure you have the debug level set to 6)
- a clear description of the problem, information such as what lead up to the bug, is it related to a specific action or key, and what was the message displayed
- a screenshot if you can

Game Error Code Glossary

Sometimes the game throws errors, but usually only when you have the Debug Level set to 6, otherwise the game may try to do what it can to continue. In the event you have an error code, please use this glossary to reference what the issue may be.

Aside from script syntax errors, error or warning messages indicating a malfunction can be issued by the engine at startup or during runtime. If the problem is not obvious, run the engine in -diag mode and check the acklog.txt for a more detailed log of the problem.

Machine code generator: Can not translate OP:TYPE1:TYPE2:TYPE3
Indicates an numeric operation with wrong parameter types, for instance an AND or OR operation with a float or double type. In that case, typecast the expression to the correct type.

Warning W71: Can't play sound
Attempt to play a sound that can't be used here; in most cases a stereo sound was played as a 3D sound by ent_playsound or snd_play functions. For stereo or background sounds use the media_play function.

Error E155: Can't open mouse device
DirectX could not detect your mouse. Make sure that a mouse is connected and a recent DirectX version is installed on your PC.

Error E351: Corrupted engine (possible virus!)
An attempt to hack or modify the engine was detected, probably due to a virus infection. Close all programs and run a virus scanner at once.

Error E355: Startup failure
A published engine could not start. Possible reasons are modifications to the executable, resource, or script after publishing. This can also happen if the .CD folder contained old content. Delete the .CD folder and publish again.

Error E356: Problem with script
The script could not be executed. Either it contains a syntax error that is indicated and has to be fixed. Or it was not found in the current directory. Or it was modified after publishing.

Error E1001: Untitled file
You have probably forgotten to save the level or script before running it. Use Save As.. to give the file a name.
Error E1004: Not enough memory (xxx MB required)
Error E1005: Out of memory
A Windows memory allocation (malloc or new function) failed. All today's PCs should have enough virtual memory (more than 2 GB), so you'll normally never see this error message. Check if your PC is misconfigured or set up to a very low virtual memory size. Another reason for this error message can be a too-high nexus value (exceeding the recommended limit) or a damaged model, sound or image file with a wrong internal size.
Error E1100: Can't open level
Error E1101: Bad WMB format
Error E1107: Unsupported WMB version
The WMB file was not found or damaged, or compiled with a newer WED version that this not supported with this engine. Re-compile it.

Warning W1103: Compiled without meshes
The WMB file was compiled with an old Gamestudio version or in A6 mode, and does not contain meshes (see Map Compiler). Re-compile it. This warning is only issued when the warn_level variable is set to 4 or above, or when a function requires an A7 compatible level, such as decals or decal shadows.

Error E1104: Invalid texture size
Error E1105: Bad texture animation
The WMB file contains textures that have an invalid size (not divisible by 16), or their animation cycle does not begin with +0 or is interrupted.

Warning W1108: Oversized texture
This texture will be displayed in reduced quality on many target systems. This can happen for textures bigger than 2048x2048 pixels or cubemaps bigger than 512x512 pixels. For supporting old 3D cards, do not use textures bigger than 1024x1024. This warning is only issued if the warn_level variable is set to 2 or above.

Error E1112: Bad size
The bitmap file contains a wrong texture size.

Error E1115: Bad format
The file contains an invalid format - for instance, a bitmap with an unusual color depth or compression format that is not supported by DirectX. Please see file formats for the supported formats.

Error E1192: Unsupported feature
You've attempted to use a feature that is not supported by your edition. See editions.

Error E1201: Nexus too small
You have to increase the nexus memory (see: -nx command line option or WED Map Properties) for this level, or - if the nexus is already at the recommended limit of 200 MB - reduce the number of elements in the level. A6 only; in A7 the nexus is automatically increased.

Error E1220: General Error
An internal error happened (development version only). Note the circumstances, and contact Gamestudio support.

Error E1230: Not enough video memory
Your 3D video card is not suited for DirectX games because it offers not enough memory for basic functions such as screen buffer or memory management.

Error E1241: Can't open DirectX device
Error E1246: 3D driver failure
You need a DirectX 9 compatible video card for running DirectX applications. All video cards manufactured after 2003 normally will do. But if the device still can't be opened, either the video driver or the DirectX library is damaged or not properly installed on your PC. Install the latest DirectX version, and download the correct driver for your video card from the manufacturers website. For very old 3D cards of the last century, use weak mode (command line option -w3d).

Error E1299: Trial version timed out.
The run time of the trial engine has expired.

Warning W1301: Can't open file
The given file was not found in the path or resource.

Error E1302: Bad MDL format
The given model file was damaged or has a wrong format.

Warning W1305: Bad File Name
This warning is only issued when the warn_level variable is set to 2 or above. The entity file name contains invalid characters such as ' ', '/' or '\' - the latter is interpreted as a path and will lead to publish errors.

Warning W1306: Oversized
This warning is only issued when the warn_level variable is set to 2 or above. The entity is too big and split in too many parts by the BSP tree at it's current position. Therefore the BSP culling can not be used for that entity, resulting in a slower frame rate. The number of BSP splits for an entity can be minimized by placing its origin at its center position.

Error E1308: Can't be rendered
The entity can't be rendered by your hardware. Normal video cards can only render meshes of up to 65536 vertices or triangles. For a terrain, use chunks.
Warning W1309: Bad texture size
This warning is only issued when the warn_level variable is set to 1 or above. Some of the entities' skins are not a power of 2 in size. In most cases the engine will fix the skin automatically, but this is not possible here (f.i. because the entities' skins have different sizes). The entity will be rendered, but with partially wrong skin coordinates. Open the entity in MED and manually fix the skin size.

Error E1310: Bad scale value
The entity is too small, too big, or otherwise ill-scaled. It would never be visible on screen with this scale value.
Error E1320: Action not found
You've renamed or erased the entity behaviour action out of the file, or the action name exceeds the 20 character size of the WED behavior panel.

Error E1340: Not enough entities reserved
Too many entities are placed in the level. The maximum number can be set through max_entities.

Error E1341: Too many chunks or entity types
Too many terrain chunks, entity types, or entity clones are used in the level. The maximum number can be increased by increasing the nexus.

Warning W1351: Can't open file
Warning W1352: Can't play sound
The sound or animation file was not found or has an invalid format.

Warning W1401: Client/Server communication trouble
Warning W1402: Client/Server buffer overflow
The client/server connection was interrupted for more than a second, or too much entities were created by ent_create at the same time.

Warning W1403: Too many clients
More clients try to connect than entities are available in the level. The client is rejected. Increase max_entities.

Warning W1404: Incompatible engine versions
The client uses an engine with a different protocol version, and is rejected.

Warning W1407: Invalid join attempt
A client running in a wrong mode - for instance, with a different game level - attempted to join the session. Only issued by the Development Engine in server mode.

Warning W1500: Failed (...)
A function could not successfully perform its task. This warning is issued when warn_level is set to 3 or above. The function name or reason of the problem is given in the message.

Warning W1501: Empty Pointer
You are using a pointer that was not initialized or does not point to any valid object. Typical beginner's mistakes are using an entity pointer before it was set up in another action, or after it became invalid due to removing the entity.

Warning W1502: Possible endless loop
You have probably forgotten to place either a wait or some termination check in the loop of the given function. Read the script tutorial about loops.

Warning W1503: Invalid array index
You gave an index that exceeds the array length.

Warning W1504: Negative argument
You used an arithmetic function with a wrong argument, like a negative value for a square root.

Warning W1505: Heap damage
Your script accessed an invalid memory area within the last frame. This can happen for instance when calling functions with wrong numbers or types of arguments, or writing past the end of an array.

Warning W1506: Too many functions
The reserved memory area for functions was exceeded. Probably you are creating non-terminating functions in an infinite loop. The memory required by a function depends on its variables and pointers. Functions only consume memory when they run. The nexus (see: -nx command line option or WED Map Properties) determines the memory area reserved for functions in units of 2 kB (f.i. 80 kB for a nexus value of 40, enough for about 10,000 simultaneously running functions). The number of running functions is displayed in the [F11] panel.

Error E1507: Video functions not available before first frame
You called a DirectX function already before DirectX was initialized in the first frame. Use wait(1) to wait for the end of the first frame when a DirectX device is available.

Warning W1508: Can't load
You've used game_load for loading a .sav file that was saved by a different game or script file; or engine objects (other than level entities) were created between saving and loading. Variables or objects could have been overwritten, so better exit and restart (after deleting the faulty .sav file).

Warning W1509: Avoid save/load in same frame
You've attempted to execute several game_load or level_load operations at the same time. Only one load operation is possible per frame cycle - the others won't be executed.

Warning W1510 - Inkey already active
An attempt was made to run inkey() twice at the same time.

Warning W1511 - dangerous instruction in event
This runtime warning message will be issued when the given event function contains bad script code -a forbidden instruction (see "Event-Traps") that changes something in the level or can trigger an event itself, like c_move, ptr_remove, ent_create, c_trace, c_scan, video_switch etc. in the first cycle of the event. Insert a wait(1) before executing such instructions in an event function. This warning is only issued if the warn_level variable is set to 2 or above.

Error E1512: Empty prototype ...
An empty function prototype was called. This can happen when the function body is missing, or a function was called from a DLL that doesn't exist or was not found. Check the acklog.txt - functions with missing bodies are listed there.

Error E1513: Crash in...
A function of your script crashed. The usual suspects are accessing an empty pointer, dividing by 0, or trying to do something with a nonexistent object. Crash errors are only indicated in the development engine. The distributable version will not issue an error message, but just try to recover from the error, and if this is not possible, exit the program. The name of the erroneous function is displayed (A7.80), so the error should be easy to find in your script. If you get a crash right at startup or level loading, a damaged sound, image, or model file might be the reason. Another possible reason is a wrong setting of the DEP (Data Execution Prevention) in your Windows system configuration that prevents running scripts.

Error E1514: Invalid pointer or handle
An engine function, like handle or ptr_for_handle, was called with an invalid pointer or handle.

Error E1515: Invalid arguments
A function was called with a wrong argument type or number, or a NULL pointer when a valid object pointer is expected. The expected type is indicated in the message.

Error E1516: Invalid pointer freed
A function such as ptr_remove or ent_remove was called with an invalid or already-freed pointer.

Error E1517: No level
You're attempting to modify your level, usually by placing entities in it, but have forgotten to load that level before. If you don't know what a level is and how to load it, read the lite-C tutorial.

Error E1521 - can't load DLL
The plugin DLL can not be loaded. It's either not a valid DLL or does not run on the target system because it uses another DLL - for instance, a certain DirectX library - that's not installed there.

Error E1525 - object not available for DLL
The warning messages by a5dll_getwdlobj about trying to access a nonexistent variable or function are only issued if warn_level is set at 2 or above. Otherwise a5dll_getwdlobj returns NULL and the DLL must handle this error.

Warning E1527
Warning issued by the error function in your script.

Warning W1550 - Error in effect
The effect or shader script has a syntax error. The line number will be indicated by the error message.

Warning W1551 - Effect unsupported by hardware
The technique uses a feature or shader version that is unsupported by the 3D card. Never forget to add a fallback technique to any effect in your released game. The DirectX Caps Viewer gives information about which features are supported by your hardware.

Warning W1552 - Normal or height map missing
This warning is only issued when the warn_level variable is set to 1 or above. A shader contains a matTangent matrix or a REQUIRE_NORMAL or REQUIRE_HEIGHT bool variable, but a normal or height map is missing on the block or model.

Warning W1553 - Can't create alpha
The texture is static and can't be converted to an overlay or alpha texture.

Warning W1602 - Too many contacts
This warning is only issued when the warn_level variable is set to 3 or above. A physics collision exceeded the number of available contacts. Increase ph_max_contacts.

Error E1603 - Physics not enabled
You're calling a physics function without a loaded level or with enable_polycollision disabled.

Error E2000 - D3D error
The DirectX device encountered a general error.

Error E2005 - Can't create D3D texture
The texture format is invalid or unsupported by DirectX or by your video card.

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