**Data Science Workshop Game**

**Premise:** This is a resource allocation and discussion game that is intended to get people talking about the issues entailed in building a data science solution that is suitable for a specified project.

**Aim:** To be the person who accumulates the highest number of victory points by the end of the game. Victory points are gained by being part of a team that finishes in the top 3 each round.

**Format:**

Players will be divided into teams of about 8.

There will be a series of rounds (probably around 3) lasting about 20 minutes each.

The rounds will consist of:

* Formation of team (1 minute)
* Presentation of the mission (2 minutes)
* Allocation of resources – building of solution (10 minutes)
* Recording of solution (3 minutes)
* Judging and allocation of points (4 minutes)

Between rounds players will be expected to move between teams (i.e. form a new team each time)

At the end of the game prizes will be given to the top 3 players.

**Set up:**

Players will be seated at round tables in teams of 8.

At each table there will be a pool of staff and technology cards.

There will be an A3 Solution Sheet at the Table, which will be refreshed each round.

**Game Play:**

In each round:

Players will sit at one of the tables.

Game Moderators will present the round’s mission.

The mission will consist of a data science challenge that will require the teams to create a solution consisting of:

* Solution Description
* Staff
* Technology

The team will work together to build a solution to the challenge. They will agree what their team would do address the challenge if presented with this situation in real-life. This discussion will generate the Solution Description.

The team will then select Staff and Technology that would be required to implement the solution described.

The team will place their solution on the answer board (cards and written description). Moderators will photograph the solution for judging.

Teams are then disbanded and players move to different tables.

The solution will be judged on the following:

Description: Does this solution make sense?

Would the staff and technology enable the implementation of this solution?

Staff: Are the skills possessed by the selected staff appropriate?

Are all necessary skills present?

Are there any unnecessary people?

Is the team appropriately balanced?

Technology: Is the selected technology appropriate?

Are critical items missing?

The teams’ performance will be adjudged and Victory Points awarded as follows:

|  |  |
| --- | --- |
| **Position** | **Team Member** |
| 1st | 3 |
| 2nd | 2 |
| 3rd | 1 |

**End Game:**

After the final round each player’s victory points will be totalled. Prizes will be awarded as follows:

|  |  |
| --- | --- |
| **Position** | **Prize** |
| 1st | £100 |
| 2nd | £50 |
| 3rd | £25 |

Prizes will be shared if there are ties.

**Staff cards:**

|  |  |  |
| --- | --- | --- |
| **Team member** | **Cost** | **Function** |
| UX Specialist | 5 | Designs intuitive user interfaces |
| Data Wrangler | 5 | Cleans and refines complex data |
| Data Architect | 10 | Oversees the data strategy – blends data from multiple sources effectively |
| Visualiser | 5 | Enables insights to be readily understood |
| R Coder | 5 | Skilled in building R systems |
| Python Coder | 5 | Skilled in building Python systems |
| Multi-language Coder | 20 | Understands a wide range of programming languages and development environments |
| Time Series Analyst | 5 | Skilled in obtaining meaning from temporal data |
| Spatial Data Analyst | 5 | Skilled at using spatial data |
| Recommendation Engine Specialist | 5 | Builds effective recommendation engines |
| Statistical Computing Expert | 20 | Has mastery of a wide range of techniques for modelling data and drawing accurate inferences |
| GDPR and Ethics Expert | 10 | Expert at ensuring sensitive and personal data is correctly handled |
| Neural Networks Specialist | 10 | Specialist in using deep learning techniques |
| Cyber Security expert | 10 | Expert at defending systems against intrusion |
| Cloud Computing Specialist | 5 | Understands the implications of moving a computing environment to the cloud. Skilled at using cloud environments effectively. |
| Hardware Specialist | 5 | Good understanding of managing on-site hardware |
| Vendor Service Manager | 5 | Skilled at ensuring quality service delivery from vendors |
| Datacentre Manager | 5 | Expert at overseeing local computing centres |
| Agile Project Manager | 5 | Skilled at rapid delivery of development projects |
| Prince 2 Project Manager | 5 | Skilled at formal project management and reporting |
| Customer Relationship Manager | 5 | Skilled at ensuring customer requirements are understood and delivered against |
| Domain Expert | 5 | Provides subject matter expertise |
| Network Engineer | 5 | Understands efficient use of telecommunications |
| Behaviour Analyst | 5 | Skilled at gaining understanding of service user behaviour |

**Technology Cards:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Technology** | **Cost** | **Function** | **Examples** | **Reduced Effectiveness wtihout** |
| Basic networking | 10 | Links to remote sites, customers, cloud datacentre |  |  |
| Heavy-duty networking | 20 | High volume data transit |  | Network engineer |
| Commodity server farm | 20 | Local computing facility | Standard servers running UNIX, Windows etc. | Coder  Hardware Specialist |
| Replicated high-performance datcentres | 60 | High performance local computing | High-performance servers running UNIX, Windows, Hadoop etc. | Coder  Hardware Specialist  Datacentre Manager |
| Basic Cloud Presence | 20 | Basic remote computing | AWS  Azure | Coder  Cloud Computing Specialist |
| Heavy-duty  elastic cloud Services | 30 | Enhanced remote computing | AWS  Azure | Coder  Cloud Computing Specialist  Service Manager |
| Visualisation workshop with basic software | 10 | Build effective visualisations | Shiny | Coder  Modeller  Visualiser |
| 3D immersive visualisation cave | 20 | Build impressive visualisations | Qlikview  Tableau | Coder  Modeller  Visualiser  Hardware Specialist |
| Basic Analytics | 10 | Data description  Basic inference  Statistical Modelling | R libraries  Python libraries  SPSS  RapidMiner | Time Series Analyst  Spatial Data Analyst  Recommendation Engine Specialist |
| Advanced Analytics | 30 | Advanced analytics for complex data | R libraries  Python libraries  SAS  Power BI  IBM Cognos  SAP | Time Series Analyst  Spatial Data Analyst  Recommendation Engine Specialist |
| Basic Security control Package | 10 |  | Firewall  AVS | Cyber Security expert |
| Multi-compt defence | 20 |  |  | Cyber Security expert |
| Basic Database | 10 | Data repository | MySQL  MongoDB | Database Specialist |
| Advanced high-performance Data repository | 20 |  | SQL PDW  Hive/MySQL/Derby  Oracle | Database Specialist |