## OBJECTIVES

In nova days it is impossible to imagine digital media's world without recommender systems. Widely used recommender systems are build using Collaborative filtering or Collective intelligence. Those technologies are heavy relaying on community and information gathering. In this project we will try to collect data about how human learn categories and apply this knowledge to create a music recommender.

## PROJECT DESCRIPTION

In this project using the prototype distortion (A,B) task to estimate accounts between category exemplar and initial prototype. We will create a space with dimension for each stimulus component. In this space, each category exemplar is identified by a single point and the category prototype is represented by point in the centre of the cloud of points denoting all exemplars of the category. This technique described by Smith & Minda[1]. Our main focus of interest is a shape of the cloud of points.

To ensure unfamiliarity and illuminate by any chance acquaintance with category exemplars will be created arbitrary categories (so-called "artificial categories"). Arbitrary categories for this project will be designed as prototype distortion (A,B) tasks. Prototype distortion tasks are one of the types of category learning tasks in which each category is created by first defining a category prototype and then creating the category members by randomly distorting these prototypes. To subjects will be presented exemplars of distorted A and B categories prototype. The task of the subject is to respond with the correct category label on each trial (i.e., A or B). During experiment will be observed their behavioural performance (accuracy, response times) of the testing, observation will last during the period when their ability to assign stimuli to these categories rise from chance to some stable level.

After experimental part ran results will be processed and interpret graphically. This graphical representation of human learning bound will be used as a core for new music recommender system. System concept is any digital media is possible to represent as a vector. Those vectors easily can be mapped on our graphical representation of human learning bound.

## ROLES AND RESPONSABILITIES

All arbitrary prototypes will be designed and created by student Olga Dmitricenko (s061242). Distortion of the prototypes will be made by supervisor Professor Tobias Andersen. Experiment will be designed and discussed with Professor Tobias Andersen and later run by Olga Dmitricenko. Results evaluation and graphical representation will be made by Olga Dmitricenko. Music recommender will be designed and build by Olga D.

## LEARNING OBJECTIVES

Have a solid knowledge about rule-based, information-integration and prototype distortion tasks. Know deference between prototype theory, exemplar theory and decision bound theory. Be able to apply this knowledge in software engineering. Have extensive knowledge about cognitive science experiments and it data representation.

[1] Smith JD, Minda JP. 2001. Journey to the center of the category: the dissociation in amnesia between categorization and recognition. J. Exp. Psychol.: Learn. Mem. Cogn. 27:984–1002.