

Tech Day 2017

Thursday 16th February





Introduction

Louise Misselke (Principal)



On behalf of all our staff and students, I am delighted to welcome you to our very first Tech Day! This event has been planned and brought to fruition by our IT students and their lecturers, to act as a showcase for the fantastic work the students are doing as part of their College courses. We are so proud of them and are sure you will be impressed with what you will see and hear from them today. We would very much appreciate your feedback - please send this to Peter McCook, Programme Leader: peterm@gcfe.net

Julian Winser (Chair, Board of Governors)



This is a great idea. Every person, whether working or not needs to have a good enough knowledge of modern day technology to survive, let alone prove they have the basics to get any job both now and particularly in the future. It is now a basic of education alongside a good command of their native language and an element of numeracy. As we move forward it will become even more important as working with Artificial Intelligence becomes embedded in every workplace.

Peter McCook (Programme Leader Computing & IT)



Peter McCook, the Programme Leader and all the team in the IT Department welcome you to Guernsey College of Further Education (GCFE) and to the IT and Computing department Tech Day 2017.

The students have been preparing for today's event for the past four months and have used many skills and knowledge gained from the course of study they take. Please feel free to discuss their work and find out more.

I would like to thank Sigma for providing a 3D printer display, and a special thank you to Solutions Diverse for bringing the latest in Holographic display technology to Guernsey.



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What is Student Tech Day 2017?

The Student Technology Day 2017 gives the GCFE IT/Computing Department, staff and students the opportunity to showcase and display the work currently being carried out at the various levels of courses being run. There is also the opportunity to participate in discussions on the current state of technology and future provision at the College of Further Education.

Value to the College Community

- Brings the College community together to share knowledge and experience of what we do.
- Provides the opportunity for informal 'getting to know' future employees and employers.
- Helps to align the provision of the College with the Island's needs.
- Provides stronger bonds with the Community and the College.
- Promotes the good work and good practice of the department with a wider audience.

*This brochure has been written and designed by the participating students
The numbers shown for each project team description represent the location in the hall*



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Keynote Speakers



David Chamberlain

David is a veterinarian and graduated from the Royal Veterinary College in 1987. Following graduation David moved to Guernsey and started working as a locum for Isabelle Vets where he worked his way up to a Director. It was during his time in practice he conceived the PetPorte and filed a patent application in 2001. In 2009 David left general practice to work full time with Nick on the microchip cat flap. Following the sale of the cat flap he worked as a veterinary consultant for the purchasers providing a veterinary perspective on all of their pet accessory products in a Global market. In 2011 David became the States Vet for the Bailiwick of Guernsey but he still has an interest in Pet Technology Store Ltd.



Nick Smith

Nick is the Technical Director of Pet Technology Store Ltd. The company specialise in the design, manufacture of microchip related products. Nick graduated in 1996 from Brighton University with a degree in Electronic and Computer Engineering. In 2006, in conjunction with David, Nick designed and developed the world's first commercial microchip cat flap, PetPorte, before selling the product to a large renowned American cat flap company in 2009. Since then Nick has been designing and developing microchip related products including the award winning Halo microchip scanner and the Scanner Angel missing pet system.

www.pettechnologystore.com

Telephone: 01481 266066



What is the BTEC Level 1 IT User Qualification?

The qualification develops and recognises learners' IT skills and knowledge and enables them to use IT effectively in their daily lives. These qualifications are designed to prepare learners for employment in the IT sector and they are suitable for those who have decided that they wish to enter a specific area of work within the IT industry. These qualifications have been developed to give learners the opportunity to:

- engage in learning which is relevant to them and will provide opportunities to develop a range of skills and techniques, personal skills and attributes essential for successful performance in working life
- gain a nationally recognised vocationally specific qualification to enter employment in the IT sector or to progress to Further Education vocational qualifications such as the Edexcel BTEC Level 2 Award, Certificate or Diploma for IT Users (ITQ) (QCF) qualifications
- develop functional skills and personal learning and thinking skills essential for successful performance in working life.



Planning and Drawing

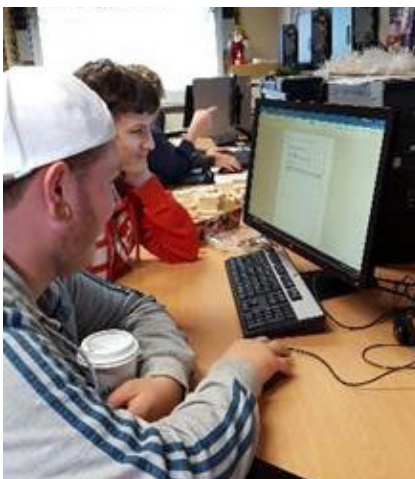
Clickety Click

4

Stop Motion

Stop Motion Animation making a scene from scratch using lego pieces. This will be constructed and photographs will be taken of each stage created, this will then be edited and put together into a stop motion animation using Adobe Premier.

Clickety Click is Levi, Lewis, James



Planning and Research

InsanlTy

3

Animation/Robot

Animation of building a simple robot step by step using time lapsing. A video will be taken of the creation of the robot from start to finish, this footage will be edited to show the construction in quick time motion.

InsanlTy is Jake and Tyler

Game On

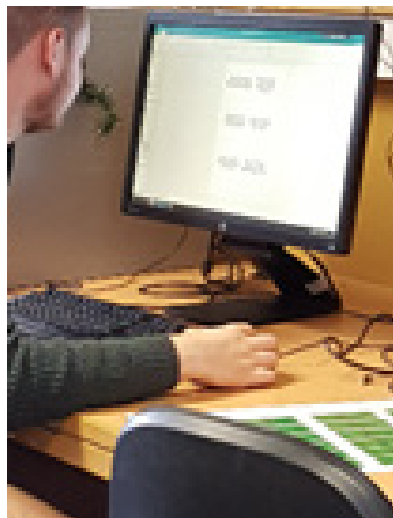
2

Board Game Design

These games have been made by all Level 1 students using Printers, Computers and Laminators to create boards and cards. **Quizblox** made from Jenga with general knowledge questions. **Quizzle Shot** - a Velcro target board with numbers and categorised question cards relating to the colour and numbers you hit with a ball. Marking cards are used to win the game. **DoodleDoo** – A board game crossed between Trivial pursuits, Monopoly and Ludo. A card game with a twist to Cards against Humanity.

Game On is:

Morgan and Jess



BTEC Level 2 Diploma Information & Creative Technology

What is the BTEC Level 2 Diploma Qualification?

The Level 2 Diploma qualification is a one-year course with a new syllabus to reflect the developments in this fast paced industry. This is equivalent to four GCSEs. This qualification is designed to prepare learners for employment in the IT sector and they are suitable for those who

BTEC Level 2 Diploma Information & Creative Technology

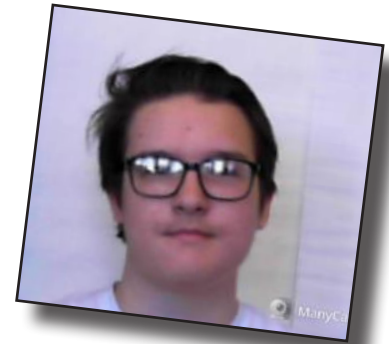
have decided that they wish to enter a specific area of work within the IT industry. This qualification has been developed to give learners the opportunity to engage in learning which is relevant to them and will provide opportunities to develop a range of skills and techniques, personal skills and attributes essential for successful performance in working life.

Atis Mulders

5

Graphic Design

Atis will display a variety of work produced using the latest tablet technology. He will be demonstrating the use of the equipment and be available to answer any questions about this very specialised area of Computing and IT.



ViZion

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Hello, today we are challenging people to build a PC in the smallest case we could find. Our group is Joe, Luca and Olly, the challenge is to fit a GTX 970 into a small case which we thought would be quite the challenge and therefore is good enough to be in the Student Tech Day.

We thought the idea of building a small PC would be an adventurous challenge for those who may or may have not built a PC before especially in these proportions.



AFK

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Team AFK – Keenan Le Cheminant, Fraser Holloway, Alexander Haines

Our team will be demonstrating automated systems using a small robot which will have sensors for detecting line following, and touch sensors. The robot will be controlled by infra-red technology. This forms part of a unit on our course.



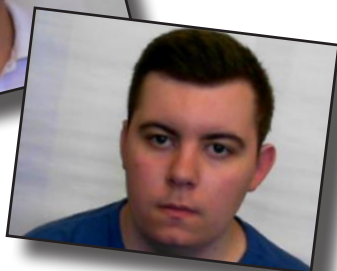
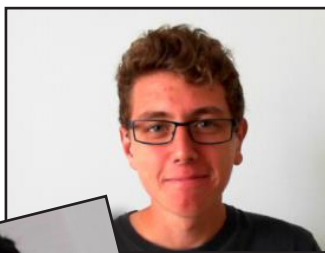
What is BTEC Level 3 Foundation Diploma in Computing?

Course Overview:

The Level 3 qualification is aimed at students wishing to develop a broad range of computing skills that can lead to employment or to further study on a Degree Programme. The course is very popular and is normally over-subscribed. The entry requirements for this course are four GCSEs at Grade C or above, including English and preferably maths. The Level 3 qualification can be taken over two years with the second year learners working towards the Extended Diploma. This is equivalent to three A Levels and can lead to employment or can provide progression onto Higher Education programmes or apprenticeships.

Course Outline:

The course covers a maximum of 13 units over two years, the mandatory units covered are: Principles of Computer Science, Fundamentals of Computer Systems, Planning and Management of Computer Projects, Software Design and Development Project, IT Systems Security and Encryption, Business Applications of Social Media, The Impact of Computing. Examples of the other units include: Human Computer Interaction, Website Development, Computer Networking, Systems Analysis and Design.

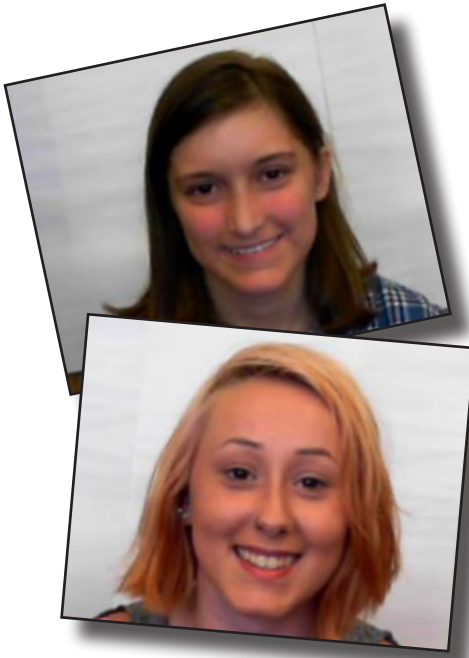


Naked PC

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Naked PC - Luke Williams, Christian Jones, Carter Eborall

In this project we have built a desktop computer where you can see the inside components, as well as a naked PC, that is on a board to show how the components work. The hardware will have labels next to them giving a description of how they work. We will explain what the components do and how to install them without damaging the hardware. Another computer will be built in the case to show the final setup of a PC. This will show our understanding of the workings of a computer and that we understand how all of the computer hardware works.



Taylor & Haswell

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Hi, we are Aimee Taylor and Mia Haswell. For this Tech day, we will be showing off our coding skills. We have decided to code a Tamagotchi style game in Python. We decided to base our idea on the real life Tamagotchi games, played by many people in the early 2000s. We chose to code this because we loved playing Tamagotchis as younger children and thought it would be a memorable game and it would also show off our love and ability to code. We will be showing the process, explaining our code and how we reached our final product.

RPSANN

19

Artificial Intelligence

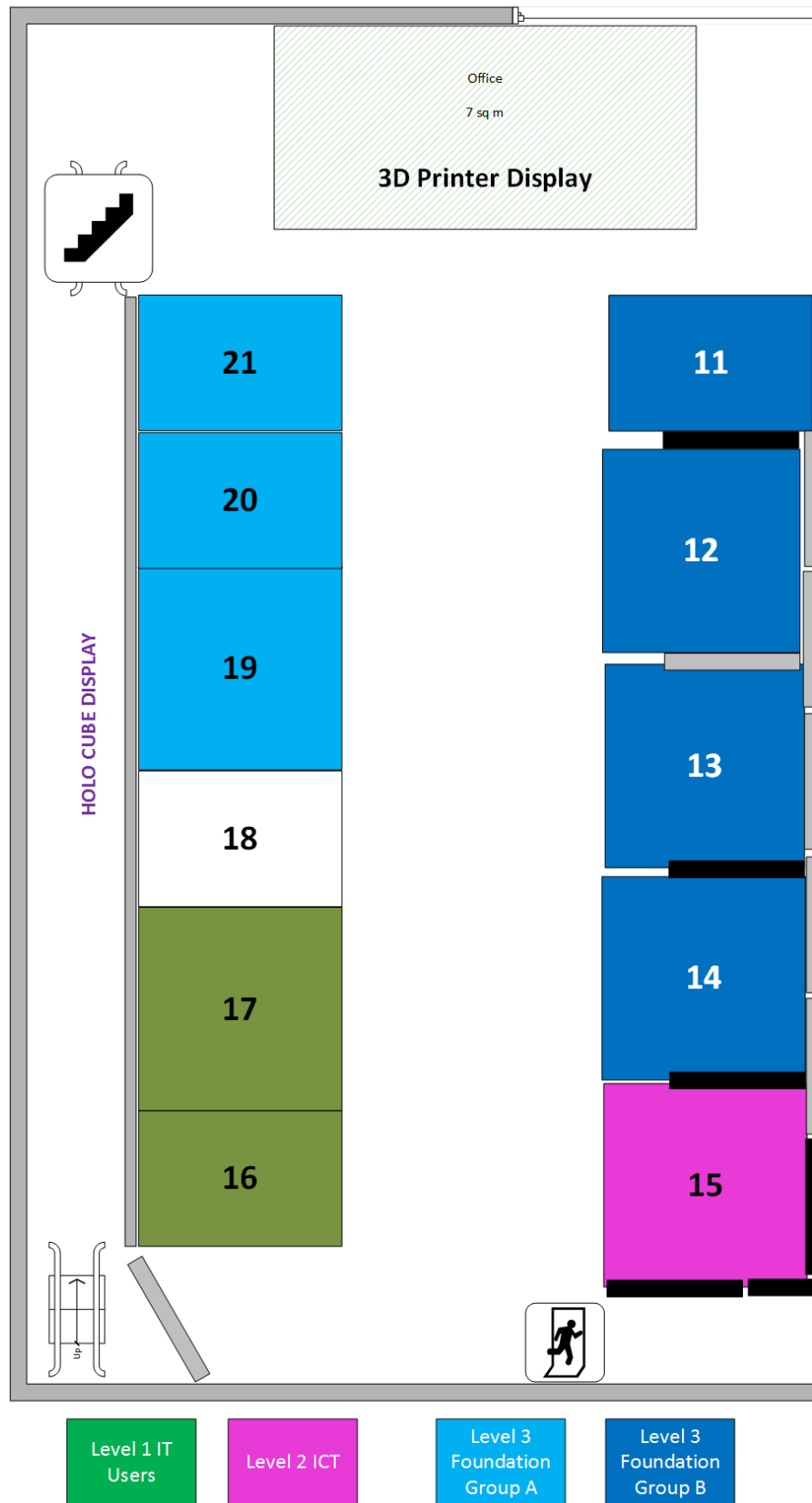
We are using a tried and tested AI model to try and achieve a win rate as close to 70% as possible in rock, paper, scissors. The idea is that the program will be able to recognise patterns based on experience and anticipate what the player will pick next and pick to beat them. We are displaying two instances of the AI, one with a great deal of experience to show the capabilities of this technology and another to show the learning process.

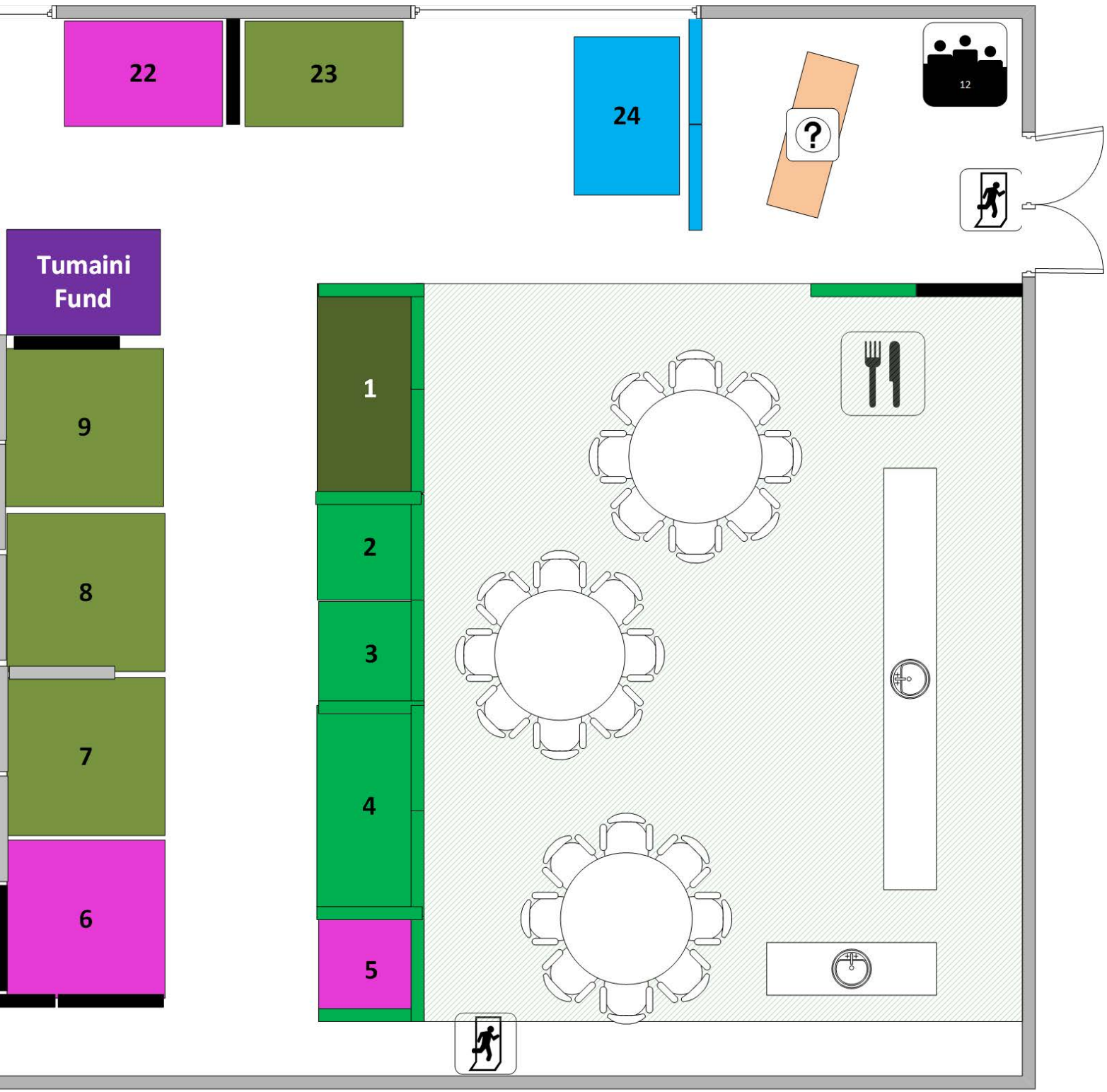


Floor Plan

Key

- 1 RnB (L2b)
- 2 Game On
- 3 InsanITy
- 4 Clickety Click
- 5 Atis (L2)
- 6 Team AFK (L2)
- 7 2 ½ Men
- 8 E-stuff (L3-2A)
- 9 2 Guys 1 PC (L3a)
- 10 Tumaini Fund
- 11 Naked PC (L3b)
- 12 Social Engineering (L3b)
- 13 RGB (L3b)
- 14 Game Development (L3b)
- 15 ViZion (L2)
- 16 Project XYZ
- 17 Wildfire
- 18 Jake Roberts
- 19 RPSANN (L3a)
- 20 Daily Donkey Data (L3a)
- 21 Taylor and Haswell (L3a)
- 22 Justice League (L2/3)
- 23 Captain Boogie... (L3Ex)
- 24 Alpha Project (L3a)





Level 3
Extended
Group A

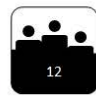
Level 3
Extended
Group B



Fire Exit



Future
Chefs
Restaurant



Meeting/
Info point



Welcome/
Info point



Daily Donkey Data

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Group Members: Tom Moloney, Billy Boreham, Jack Etheredge, Kerrin Le Page

Our goal is to provide data about Guernsey that is in one place on one website. We have gathered data from multiple forms of social media, news sites and information about transport for quick and easy access presented in a simple manner. It will be useful for residents and visitors to Guernsey. We are going to use HTML and other programming languages to achieve this.

Social Engineering

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Modern day life has security features everywhere, locks on doors and remotely triggered alarms. Being online should be no different. Having a password on something does not make it secure, there are many means to acquire passwords or bypass them. Passwords are the last line of security and by no means should it be first. Keeping a secure computer may be fine against your average online threat such as a virus or Trojan, but especially in business where human error equates to large percentages of issues due to social engineering, we need to be aware and knowledgeable about their online behaviour.





2 Guys 1 PC

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Virtualisation

Here at 2 Guys 1 PC, we have set ourselves a goal to explore different methods of creating virtual environments on standard computers. We are displaying a way to enable two users to use a single personal computer at the same time, on isolated environments. Each user will be able to use their own applications, separately from one another. The two users have their own mouse, keyboard and monitor in which both terminals use to operate independently. This technology has the potential to be up-scaled infinitely, only being limited by hardware.

RGB

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We will be using the Picaxe Software and MicroBot robots which were used in Level 2 to show other students what we did to them (ie programming them to follow a line) and will deploy them doing different tasks. The students can also change some of the program variables and code as a means of interaction and fun with the students, and will teach them the fundamentals of programming and its compatible hardware components.



Games Development

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Games Development and Industry

Our stand is dedicated to talking about and explaining the video game industry and video game development.

Jason and Thomas (presentation on video game industry): We (Jason and Jake) will be making and giving a presentation on the video game industry. We will be including things such as the history and economics of the gaming industry. We will also be talking about where the video game industry is heading, and how video game development has progressed throughout time.

Jake (Video Game Development): I (Jake) will be working on a video game that people will be able to play and test on Tech Day. I will also be learning about how video games are developed, and will give brief talks about how I developed the game.

Alpha Project

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We have two very different projects that we will have on display. One of them is our own iteration of a Triple Data Encryption Algorithm program (3DES) made on python. This will encrypt a piece of text that the user enters by applying an algorithm that will be applied three times to the text with three different keys to make sure the text that is encrypted it virtually uncrackable. Our second Idea is an endless runner game where you simply have to try last as long as possible and get the highest score that you can by avoiding getting hit by the objects that are flying into the screen.



IT Apprenticeships and Higher Education

We are looking into the options

IT Apprenticeships

The College is currently exploring the possibility of providing IT apprenticeships for the Island and consulting with key stakeholders as a means to discover whether there is a requirement and desire for these to exist.

Many hundreds of islanders have successfully trained for rewarding careers through the States Registered Apprenticeship Scheme, which has now been in existence for over 60 years, and has an annual enrolment of over 70 new apprentices per year and a registration of over 500 employers.

The Apprenticeship concept for IT is being explored and we would welcome your feedback on which level of course would meet your business needs. Get in touch and help us to build this new offer together.

IT Higher Education

You have told us you need higher level technical and professional skills. In response to your feedback the College is now launching a Higher Education Programme for IT Digital, which will enable students to achieve HNC Level 4 and move to HND Level 5 over one or two years.

This course will establish a pathway for learners in line with the needs of the professional organisations, providing the following compulsory elements:

- Business Skills for e-Commerce
- Computer Systems
- Employability and Professional Development

If you are interested in either talking to us about IT apprenticeships or finding out more about our Higher Education offer, get in touch.

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BTEC Level 3 Extended Diploma Information & Communication Technology

What is BTEC Level 3 Extended Diploma in Information & Communication Technology?

The BTEC Level 3 Extended Diploma extends and deepens the specialist work-related focus from the first year Diploma. There is potential for the qualification to prepare learners for appropriate direct employment in the vocational sector and it is suitable for those who have decided that they clearly wish to enter a particular specialist area of work. It is broadly equivalent to three A Levels.

Some learners use the qualification in order to enter a specialist area of employment and over 90% of our students enter subject related employment.

From September 2017 the College will be offering an HNC course to allow further skills building and opportunity for our learners. This qualification will support professional careers in roles such as business IT consulting, technical service support, technical systems administration, software development, systems management and project management.



E-stuff

8

Just Electrical Stuff

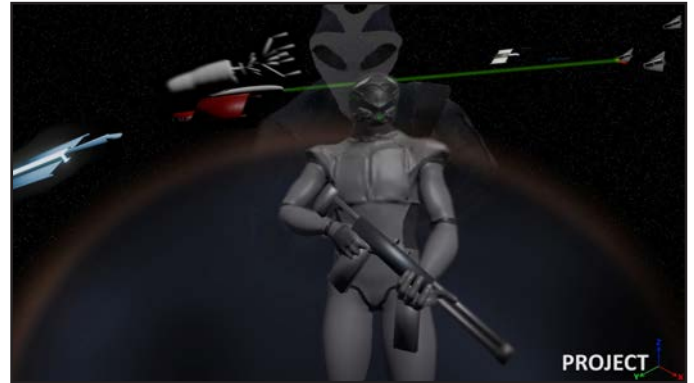
E-Stuff's projects display the wide variety of applications of electronics. These interactive projects include: Floppy Drive Orchestra, a reaction speed tester, a Digital clock and an LED strip controlled from a web interface. There will be leaflets available at the stand that contain more information about each project and what went into it. The team consists of Samuel Knowles and Ethan Waterman, who each brought their respective skills to the table.

Project XYZ

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Gaming

The team is demonstrating their technological prowess with the unreal engine with a project dubbed "Project XYZ". The project primarily is a third person shooter, containing most of the basic game mechanics of it, however it will also contain other game mechanics that would often be associated with puzzle based games. The main shooter aspect is futuristic and it is based upon an inbound alien invasion, and your protagonist is determined to stop it.



Programmer, 3D Modeller, Audio Designer – Peter Mauger
3D Modeller, Concept Artist– Jordan Caradeuc
Audio Designer, Conceptual Level Designer – Jake Mahy



Two and a Half Men

7

Webdesign

We created a website to showcase ourselves and our skills in the area, as we all have a vested interest in the subject. We will be showing you the website, including a PowerPoint that discusses how our website was made. We will also be showing you the code we used to create our site.

We have used HTML as a backbone to produce our website, and used CSS to correctly format and style it. The website will be about us, what skills we have and our hobbies. We hope you enjoy visiting our stand, and learning more about website design.

Wildfire

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Network Gaming

Project Wildfire is an unofficial replacement for the now-defunct GameSpy multiplayer service, operated by Alexander Stopher. Unlike other similar services, Project Wildfire requires no additional software and minimal installation to work. As such, it is able to support multiple platforms and game modifications easily using its infrastructure of virtual servers running on a physical architecture. The project's official website is wfstat.us, with the project's members being contactable via alexander.stopher@nexusgaming.gg & ben.renouf@nexusgaming.gg. Wildfire is currently being expanded with the Nexus Game Networks game-server-hosting service.



Justice League

22

Emma Torode (Level 2) and Chloe Dodd (Level 3 Extended Dip) have been working on recording a typical week in the life of a student studying at Guernsey College of FE. They will also have some other short video work on display.





Captain Boogie Woogie and the Sailors.

23

Server Management/phishing

We have designed and built a small network to replicate a work place, including servers such as a working email server, a SQL server, web server etc. Briefly looking at a firewall system and other security methods. We will show how being in different user groups effects the files that you can see, through log on scripts and sharing. This is an extension of what we have learnt at College, as we realised if we want to work in IT we think it is important to understand how a server works."

RnB

1

Past, Present & Future

Hello World, we are Nathan, Rhys and Brett. We are three Level 3 IT students who will be explaining and discussing the evolution of hardware in the past, its current state and where the technology will be in the future. We have many examples of hardware from past and present to back up our ideas and theories. Each of us have an eagerness to discuss our ideas and our hopes for future careers in IT fields.





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